THE NOMINATE SUBSPECIES OF THE PURPLE FINCH IN CALIFORNIA AND WESTERN NORTH AMERICA

CAMERON L. RUTT, School of Renewable Natural Resources, Louisiana State University, Baton Rouge, Louisiana 70803; crutt1@lsu.edu

PETER PYLE, The Institute for Bird Populations, P. O. Box 1346, Point Reyes Station, California 94956; ppyle@birdpop.org

PAUL W. COLLINS, Santa Barbara Museum of Natural History, 2559 Puesta Del Sol, Santa Barbara, California 93105; pcollins@sbnature2.org

MATTHEW L. BRADY, Museum of Natural Science, 119 Foster Hall, Louisiana State University, Baton Rouge, Louisiana 70803; mbrady3@tigers.lsu.edu

JAMES R. TIETZ, Point Blue Conservation Science, 3820 Cypress Drive, Suite 11, Petaluma, California 94954; jtietz@pointblue.org

JON L. DUNN, 24 Idaho St., Bishop, California 93514; cerwa@earthlink.net

ABSTRACT: The Purple Finch (Haemorhous purpureus) is most often recognized as comprising two distinct subspecies: purpureus, breeding and wintering through most of Canada and the eastern United States, and californicus, reported to be largely resident along the Pacific coast, from British Columbia to southern California. Although the migratory purpureus is the subspecies expected as a vagrant in Alaska and the interior West, the identity of the subspecies occurring in these regions has been poorly documented. Here we document the first records of purpureus for California and assess the subspecies of the Purple Finch from photographs and specimens throughout western North America. Nominate purpureus occurs regularly in the western Great Plains states and very sparsely farther west. H. p. californicus may be more prone to vagrancy than previously suspected, as we document the first records for Alaska, Colorado, and New Mexico.

The Purple Finch (Haemorhous purpureus) is most often recognized as comprising two subspecies (Wootton 1996, Pyle 1997). Nominate H. p. purpureus breeds across the boreal forest from southeastern Yukon Territory and northern British Columbia to Newfoundland and south through the northeastern United States and along the Appalachian Mountains to West Virginia (AOU 1957, 1998, Wootton 1996). In winter, purpureus is regularly found east of the Great Plains (approximately east of the 100th meridian). from southern Manitoba and Newfoundland south to central Texas, the coast of the Gulf of Mexico, and northern Florida (AOU 1957, Wootton 1996, AOU 1998, www.eBird.org). Along the Pacific coast, H. p. californicus is reported to be less migratory, although recovered banded birds have moved up to nearly 1500 km (Duvall 1945). It breeds primarily along the coast and in montane regions on the western slopes of the Cascades and the Sierra Nevada from west-central British Columbia to southern California, possibly northwestern Baja California, and migrates to lower elevations from much of this range, at times wintering to southeastern California and Arizona (Duvall 1945, AOU 1957, Wootton 1996, Patten et al. 2003, Sibley 2011). Although the breeding ranges of californicus and purpureus meet in an area bounded by the Coast and Rocky mountains in British Columbia, the frequency of contact and the extent of intergradation between these two subspecies is unknown (Sibley 2011). Three other described subspecies ap-

pear to be based on clinal variation and are not generally accepted, including two named from the West: *H. p. rubidus* (treated here as a synonym of *californicus*) and *H. p. taverneri* (treated here as a synonym of nominate *purpureus*) (Duvall 1945, Howell et al. 1968, Wootton 1996, Pyle 1997). Here we document the first records of the nominate subspecies of the Purple Finch in California and discuss its occurrence in western North America.

SUBSPECIFIC IDENTIFICATION

Criteria distinguishing the two subspecies in the field are covered in detail by Ridgway (1901), Duyall (1945), Phillips et al. (1964), Kaufman (1990) Pyle (1997), and Sibley (2011, 2014), but a number of the most important characters are worth reiterating. Females and first-cycle males, which are similar in plumage, are the most straightforward, with distinguishing features visible from all angles, whereas adult males require dorsal views. Overall, the female-like plumage of purpureus is more boldly patterned than that of californicus, with more contrasting and sharply defined dark streaking and paler or whiter background coloration. This includes a bolder and cleaner white face; white underparts with shorter, sparser, crisper dark streaking; browner (less olive) upperparts and secondaries; more distinct dark and light back streaking; white-tipped greater coverts; a paler rump; and usually unmarked undertail coverts (Pyle 1997, Sibley 2011, 2014). Adult males of purpureus differ from those of *californicus* more subtly, although many of the same upperpart features apply, most notably the more distinct dark and light back streaking; a paler, more contrasting rump; and pale-tipped greater coverts (Sibley 2011). Underpart and head-on differences are rather limited for adult males, but smudgy brown flank streaking is characteristic of californicus (Sibley 2011).

