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HISTORICAL AND CURRENT BREEDING STATUS OF THE PEREGRINE FALCON IN THE EASTERN SIERRA OF MONO AND INYO COUNTIES, CALIFORNIA

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ABSTRACT: Historical data suggest that over 100 pairs of the Peregrine Falcon (*Falco peregrinus*) were nesting in California prior to the mid-1940s. Because of the deleterious effects of DDE, a sharp decline began in the 1950s, and by 1970 only about 5% of the population remained. Following pesticide restrictions and aggressive management and recovery efforts using captive-bred Peregrines, the population rebounded rapidly and continues to increase into the 21st century. Although information necessary to enable the species' conservation was circulated, few details on its historical and recent breeding status at either the statewide or regional level have been published. Here we report available details for breeding Peregrines in the eastern Sierra Nevada of Mono and Inyo counties. Data on seven suspected historical breeding locations are sparse. Since 2005, breeding has been verified or suspected at 14 locations, 11 spanning the length of Mono County and 3 at dispersed locations in Inyo County. Of these, four were newly identified in 2025. Despite the dramatic comeback, vigilance and monitoring are needed. Notably, Peregrine mortality from highly pathogenic avian influenza may be an important cause of population decline in many regions of North America, including California, since 2022. Although the effects appear to have been greatest in coastal areas, where the falcons depend heavily on shorebirds and waterfowl (known to carry avian flu), problems have surfaced inland, including possibly at the base of the eastern Sierra where these prey concentrate in spring and summer at saline lakes and freshwater reservoirs.

As a species considered "the most courageous, the most spirited of all birds of prey" (Dawson 1923), the Peregrine Falcon (*Falco peregrinus*) has attracted much attention and admiration. In California, Grinnell and Miller (1944) considered the subspecies *F. p. anatum* "fairly common for a hawk" and resident throughout the state, except in the southeastern deserts. There is no evidence of any broad-scale declines of breeding populations in California or the western United States through the mid-1940s (ibid., Bond 1946).

Herman (1971) made an initial estimate of about 100 pairs in California in 1946. Thelander (1976) did not estimate the population size but reported 18 attempted nestings in 1975 and 1976 combined; of the 16 nests with adequate data, 12 fledged a total of 28 young. Kirven and Walton (1992) later judged there may have been as many as 350 to 400 breeding pairs of Peregrines in California in the early 20th century. Nevertheless, any reasonably accurate estimate of the size of the historical nesting population in California from records spanning many decades will always remain elusive, given the fragmentary data from a small number of active observers, uneven geographic coverage, and no knowledge of how many eyries were occupied at any one time.

Biologists have made great efforts to identify the Peregrine's historical nesting sites in California from published and unpublished sources, reviews of egg sets in museums, and interviews with active field workers, naturalists, rock climbers, photographers, falconers, and others (Bond 1946, Herman et al. 1970, Thelander 1976, 1977, Thelander and Walton 1976, Walton et al. 1988, Walton 1998, CDFW 2019, Santa Cruz Predatory Bird Research Group unpubl. data, C. G. Thelander in litt.). This has led to an accumulation of verified and suspected historical and current nesting locations (e.g., Thelander 1977, 210 sites; White et al. 2024, 244; CDFW 2019, >400), tallies of the number of territories occupied at least once since 1975 (162, Linthicum and Walton 1992; 190, Walton 1998), and minimum estimates of the number of active breeding pairs in the state from annual censuses from 1975 to 1992 (Thelander 1977, Walton 1998). Although these sources provide insight into the species' former and current distribution in California, very little detail has been published on the species' status at the statewide, regional, or local level for any interval. This lack of specificity reflects the desire to conceal the location of known nest sites to protect them from various threats. After his 1946 paper on the Peregrine's status in the western United States, including California, R. M. Bond provided a confidential report to both the Museum of Vertebrate Zoology at Berkeley and the California Department of Fish and Game (now Wildlife) that identified about 120 nest sites in California (Walton 1998:4). Unfortunately, this report has been lost (ibid.). Subsequent biologists, who have examined Bond's notes, maps, and correspondence with cooperators, have adopted a protocol that references the specific nest sites with alphanumeric identifiers based on broad ecological subregions of the state (Herman et al. 1970, Thelander 1977).

To document the historical and current status of breeding Peregrines in one subregion of California, we summarize the species' distribution, abundance, and population trends in the eastern Sierra Nevada of Mono and Inyo counties, within the context of its overall breeding status in California. We also describe past recovery efforts and discuss current potential threats to the species in the eastern Sierra.

STUDY AREA AND METHODS

Our area of interest was, primarily, the east slope of the Sierra Nevada and the parts of the Great Basin Desert in Mono County and western Inyo County, and, secondarily, the northwestern portions of the Mojave Desert in southern

