

San Francisco Common Yellowthroat

Climate Change Vulnerability
and Adaptation Strategies for the
Golden Gate Biosphere Region



Species Description

The San Francisco subspecies of the common yellowthroat (*Geothlypis trichas sinuosa*), also known as the salt marsh yellowthroat, is found in coastal riparian, freshwater and brackish wetland areas of Marin County, San Pablo Bay and San Francisco Bay, and freshwater wetlands in San Mateo County. They breed and forage in areas with dense vegetation, where they nest near the ground in grasses and herbaceous vegetation. San Francisco common yellowthroats are primarily insectivores and glean insects on or near the ground to feed themselves and their young. The San Francisco common yellowthroat is listed as a California Species of Special Concern within the state, a designation driven by historic and ongoing losses of its wetland and riparian habitats in the San Francisco Bay region.

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Species Vulnerability - Moderate

Sensitivity & Exposure - Moderate

| Projected Changes | Trend |
|-------------------|------------|
| Precipitation | ▲▼ Varies |
| Sea level rise | ▲ Increase |
| Storm surge | ▲ Increase |

Potential Impacts:

- Altered extent, timing, and duration of inundation in foraging and breeding habitats due to shifts in precipitation regimes, threatening food and habitat availability
- Decreased habitat suitability due to increased salinity levels
- Increased threats to nests, which are located near the ground, due to storm surge and other disturbance events

Non-climate stressors may interact with climate stressors and disturbance regimes:

- *Residential and commercial development* and associated *roads, highways, and trails* drive fragmentation and loss of riparian and wetland edge habitat
- *Agriculture and rangelands* have led to the loss and degradation of wetland and riparian habitats and have contributed to increases in salinity and diminished vegetation structure that contribute to population declines
- *Dams and diversions* alter flow volume and timing as well as sediment transport, impacting the quality and availability of marsh and riparian edge habitats
- *Invasive plants* are, in some cases, associated with reduced abundance and distribution of San Francisco common yellowthroat; *problematic species* such as predators associated with human development (e.g., cats) can also impact populations.



The San Francisco common yellowthroat is sensitive to factors that disrupt nesting sites, degrade or fragment habitat, and limit access to foraging areas.

Species Vulnerability - Moderate

Adaptive Capacity - Moderate

Intrinsic factors (i.e., inherent characteristics) that enhance or undermine adaptive capacity:

Enhance:

- Relatively mobile species, allowing for movement between fragmented habitats
- Flexibly uses a variety of marsh and riparian vegetation for foraging and nesting

Undermine:

- 80–95% population decline over the last century
- Habitat degradation and loss limit abundance and habitat connectivity

Extrinsic factors (i.e., management potential) that enhance or undermine adaptive capacity:

Enhance:

- Benefit from federal and state wetland regulations
- State listing as a subspecies of concern could bring funds for conservation and management

Undermine:

- Existing management actions in the region tend to focus on other species at higher risk of extirpation



Although they are mobile and can utilize various sites for nesting and foraging, the adaptive capacity of the San Francisco common yellowthroat is undermined by the degradation and loss of their habitat and significant population declines over the last century.



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Adaptation Strategies & Actions

Adaptation strategies can reduce climate change vulnerability of a given ecosystem or species by addressing any or all of the three components of vulnerability (i.e., by reducing sensitivity, reducing exposure, and/or increasing adaptive capacity). The table below presents examples of adaptation strategies and actions, which fall within five categories, or approaches: Resistance/Resilience **(R)**, Acceptance **(A)**, Direct/Response **(D)**, Knowledge **(K)**, and Collaboration **(C)**. *Please note that the strategies and actions provided here should not be considered a checklist or plan, but rather as a set of examples for land managers to consider for further study when developing site- or species-specific actions.*

| Adaptation Strategies | Adaptation Actions |
|--|---|
| <p>Protect and restore a mosaic of habitats within the range of the San Francisco common yellowthroat, including low-salinity marshes/marsh edges and transition zones from fully tidal to riparian</p> | <ul style="list-style-type: none"> • Prevent development and other factors that destroy or degrade tidal marshes and adjacent landward habitat where tidal marshes may shift with sea level rise (R) • Maintain existing tidal channels and construct artificial channels, as needed, through tidal marshes inhabited by yellowthroats (R) • Use fee simple acquisition, conservation easements, and other tools to conserve tidal marshes and adjacent habitats (R) • Require site-specific management plans and implement actions that promote the hydrological inputs of fresh and salt water to support the necessary plant communities (e.g., tule, cattail, bulrush) and edge habitats preferred by the species (R/K) |

Adaptation strategies and actions suggested by individual stakeholders (not discussed during the December 2023 adaptation workshop).



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