OCCURRENCE OF H. P. PURPUREUS IN CALIFORNIA

The first documented record for nominate *purpureus* in California is of an adult female collected on San Miguel Island, Santa Barbara Co., 11 May 1976 (Santa Barbara Museum of Natural History [SBMNH] 3506)—the only record of the Purple Finch for that island. In February 2009, Pyle confirmed the subspecific identification of SBMNH 3506 and compared it with 10 specimens each of adult female *purpureus* and of *californicus* at the U.S. National Museum of Natural History (USNM), Washington, D.C. (Table 1). Although all measurements of these subspecies overlap, relative tail length (wing minus tail) and wing formula (p9 – p6) are most useful for distinguishing them (Pyle 1997); SBMNH 3506 has a wing minus tail length that indicates *purpureus*, but it is intermediate in wing formula and shows a longer bill than most *purpureus*. Photographs of the specimen alongside both *purpureus* and *californicus*, however, clearly show it to match *purpureus* in plumage (Figure 1).

Since that specimen was collected, three other Purple Finches of the nominate subspecies have been recorded in California, two sight records and one documented with photographs. Dunn found the second *purpureus* for California, another in female plumage, which lingered 18–21 November 1987 at Furnace Creek Ranch, Inyo Co. (McCaskie 1988). Brady discovered

Table 1 Measurements (mm) by Subspecies of Females of the Purple Finch^a

	n	Wing chord	Tail	Wing – tail	Exposed culmen	Tarsus	p9 – p6
California specimen		81.5	55	26.5	11.5	17.7	1
H.p. purpureus	10	78.4-83.1	52.3-57.3	23.0-28.9	10.4-11.4	17.6-18.9	0.7 - 3.3
H.p. californicus	10	73.0-80.8	51.3-59.3	18.7-24.5	11.0-13.4	17.8-19.5	-5.6-2.4

^aRanges are based on 95% confidence intervals as estimated by means plus or minus two standard deviations from 20 specimens of females measured by Pyle and Collins at the Santa Barbara Museum of Natural History, Santa Barbara, California, and National Museum of Natural History, Washington D.C.

a female-type purpureus on Southeast Farallon Island, San Francisco Co., on 22 October 2007, in a season in which a remarkable five taxa of Carpodacus/Haemorhous (including the Common Rosefinch, C. erythrinus) reached the island (Singer and Terrill 2009). In both cases, these birds were identified to subspecies by the bold white supercilium, distinctly streaked underparts, and some fine white streaking to the upperparts; they were distinguished from Cassin's Finch (H. cassinii) by bill shape.

On 23 October 2013, Rutt and Luke Musher identified, photographed, and recorded a calling first-cycle *purpureus* on Southeast Farallon Island. The bird was found on a day on which very few other landbirds, and no other eastern vagrants, arrived. An incessant flight call first alerted us that the bird was not *californicus*: hard, hollow, mechanical, wooden "pik" calls instead of the lower, liquid, less sharp, and more blackbird-like "pit" call notes



Figure 1. Female Purple Finch specimens USNM 572739 (left; *purpureus*, Etna, New York, 29 April 1964), SBMNH 3506 (center; *purpureus*, San Miguel Island, California, 11 May 1976), and USNM 257248 (right; *californicus* Placerita Canyon, California, 23 April 1991), showing dorsal (A) and ventral (B) aspects.

Photos by Peter Pyle



Figure 2. First-cycle *purpureus* Purple Finch on Southeast Farallon Island, California, 23 October 2013. The bold and cleanly white face pattern; white underparts with short, sparse, and crisp streaking; white wingbars; and unstreaked white undertail coverts all help to distinguish this bird from *californicus*.