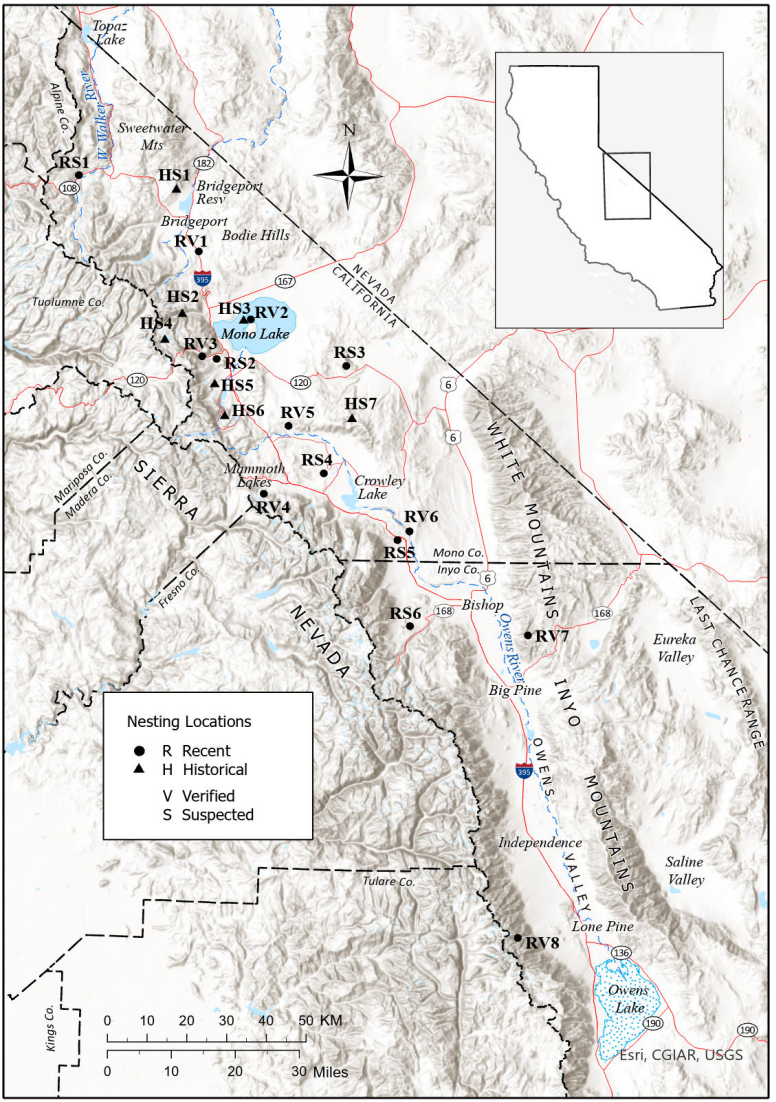

FIGURE 1. Locations of historical and recent nesting of the Peregrine Falcon in the eastern Sierra Nevada of Mono and Inyo counties, California. Historical locations: HS1, north of Bridgeport; HS2, Lundy Canyon; HS3, Negit Island; HS4, Saddlebag Lake; HS5, near Grant Lake; HS6, north of Silver Lake; HS7, 15 km north of Crowley Lake. Recent (2005–2025) locations: RS1, north of Hwy. 108 west of Pickel Meadow; RV1, Hwy. 395 near Bodie Rd; RV2, Mono Lake islands; RV3, Lee Vining Canyon; RS2, near Lower Horse Meadow; RS3, Granite Mountain; RV4, Mammoth Rock; RV5, Clark Canyon; RS4, Hot Creek; RV6, Owens River Gorge; RS5, Lower Rock Creek; RS6, south of Buttermilks; RV7, Black Canyon; RV8, North Fork Lone Pine Creek.

Inyo County. In this two-county region, in general, precipitation decreases and temperature increases from west to east and north to south. In addition to the Sierra, other mountain ranges, include the Sweetwater Mountains, Bodie Hills, Glass Mountain Range, White–Inyo Range, and Panamint Range, reach 3050 to >4270 m (10,000 to >14,000 ft) elevation. These, as well as various drier and lower ranges, all have cliffs for potential Peregrine nesting. The valleys just east of the Sierra, fed primarily by runoff and snowmelt from that range, offer excellent foraging. These include freshwater marshes, wet meadows, and reservoirs in the Antelope, Bridgeport, Long, Adobe, and Owens valleys. The large saline Mono and (remnant) Owens lakes, as well as much smaller saline lakes in Long and Adobe valleys, afford further foraging habitat.

For past and current information on the status of breeding Peregrines in the eastern Sierra, we consulted published literature and unpublished reports and contacted local birders, climbers, agency personnel, and others who might be aware of nests. Because Gaines (1992) and Heindel and Heindel (2023) thoroughly researched published records for their books covering most of the eastern Sierra in Mono County and all of Inyo County, respectively, we checked only more recent seasonal reports in *North American Birds* (NAB) that pertained to those counties. In addition, we downloaded or viewed all records of the Peregrine Falcon for these counties from both eBird (ebird.org/home) and iNaturalist (inaturalist.org/), sorting records by breeding codes and focusing on those from May through July, which generally encompass the period from egg laying to fledgling in this region. For records of verified or suspected breeding from these sources, we often contacted individual observers for further details of their sightings. For nesting status before 1970, we also obtained information, summarized from R. M. Bond's field notes (and other sources), provided by Carl G. Thelander, which are housed at the Archives of Falconry in Boise, Idaho (falconry.org/).

In 2025, from early April to late July, we worked with volunteers to attempt to survey all sites that had been active since 2005, and to follow up on additional leads, to enable a minimum estimate of how many pairs of Peregrines were nesting in the eastern Sierra in a single year.

In the early afternoons of 1 and 20 April 2025, C. Fellhoelter made visits of 45–60 min to the Eldorado Roof area of the Owens Gorge to check for Peregrines where they appeared to be breeding from 2020 to 2024. On a tip from E. Engles, from 08:00 to 16:00 on 19 June Shuford searched on foot for falcons around cliffs on both sides of a valley trending northwest–southeast in the center of the Granite Mountain Wilderness Area but just south of Granite Mountain proper. After seeing at least one Peregrine there, he returned on 20 June and watched from ~07:15 to 09:30 to attempt to confirm nesting. Also on 20 June, following up on observations by a former climbing guide of Peregrines at the Benton Crags in past years (S. P. Parker *fide* S. Miller), Shuford searched for falcons there from 11:45 to 13:45, viewing the crags from afar from the nearest dirt road then walking cross country through piñon woodland to the base of the cliffs. Finally, from about 15:00 to 16:30 on 20 June, Shuford looked for evidence of Peregrine nesting at a site on Hot Creek that was active in 2020, searching potentially suitable cliffs from the former nest site upstream through the Hot Creek Geological Site. From one spot on the adjacent trail, he spent from 15:30 to 16:30 on 21 June looking for Peregrines

at Mammoth Rock, where they had nested in prior years. Following up on an observation of a Peregrine near the junction of Hwy. 395 and the Bodie Rd. made by K. Hansen from a moving car at about 15:00 on 19 June, Shuford returned to that area at 14:10 on 22 June to look for nesting activity; S. Miller and R. Knapp made additional observations there later that afternoon. At a location where she had seen Peregrine activity in Lee Vining Canyon in previous years, S. Miller searched for evidence of nesting on 25 March, 3 and 20 April, 6 May, and 27 June (eBird). D. House surveyed a former nesting site in the upper Owens River Gorge on 23 June (evening) and 26 June (morning) and made opportunistic observations of Peregrines from late June to early July around the community of Paradise. K. Ferrell made biweekly visits from April through June to areas along Lower Rock Creek where she and others had seen evidence of Peregrine nesting in prior years. In the afternoon on 22 June, Shuford spent about 1.5 hours searching for nesting Peregrines along Hwy. 108 in the West Walker River drainage, focusing on cliffs just north of the picnic area by the West Walker River Bridge and those west-northwest of Pickel Meadow Wildlife Area (West) but also checking a few spots in the next 6 km up the road. On 27 June 2025, E. Cox spent five hours searching for nesting Peregrines along Hwy. 108 in the West Walker River drainage, focusing on the two areas that Shuford had checked five days earlier but also checking other cliffs upslope to Sonora Pass.

In Inyo County, C. Fellhoelter checked a previously suspected nesting site near the Buttermilk bouldering area from 15:30 to 16:00 on 21 April. On the evening of 21 May, R. and C. Howard attempted to drive a four-wheel-drive truck to the nest site formerly active in Black Canyon but were unable to reach it because the rugged road was washed out far from the nest site. On 24 July, R. D. Kokx hiked into Black Canyon to look for evidence of nesting Peregrines. Over the course of the breeding season, he spent many hours in the canyon of North Fork Lone Pine Creek checking the status of two eyries that had been active there in recent years. Spurred by a 12 July report of a pair of Peregrines around the Candlelight Buttress, just south of Whitney Portal, on 13 July Kokx first scoped the buttress then hiked up the Meysan Lake trail along the south side of the formation to look for Peregrines.

We also reviewed eBird and iNaturalist sightings of Peregrine Falcons in Mono and Inyo counties made from April through July 2025.

In describing the reliability of information on nesting locations, we followed Thelander (1977) in considering "verified" locations as ones "where eggs or young are reported in one or more years" and "suspected" locations as ones "where adult Peregrines frequented specific cliffs in the nesting season but where, for a variety of reasons, data on eggs or young are unavailable." To categorize a nest as containing young, we accepted both direct observations of young at the nest site and aural detections of begging young when adults returned to the eyrie with food even if the young were not visible to the observer. We also describe other indications of breeding such as both adults displaying or calling vigorously around a likely nest site, aerially harassing other raptors, ravens, or vultures, and other aggressive behaviors. When the number of years a nest fledged young is known, we also report that number and how many years evidence suggested nesting before it was confirmed.

RESULTS AND DISCUSSION

Historical Status: Eastern Sierra

There is evidence for seven historical nesting sites for the Peregrine in the eastern Sierra, most of which are in northern and central Mono County (Figure 1). The documentation for most of them, however, is from second-hand accounts, often provided years after nesting was observed, with details that are incidental at best or lacking entirely. None of the historical accounts provide unequivocal documentation of nesting such as observation of eggs or young, and no egg sets for this region are in museum collections (C. Thelander in litt.). The most thorough account is from a visit to Negit Island in Mono Lake by Joseph Dixon and others on 27 May 1916 (Grinnell and Storer 1924:295). The party was noisily circled by a pair of Peregrines; although they were certain that the falcons were breeding, a search for a nest proved fruitless. Despite additional sporadic visits to the lake's islands through the early 1970s that yielded estimates of the numbers of nesting gulls (Winkler and Shuford 1988), there appear to be no other observations of Peregrine nesting during that time.