Photo by Cameron Rutt



Figure 3. First-cycle *californicus* Purple Finch in Ketchikan, Alaska, 30 December 2012. The bird's streaked white facial stripes, heavy streaking below that becomes long continuous flank streaking, streaked undertail coverts, olive-edged primaries, and a lack of white wingbars all help to distinguish it from *purpureus*.

Photo by Steve Heinl

of *californicus*. Additionally, it was verified visually by the aforementioned plumage criteria (Figure 2).

OCCURRENCE OF VAGRANT PURPLE FINCHES IN THE WEST

Outside of breeding ranges, Purple Finches are casual in interior western North America (AOU 1998), although the species' status varies on a state-by-state basis (Table 2). Although almost all individuals can, with good views, be identified to subspecies in the field (Sibley 2011), relatively few extralimital records have been reported to subspecies. The majority of vagrant Purple Finches are female-type birds, with most records in the fall, although sightings from the West also take place in winter and spring. We aged or attempted to age birds in photographs as first cycle or adult by using molt patterns and the condition of the wing coverts, outer primaries, and rectrices, following Pyle (1997).

It was difficult to pinpoint records of nominate *purpureus* in Oregon and Washington, where *californicus* is a common resident. Marshall et al. (2003) made no mention of *purpureus* for Oregon. In southeastern Oregon, outside of the normal distribution of *californicus*, Purple Finches have been recorded on at least six occasions (Littlefield 1991), with at least one record, a specimen of an adult male, representing *californicus* (USNM 478849), according to the specimen label and photographs of the specimen. At least three unconfirmed reports of *purpureus* exist for Oregon (D. Robinson, J. Gilligan pers. comm.), but we have not examined any documented records for the state. In Washington, one record of *purpureus*, from Conconully, Okanogan Co., on 19 February 2009, has been accepted by the Washington

Table 2 Status of Purple Finch Subspecies by State

	Dominant	Status/number of _	Percent presumed or number of records		
State	subspecies	Purple Finch records	californicus	purpureus	
Alaska	purpureus?	Rarea	8–9	8	
Washington	californicus	Resident	_	2	
Oregon	californicus	Resident	_	0	
California	californicus	Resident	_	4	
Idaho	purpureus	8	0	2	
Nevada	californicus	5	4	1	
Utah	unknown	1	??	??	
Arizona	californicus	Uncommon ^a	>90%	1	
Montana	purpureus	>100	0	>99%	
Wyoming	purpureus	12	0	>95%	
Colorado	purpureus	44	1	>95%	
New Mexico	purpureus	34	2	>75%	

 $^{^{\}mathrm{a}}$ Unknown number of records for states where Purple Finch is either not on the review list (Alaska) or was only recently reinstated (Arizona).

Bird Records Committee (M. Bartels pers. comm.), and an additional report by Charlie Wright from Bradley Lake, Pierce Co., on 20 November 2012 (eBird) bears written details sufficient for inclusion in this summary.

In Alaska, outside the breeding season, the species is a rare, irregular visitor in the southeastern portion of the state, (Gibson and Kessel 1992, Heinl and Piston 2009). Farther west, it is exceedingly rare in south-coastal (at least two individuals of *purpureus* photographed; A. Lang pers. comm.), central, western (at least two records), and northern Alaska (one record of purpureus) (Brinkley 2009, Figure 5; Gibson and Kessel 1992; Tobish 2009; T. Tobish pers. comm.). There are also four reports from St. Lawrence Island in the Bering Sea (P. E. Lehman pers. comm.). All photographs submitted to eBird (n = 5) (Figure 3) were taken in southeastern Alaska and represent californicus. In July 2014, Pyle compared the seven Alaska specimens at the University of Alaska Museum (UAM) with series at the Museum of Vertebrate Zoology, Berkeley, California (MVZ). Two adult specimens, a male (UAM 5002) and a female (UAM 5003), are californicus, while another adult male (UAM 5004) is possibly an intergrade tending toward californicus (Figure 4). All three birds were collected at Ketchikan on 6 March 1984. On this basis, we document californicus as a subspecies new to Alaska (Gibson and Kessel 1997; D. D. Gibson pers. comm.). Additionally, a first-cycle Purple Finch photographed on St. Lawrence Island on 7 September 2004 appears to be californicus (Figure 5; B. L. Sullivan pers. comm.). The remaining four Alaska specimens are all purpureus: three from southeastern Alaska and. notably, an adult male collected 5 June 1984 at Savoonga, St. Lawrence Island (Figure 4: UAM 5559). One of the other sightings there also pertains to purpureus, a bird photographed at Gambell on 22 October 2011 (Figure 6; P. E. Lehman pers. comm.).