Other historical breeding sites reported for this region include an eyrie near Grant Lake, about 10 km southwest of Mono Lake, in 1948 and one in the upper Owens River drainage 15 km north of Crowley Lake, active until the early 1960s (McCarthy et al. 1986). In some year(s) from 1931 to 1935, there apparently were active nests north of Silver Lake near June Lake and at Saddlebag Lake near Tioga Pass (D. D. McLean *fide* R. M. Bond). Gaines (1992) presumably had confidence in specifying the mouth of Lundy Canyon as a nesting site, but his source for this record is unknown, as his citation is in error and no other report has been attributed to a specific observer (C. Thelander in litt.). A. P. Marshall (*fide* R. M. Bond) reported an active eyrie just north of Bridgeport overlooking "Sweetwater Lagoon," presumably what is now called Bridgeport (formerly Sweetwater) Reservoir. D. D. McLean recounted (in 1969 correspondence with Bond) seeing Peregrines hunting during the nesting season in a meadow south of Bridgeport as late as the 1950s or early 1960s. Further afield, a report suggesting nesting from observations of two adults and an immature at 3780 m (12,400 ft) near Pellisier Flats in the northern White Mountains of Mono County in early August 1974 is inconclusive, particularly given the very high elevation and that a follow-up survey on 23 and 24 July 1975 failed to reveal any birds or an eyrie (CDFW 2019, CNDDB [Calif. Natural Diversity Database]; wildlife.ca.gov/Data/CNDDB).

Changing Status

As is widely known, the Peregrine Falcon's population plummeted (Hickey 1969, Cade et al. 1988) from the late 1940s to mid-1970s from eggshell thinning and other effects from the concentration of residues of DDE, a metabolite of the pesticide DDT, in the falcon's prey (Enderson et al. 1995, White et al. 2024). With the U.S. Fish and Wildlife Service listing the Peregrine Falcon (subspecies *F. p. tundrius* and *F. p. anatum*) as endangered in 1970, restrictions or banning of DDT in the United States from 1969 to1974, and releases of captive-reared Peregrines starting in the late 1960s (California in

the mid-1970s), North American populations increased rapidly in the 1980s and approached pre-DDT levels in the 1990s. The species was removed from the California and federal endangered species lists in 1999, and Peregrine numbers and nest-site occupancy continued to increase into the 21st century.

In California, by 1969 fewer than 10 breeding pairs of Peregrines were known (Herman et al. 1970). In 1970, Herman (1971) surveyed 62 of 98 verified historical nest sites, found two nesting pairs, and estimated a statewide population of ≤5 pairs, amounting to at least a 95% reduction from the approximately 100 pairs of Peregrine Falcons reproducing successfully in the state in 1946 (Herman et al. 1970, Herman 1971). A survey in 1975 and 1976 that checked 147 (70%) of 210 verified or suspected historical nesting sites in the state found only 8% of them occupied (Thelander 1976, 1977). An estimate of about 25 breeding pairs (min–max: 22–40) in California in 1976 implied a decline of about 80%–87% in the statewide population since ~1945 (ibid.). By 1979, the Peregrine Fund and the Predatory Bird Research Group at the University of California at Santa Cruz established a captive-breeding program that produced and released significant numbers of young Peregrines in California each spring.

Declines in the number of active nesting sites and local extirpations varied geographically. Whereas 90% of historical nesting sites in California were along or within 10 km of the coast, which accounted for just 5% of the original distribution, by 1976, 67% of active nesting locations were in the interior (Thelander 1976, 1977; Cade 1985). Given how little was known about the historical status of breeding Peregrines in the eastern Sierra, and that the region has never been a priority area for later surveys, few details are known of the population's trajectory prior to, during, and after the decline from the effects of DDT/DDE.

The minimum number of active California eyries increased from 38 in 1981 to 113 in 1992, the last year of annual surveys of all recently occupied territories in the state (Kirven and Walton 1992). By 1997, on the basis of the population growth rate from 1975 to 1992, there may have been 140+ active territories in the state (Walton 1998). In at least one year from 1999 to 2002, at least 99 Peregrine territories (nest substrate: 77 natural, 17 man-made) were known to be active in California (B. Walton and J. Linthicum *in* USFWS 2003). From the late 1960s through the 1990s DDE levels in Peregrine Falcon eggs in California declined only slightly (references in Walton 1998), emphasizing the importance of releases of captive-reared birds to the population's reestablishment (Kirven and Walton 1992). From 1977 to 1992, the number of Peregrines (all *F. p. anatum*) released in California totaled ~700 (Linthicum and Walton 1992).

With the delisting of the species in 1999, governmental funding for systematic and periodic monitoring ceased, leaving efforts to monitor nest occupancy and productivity in the hands of individual biologists (C. G. Thelander pers. comm.). Still, with more population growth reported each year, there are currently over 400 known historical *or* current territories in California (CDFW 2019). Concentrations today are on the Channel Islands, along the coast (including bridges), and in interior mountain ranges (e.g., Coast Ranges, Cascades, west slope of Sierra Nevada). Rather few pairs occupy the Central Valley, areas east of the Sierra Nevada, and the southern deserts (CDFW

2019). Since the 1990s Peregrines have been nesting in the Mojave Desert, where their earlier status was unknown (see below).

Recovery Efforts: Eastern Sierra

In response to the federal listing of the species, four regional recovery plans were established, including one for the Pacific coast population of the American Peregrine Falcon (*F. p. anatum*) (USFWS 1982). Under that initiative, a local interagency recovery plan was established for the Mono Basin and adjacent areas (McCarthy et al. 1986). From 1983 to 1987, 14 captive-reared young Peregrines were released at a hack site in Lee Vining Canyon; 8 of these reached independence (Linthicum and Walton 1992).

From 1988 to 1992, at a tower in marshes at Crowley Lake, 22 additional young were hacked, at least 15 of which reached independence and dispersed in the area (Linthicum and Walton 1992). Although no Peregrines were known to be breeding at Crowley Lake, observations through the mid-1990s suggest they may have been breeding at more than one site in the eastern Sierra between Crowley and Mono lakes (B. Walton pers. comm.). During field work for the Glass Mountain Breeding Bird Atlas (1991–1996), the only sighting of a Peregrine, at North Landing of Crowley Lake on 20 July 1993, was of an adult carrying prey to cliffs in the Sierra between Convict and McGee canyons (P. J. Metropulos pers. comm.). Elsewhere in the eastern Sierra of Mono County, an eyrie with an active pair in 1991 near Grant Lake (CDFW 2019, CNDDB [wildlife.ca.gov/Data/CNDDB]) may have been at or close to the historical site near that lake.

Recent Status: Eastern Sierra

From 2005 to 2025 we have evidence for 14 Peregrine Falcon nest sites in the eastern Sierra, 11 spanning the length of Mono County and 3 from widely spaced locations in Inyo County (Figure 1).

Long Valley area. From the inception of recovery through the early 2000s, sightings of Peregrines in spring and summer in western Mono County were sporadic, with no confirmation of local nesting. Then, in 2005, a Peregrine nest was located south of Crowley Lake at about 1830 m (6000 ft) in the Owens River Gorge downstream of the Upper Gorge Power Plant (D. J. House in litt.). This nest produced young annually through at least 2010, but the subsequent status of this eyrie is unclear. Peregrines may have continued to nest somewhere in the Owens Gorge, as suggested by observations of one or two birds (including pairs) at various sites in the gorge from early June to late July 2017–2025 (eBird), plus repeated observations of falcons, sometimes harassing ravens, at about 1737 m in the Eldorado Roof area from 2022 to 2024 (C. Fellhoelter in litt.). Further support of recent nesting somewhere in the Owens Gorge includes observations of a male and female in courtship display flights above the historical eyrie (active 2005–2010) for about 20 minutes on the evening of 23 June 2025 (D. J. House in litt.). But no fresh whitewash at the eyrie, a lack of screaming young on 23 June, and no falcon activity on the morning of 26 June suggest this site was inactive in 2025. By contrast, observations of two adult Peregrines over Paradise on three occasions in late June to early July 2025, plus a Peregrine carrying food and heading due east from Paradise on 21 June (ibid.) suggests that in

2025 the birds may have nested in the gorge downstream from the historical eyrie. In this area, cliffs suitable for nesting are numerous.

Another suspected nest site was about 5 km to the west where on 10 May 2023 a pair of adults was flying back and forth and calling from the cliffs on Lower Rock Creek at about 1768 m (N. Livingston in litt., ebird.org/checklist/S137731750). Because of the proximity of this site to the nest site(s) in the upper Owens Gorge, it is unclear if two pairs are nesting in this region or if, from year to year, one pair has moved between alternative sites; in California, some alternative sites can be almost 10 km apart (Walton 1998). A specimen of a female from Rock Creek on 3 June 2004 (C. Kamler, LACM 113620), if it had been breeding, could have been associated with one of these sites. Annual observations of one or two adults, including courting pairs from April through June, 2019–2024, from lower Witcher Creek and Lower Rock Creek south to Paradise (D. J. House, K. Ferrell, eBird) suggest the Lower Rock Creek nest site may have been active during this entire period. In 2025, visits to the former suspected nesting site in Lower Rock Creek about every two weeks from April through June did not yield any sign of Peregrine nesting (K. Ferrell in litt.).

On 13 June 2020, at a nest near the top of a cliff at 2130 m (7000 ft) along Hot Creek, the adults called and circled with the female returning to the nest site (K. K. Campbell, photos; CDFW 2019, CNDDB [wildlife.ca.gov/Data/CNDDB]); one falcon was seen at Hot Creek on 24 June 2023 (C. Yusuf, ebird.org/checklist/S143417735). A survey around this site on 20 June 2025 found it inactive (Shuford pers. obs.), as no Peregrines or other indications of nesting were seen. The former nesting shelf was whitewashed but held a very large stick nest; the technical rock-climbing hardware permanently fixed to the cliff face seen in 2020 was still in place.

In the Clark Canyon drainage above the upper Owens River, ~2300 m (7550 ft) elevation, Peregrines have been reported via eBird since 6 July 2017 (L. Bobay), an agitated pair was on a rock formation on 2 May 2020 (S. Raub), and two adults and a juvenile were near crags suitable for nesting on 27 July 2021 (P. Lust, S. Simon). In 2023, nesting was confirmed on 16 June, by observations of a pair and three nestlings in an eyrie (S. Shunk et al.; ebird.org/checklist/S141748801), and on 8 July, post-fledgling, when two adults and two juveniles were flying around and screeching loudly (G. Mastick, ebird.org/checklist/S143906360). On 22 June 2024 the pair delivered prey to vocal young in this eyrie (E. Cox et al.). Nesting was documented at this site again on 26 June 2025 when E. Cox (in litt.) observed a pair of adults, two fledglings (male and female), and a flying bird of unknown age and sex. It is possible that the historical eyrie in the upper Owens River drainage 15 km north of Crowley Lake that was active until the early 1960s may have been located at or close to Clark Canyon.