In Idaho, eight Purple Finch records have been accepted by the Idaho Bird Records Committee (http://www.idahobirds.net/ibrc/reviewspecies/grosbeak_finch.html#pufi) from fall through spring, with most records from fall. Two of these, with photos linked via eBird, are of purpureus; the remaining six are of indeterminate subspecies. Similarly, there are four accepted records of the Purple Finch in Nevada. One from Reno (3 November 2012) represents purpureus, whereas the remaining three, all photographed along the western border of the state, represent californicus (Nevada Bird Records Committee, http://gbbo.org/nbrc/FullReportByTaxa.htm). A female-plumaged Purple Finch photographed by Richard Aracil at Miller's Rest Stop, Esmeralda Co., 18–19 September 2014 (eBird) is also californicus. To the east, Utah had no confirmed records (Behle et al. 1985) prior to 7 September 2007, when its lone accepted record from Lytle Ranch, Washington Co., was not confirmed to subspecies (Utah Bird Records Committee, http://www.utahbirds.org/RecCom/2007/2007_38Summary.htm).

The Purple Finch is an uncommon migrant and winter resident in Montana with over 100 sightings, primarily east of the continental divide (J. Marks unpubl. data). Two specimens in the University of Montana Zoological Museum and five photographs, from both sides of the continental divide, all suggest that these birds are primarily nominate *purpureus* (Figure 7). In Wyoming, the Purple Finch is considerably scarcer, although probably regular in the



Figure 4. Alaska Purple Finch specimens, all adult males in typical plumage. From left to right: UAM 5559 (purpureus), 5 June 1984, St. Lawrence Island; UAM 5825 (purpureus), 28 April 1991, Juneau; UAM 5004 (possibly an intergrade between purpureus and californicus, tending toward the latter), 6 March 1984, Ketchikan; UAM 5002 (californicus), 6 March 1984, Ketchikan. Specimens UAM 5002 and 5003, also collected 6 March 1984, represent the first documented records of californicus for Alaska.

Photo by Peter Pyle

northeast, where most of the state's 12 accepted records are located; none has been critically identified to subspecies (Faulkner 2010), but the pattern there and in Montana indicates these birds are very likely *purpureus*. In Colorado, the Purple Finch is occasional from fall through spring, chiefly in the eastern foothills of the Rocky Mountains and on the eastern plains (Andrews and Righter 1992, eBird). Forty-four records comprising 84 individuals have been accepted by the Colorado Bird Records Committee (D. Faulkner pers. comm.). Many of these occurred during a winter invasion in 2007–2008 (D. Faulkner pers. comm.), when as many as 29 birds were reported at once from the eastern plains (eBird). Significantly, among Colorado's many Purple Finch records, there is a single documented sighting of *californicus* from the southeastern corner of the state, the easternmost known record of that subspecies. This adult female was photographed in Lamar, Powers Co., on 7 December 2004 (Figure 8; T. Leukering pers. comm.). West of the Front Range, the species is accidental, with only two accepted records (Andrews



Figure 5. First-cycle *californicus* at Gambell, St. Lawrence Island, Alaska, 7 September 2004. Although this bird exhibits rather pale back streaking and whitish wingbars, features more commonly associated with *purpureus*, the olive tinge to the secondaries and, especially, the drab, dark face pattern, almost wholly lacking white in the supercilium and malar, indicate *californicus*.

Photo by Brian Sullivan



Figure 6. A rather ambiguous first-cycle Purple Finch at Gambell, Alaska, 22 October 2011, one of four Purple Finches recorded from St. Lawrence Island (two purpureus, one californicus, and one unidentified to subspecies). This one shows the white wingbars, sparse streaking below, and lack of olive tones throughout the upperparts characteristic of purpureus.

Photo by John Vanderpoel

and Righter 1992, eBird); photographs show both to be of *purpureus* (R. Hopper pers. comm.).