Mono Basin. Observations compiled by the subregional editors for this area for *North American Birds* (Nelson, P. Metropulos) show that formerly sporadic summer sightings became fairly regular by 2012. Despite an increase in visits to Mono Lake's islands by gull researchers beginning in the mid-1970s and annual, extended visits beginning in the early 1980s that continued for decades (Winkler and Shuford 1988, Point Blue unpubl. data), the only summer observations of Peregrines during this period were of single

individuals on the Negit islets on 25 May 1998 (A. DeMartini in litt.) and 2 July 2007 (Nelson, A. Greiner pers. obs.). Then on 27 May 2016—exactly a century since the last reported attempt—a nest was found on the lake's islands. Although nesting was apparently unsuccessful in 2016, young fledged the next three years; over these four years, the falcons shifted nest sites among three distinct rocky islets in relatively close proximity (Nelson pers. obs.). Visits to the lake's islands diminished greatly starting in 2020, when biologists initiated drone surveys for nesting gulls, much less time-consuming than previous methods. On 15 June 2025, R. Carle and others (in litt.) surveyed for Peregrines by boat, cruising closely around all of the Negit islets and along the east and west sides of Negit Island, but failed to see any falcons.

Peregrines may also be nesting in Sierran canyons above Mono Lake. In early June 2014, Nelson repeatedly noted an adult capturing prey near Lundy Canyon and flying out of sight up into the Sierra, suggesting it was going to a nest at an unknown location. Further observations of recently fledged juveniles, some begging, around DeChambeau Creek (west of Hwy. 395) in July 2014 and 2015 may have come from an unknown eyrie, possibly in Lundy Canyon. The most recent record of a Peregrine from Lundy Canyon was of one bird on 29 June 2019 (A. Wilson, ebird.org/checklist/S57788223). Also, observations around rock outcrops at about 2350 m (7700 ft) above Lower Horse Meadow on 12 June 2023, including a pair of Peregrines persistently wailing, aggressively defending the area from passing ravens and vultures, and visiting a suspected eyrie on a ledge (male delivering prey) (A. Wilson in litt., ebird.org/checklist/S141379062), strongly suggest nesting at this site. Observations from the trail below the rock outcrops on 24 July 2024 of a pair and two juveniles circling together, and one of the adults dropping prey for the juveniles to catch (N. Livingston in litt.), suggest nesting in successive years. This site is close to Lee Vining Canyon, so it is unclear if the April to July records of one to three Peregrines there in 8 of 11 years from 2013 to 2023 (eBird) represent another nesting eyrie in that canyon or birds on foraging trips from the eyrie just to the south. On 25 March 2025, observations of nesting in Lee Vining Canyon began with two adults performing a "ledge display" and ended with an adult and two fledglings noted on 27 June 2025 (S. Miller in litt.).

Mammoth Lakes area. Observations from 14 to 24 June 2019—of a pair calling vigorously, carrying prey, visiting a potential nesting cliff, and vocalizations of begging young—indicated that Peregrines were nesting at 2652–2682 m (8700–8800 ft) elevation on Mammoth Rock above the town of Mammoth Lakes (Shuford pers. obs.; E. Pennington et al., ebird.org/checklist/S58182277; J. Callender, photos, ebird.org/checklist/S57668522). This eyrie may have been occupied in other years, as implied by observations of four noisily interacting Peregrines, including fledged young, from the Mammoth Rock Trail on 18 July 2020 (L. Chen, S. Toner, ebird.org/checklist/S71608565) and of one to three Peregrines along the Mammoth Rock Trail or further up Old Mammoth Rd. from late May to mid-July, 2018–2022 (eBird). On 21 June 2025, Shuford observed an adult male and a female (and possibly a third bird) gliding in blustery wind near Mammoth Rock. Right before, two people had ascended to the top of Mammoth Rock from the backside. If there had been an active nest, the falcons presumably

would have called repeatedly in response to the climbers. Since the birds were quiet, it is likely the falcons either had not nested there in 2025, or they had already fledged young and dispersed.

West Walker River drainage. On 20 June 2023, observations at a cliff band at about 2255 m (7400 ft) elevation north of Hwy. 108 and west-northwest of Pickel Meadow Wildlife Area (West) strongly suggested an active nesting territory. From the highway, E. Cox, F. Fabbro, and I. Woodard (in litt.) first heard fledglings being fed, then saw an adult and two fledglings flying around and perching on the cliffs. It is unclear if these cliffs held the nesting eyrie, but if the falcons had moved, after a winter of very heavy snowfall, the early-season observations suggest they likely had not moved very far. Biologists returning to this area for landbird surveys in 2024 did not observe Peregrines (E. Cox in litt.). Other sightings of Peregrines in the vicinity, which may have represented this nest, include one seen about 3.8 km further upslope on Hwy. 108 on 25 June 2021 (P. Lust), two about 6 km further downslope on a rock wall north of Hwy. 108 as seen from the Sonora Picnic Area on 14 July 2024 (K. Meadows), and one on 25 June 2022 at ponds 1 km west of Sonora Junction (R. Lawrence, all eBird).

In 2025, searches for Peregrines in the West Walker River drainage along Hwy. 108 by Shuford and E. Cox on 22 and 27 June, respectively, were unsuccessful. About 3 km south of the West Walker River Bridge, however, on 22 June S. Miller and R. Knapp saw a pair of adult Peregrines flying by at the meadow below Junction Reservoir then continuing north over a ridge and out of sight into the West Walker River drainage along Hwy. 108 (ebird.org/checklist/S253296892). This suggests an active nesting territory may be in this drainage.

Bridgeport area. On 22 June 2025, Shuford located an active nest near the junction of Hwy. 395 and the Bodie Rd. At the time, three young near fledging age were on the ledge of the nest site or moving in and out of the eyrie cavity; later that afternoon, S. Miller and R. Knapp (pers. comm.) detected two adults and saw two of the young.

Mono County: potential nesting sites. Observations of adults and juveniles in a family group foraging at River Spring Lakes in the Adobe Valley on 23 July 2021 (P. G. Johnson, photos; inaturalist.org/observations/88752100) imply possible nesting nearby in the Adobe Hills, Granite Mountain, Benton Range, or Glass Mountain area.

Other areas with Peregrine observations in Mono County in and around suitable nesting cliffs should be further explored for potential nesting activity. These include agricultural fields and wet meadows around Antelope Valley south of Topaz Lake, where single birds were seen between 23 May and 24 June over 6 years from 2017 to 2025 (eBird); potential nesting sites are in the Sierra to the west and perhaps on White Horse Mountain and in the Sweetwater Mountains to the east and south. An observation of two Peregrines vocalizing and flying across the cliffs at Centennial Bluff, elevation ~1615 m (5300 ft), west of Coleville on 28 July 2025 (B. McIver, ebird.org/checklist/S263504885), further suggests that the species may be nesting in the northern portion of the West Walker River drainage.

For the Bridgeport Reservoir/East Walker River area, 2011–2025, there

are 23 eBird records from May to July; cliffs suitable for nesting are along the East Walker and in the Sierra, Sweetwater Mountains, and Bodie Hills.

To the south, there are 11 late May to July records of one or two Peregrines in five years between 2014 and 2023 (eBird), in the Sierra from Bohler Canyon south through the June Lake Loop area, encompassing the area of historical breeding near Grant Lake. In the Benton–Hammil–Chalfant Valley and Fish Slough corridor in southeastern Mono County, there are six observations of one or two Peregrines from May to mid-July in four years from 2019 to 2024 (eBird); potential nesting sites are in the Benton Range to the west and White Mountains to the east.

White Mountains. On 21 June 2017, A. C. Clause noted an eyrie (1 adult, 2 nestlings heard) on a steep bedrock cliff in Black Canyon at 1770 m (5800 ft) in the southern White Mountains of Inyo County (CDFW 2019). About 25 years ago, C. and R. Howard (in litt.) saw a pair of Peregrines on a cliff on the east side of Black Canyon about 0.5 km above its junction with Marble Canyon, suggesting the species may have been nesting in this area for many years; they did not recall the exact time of year but noted a lack of snow, suggesting it was in late spring or summer. A visit to this site on 24 July 2025 failed to disclose any Peregrines (R. D. Kokx in litt.), but the falcons could have dispersed by this late in the nesting season.

Southern Sierra Nevada. Nesting has also been confirmed along the North Fork Lone Pine Creek at elevation 2775 m (9100 ft). After seeing an adult Peregrine perched near a large multi-tier nest under the overhang of a north-facing granite cliff in October 2018, R. D. Kokx (in litt., photos) returned on 22 July 2019 and saw two chicks in the nest; they made high-pitched begging calls as an adult flew in and fed them. This nest site was inactive on annual visits from 2020 to 2025. But on 17 July 2020, following a lead from a climbing guide, Kokx located another eyrie further to the west at about 2990 m (9800 ft) on a shelf on a south-facing granite dihedral. The adults, presumably the same ones from the other inactive nest nearby, were feeding two chicks approaching fledging age. This nest site was inactive on annual visits from 2021 to 2025. Following up on a climber's report of a pair of Peregrines seen on 12 July 2025 around the Candlelight Buttress at ~2740 m (9000 ft) just south of Whitney Portal, Kokx scanned the south side of that feature from a nearby trail the next day and saw one adult Peregrine. In this area, likely one pair rotates from year to year among several nest sites.

Also, in 2024, Peregrines may have nested at 2040 m (6700 ft) elevation at the base of the Sierra Nevada southwest of Bishop; in April and early May, C. Fellhoelter (in litt.) twice noted a pair at, or flying into, a guano-stained cavity south of the Buttermilk bouldering area. In 2025, his sole visit for an hour and a half on 21 April, yielding no observations of Peregrines, was insufficient to determine nesting status at that site.

Eastern Sierra region: 2025 summary. Of 11 specific nesting locations active sometime between 2005 and 2024, 6 were inactive in 2025 (Mono Islands, near Lower Horse Meadow, Hot Creek, Owens Gorge, Lower Rock Creek, North Fork Lone Pine Creek,). The inactivity of these locations was offset by reverification of nesting at one site (Clark Canyon), uncertain nesting status in four areas (near Pickel Meadow, Mammoth Rock, south of Buttermilks,

Black Canyon), and detection of nesting at three new sites (Hwy. 395 near Bodie Rd., Lee Vining Canyon, Granite Mountain area). Of the three new sites, nesting was verified at the former two and suspected at the latter one. Of the pairs from the six locations inactive in 2025, it is likely that some nested at alternative cliffs, including ones we did not detect in 2025.

Mojave Desert. In 2012, surveys by helicopter for the Golden Eagle (*Aquila chrysaetos*) in eastern California, covering all areas administered by the Bureau of Land Management, suggested that Peregrine Falcons had expanded their nesting range into the Mojave Desert. On the basis of the falcon's behavior toward the helicopter, B. Latta (*fide* C. G. Thelander) judged there were active nesting territories at three previously unsurveyed locations in southern Inyo County: Argus Range (adult flushed from walled canyon; probable nest), Panamint Range (adult flushed from rock outcrop, after young would have fledged), and Ibex Hills (adult Peregrine incubating in a stick nest built by a Golden Eagle). Latta made similar observations at three additional locations near and east of Barstow in the Mojave Desert of San Bernardino County.

An indication of nesting in the Amargosa River canyon near China Ranch in the Mojave Desert of southeastern Inyo County (CDFW 2019), is based on a report of a pair in suitable habitat there on 23 May 2015 (C. McCreedy, ebird.org/checklist/S23597962). There is, however, additional compelling evidence of nesting about 2.5 km further down the Armargosa drainage in San Bernardino County, where on 8 June 2023 F. English (ebird.org/checklist/S140897499) observed two adults on a shelf near a cliff top giving agitated calls. The close proximity of the two observations may reflect foraging birds moving up and down the canyon or a pair using alternative nest sites in different years.

A report of a pair copulating above cliffs in the Great Falls Basin of the Argus Range west of Valley Wells on 7 May 2025 (C. McCreedy, J. Tietz; ebird.org/checklist/S265507799) suggests another active territory.

Inyo County: potential nesting sites. As most May–July eBird records for Inyo County are from the floor of the Owens Valley, particularly around Bishop and Owens Lake, and to a lesser degree Death Valley and other lowland desert locations, specific areas worth exploring for potential nesting sites do not stand out in those data. The Sierra, White–Inyo Range, and some desert mountain ranges all have occasional breeding-season sightings of Peregrines away from known or suspected eyries. But because these areas are vast, rugged, and many portions are remote and difficult to access, overview surveys from fixed-wing aircraft to identity suitable nesting cliffs should be a first step, followed by surveys from the ground, or, as needed, by helicopter to identify new nesting sites.

Elevational Limits

Little has been published on the elevational limits of the Peregrine's nesting in California. Walton (1998) noted, however, that few nests have been located above 1370 m (4500 ft), presumably reflecting the distribution of prime nesting habitat and prey. During statewide surveys in 1975 and 1976, Thelander (1977) found nesting from sea level to 2700 m (8858 ft) and noted that several locations of suspected historical nesting were at elevations exceeding 3100 m (10,170 ft).

In the eastern Sierra, elevations of nesting tend to be much higher than elsewhere in California. Gaines (1992) specified the upper limit of nesting in the eastern Sierra of Mono County as 2590 m (8500 ft) but provided no specific elevations for any known eyries. In our study, elevations of verified or suspected nest sites ranged from about 1750 to 2990 m (5750–9800 ft). Given an eyrie at 3437 m (11,275 ft) in Rocky Mountain National Park in Colorado (R. R. Ramsey *fide* C. G. Thelander), further exploration may confirm nesting at higher elevations in the mountains of Mono and Inyo counties.

Population Influences and Concerns

Nearby Yosemite National Park, where the number of nests on annual surveys from 2009 to 2024 ranged from 8 to 17 (median = 14) and annual production of young ranged from 18 to 32 (median 24) (Walker et al. 2024), may serve as a model for managing nesting Peregrines in the Sierra Nevada region in general. This success is due, at least in part, to a flexible management strategy in which nesting Peregrines are safeguarded by adaptive rather than blanket closures of cliffs to rock climbers. The strategy entails a partnership between the National Park Service and the community of rock climbers (nps.gov/yose/planyourvisit/climbingclosureprocess.htm).

Regardless, the Peregrine's recovery and likely expansion of its breeding in both the western and eastern Sierra is further testament to its remarkable rebound rangewide. The species' adaptability is attested by current nesting in cities on large buildings and bridges.

Still, vigilance is needed, as circumstantial but compelling evidence suggests that highly pathogenic avian influenza (HPAI) may be an important cause of adults' high rate of mortality, decreases in territory occupancy, and population declines in many regions of North America, including California, since 2022, and in Europe, since 2016 (Gallagher 2024, Watts 2024, Caliendo et al. 2025). Greatest effects have been detected along coasts where Peregrines feed principally on migratory shorebirds and waterfowl, which have experienced high rates of mortality from HPAI. Hence this problem may be less acute in the interior of California, except perhaps in areas such as the base of the eastern Sierra where prey concentrate in spring at saline lakes and freshwater reservoirs. HPAI was first detected in Mono County in dead Mountain Lions (*Puma concolor*) in 2022, likely transmitted through the ingestion of infected waterfowl (wildlife.ca.gov/News/Archive/avian-influenza-detected-in-deceased-mountain-lions). A coordinated sampling of eyrie occupancy is planned for California and other western states beginning in 2026 (C. Thelander in litt., CaliforniaPeregrines.org), which should shed further light on HPAI's effects. Time will tell if the recent increase in Peregrine mortality from HPAI is a major long-term threat or just a minor short-term one.

Recommendations

Periodic surveys to track the Peregrine's status at all sites where it has nested in the eastern Sierra since 2005 would be valuable, as would searches for nesting at additional sites and efforts to determine if this population is being negatively affected by HPAI. Active nest sites in this region could be given

better protection through a program of adaptive closures to rock climbing, modeled after the one in Yosemite, via a partnership between federal and state agencies, nonprofit organizations, native tribes, and the climbing community.

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