Conversely, in Arizona, records and specimens indicate that *californicus* predominates (Phillips et al. 1964, Monson and Phillips 1981); excepting one specimen, all Arizona Purple Finches are presumed to be this subspecies (Rosenberg et al. 1991). The single exception is a first-cycle female purpureus collected 6 January 1956 northeast of Tucson (Delaware Museum of Natural History 27492; Phillips et al. 1964, Monson and Phillips 1981. Rosenberg et al. 1991). Purple Finches are irregular fall and winter visitors primarily to southeastern Arizona (eBird), with most records during invasion years, which also bring unusual numbers of Lawrence's Goldfinches (Spinus lawrencei) to the state (Phillips et al. 1964, Rosenberg 1991). In New Mexico, the Purple Finch is rare and irregular from spring through fall, with 34 records, >75% from the Rio Grande valley eastward (S. O. Williams pers. comm.). Of the 11 photos and specimens we examined, at least eight were of purpureus; however, one of the photographed birds appears to represent californicus: an adult male from Glenwood, Catron Co. (western New Mexico), in March of 1991 (Figure 9). Additionally, one of the three specimens at the Museum of Southwestern Biology (MSB), Albuguergue, is californicus: an adult male (MSB 8487) collected 2 January 1958 near Silver City, Grant Co. (southwestern New Mexico).

CONCLUSION

Most records of vagrant Purple Finches in interior western North America, documented by either photograph or specimen, prove to be of *purpureus*, although *californicus* appears to be regular in neighboring states, just outside of its expected range, including extreme southeastern Alaska, western Nevada, and Arizona. Outside of these regions, we found evidence for four vagrants of *californicus*: at Gambell, St. Lawrence Island, Alaska; Lamar, Colorado; Glenwood, New Mexico; and Silver City, New Mexico. Thus *californicus* may be more prone to vagrancy than previously thought, and observers in interior western states should be aware of the possibility of additional records.

Elsewhere in the interior West and Alaska including, notably, St. Lawrence Island, the majority of available records identified to subspecies represent purpureus. Outside of the breeding range in western North America, purpureus is recorded most frequently in the western Great Plains states (Montana and Colorado), but it becomes sparser farther west, with 14 records from Idaho, Nevada, and Utah, and only seven among Arizona, Washington, Oregon, and California. Birders throughout the West should attempt subspecific identification when possible, including critical assessments of birds showing characters of purpureus within the range of californicus.

ACKNOWLEDGMENTS

We thank the following individuals for responding to our many queries, as well as for providing access to, or photographs of, specimens: David Sibley, Carla Cicero (Museum of Vertebrate Zoology), Shirley Sturts (Idaho), Craig Fosdick (Utah), Milt Moody (Utah),

Jeff Marks (Montana), John Carlson (Montana), Ed Harper (Montana), Paul Lehman (Alaska), Brian Sullivan (Alaska), Steve Heinl (Alaska), Aaron Lang (Alaska), Thede Tobish (Alaska), Daniel Gibson (Alaska), Jack Withrow (University of Alaska Museum), Matt Bartels (Washington), Steve Mlodinow (Washington), Dave Irons (Oregon), Doug Robinson (Oregon), Jeff Gilligan (Oregon), Sandy Williams (New Mexico), Andy Johnson (Museum of Southwestern Biology), Shawn Billerman (Wyoming), Andrea Orabona (Wyoming), Courtney Rudd (Wyoming), Rachel Hopper (Colorado), Tony Leukering (Colorado), Doug Faulkner (Colorado), David Vander Pluym (Arizona), Mark Stevenson (Arizona), Richard A. Erickson (Baja California), Jean Woods (Delaware Museum of Natural History), and Brian Schmidt (U. S. National Museum of Natural History). Finally, we are grateful to Kimball Garrett and Daniel Gibson for strengthening an earlier draft of the manuscript with their astute reviews. This is Point Blue contribution 2004.

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Figure 7. First-cycle *purpureus* Purple Finch at Fort Peck, Valley Co., Montana, 2 February 2008. In most of the interior West and on the western Great Plains, *purpureus* is the more likely subspecies.

Photo by John Carlson



Figure 8. Adult female *californicus* (right) in Lamar, Colorado, 7 December 2004, photographed alongside a Chipping Sparrow (*Spizella passerina*; left). The bird's overall gray-brown coloration, entirely lacking white, suggests *californicus*. This identification is confirmed by the heavily streaked drab face, thick, blurry flank streaking, dull wingbars, and a lack of white back streaking.

Photo by Tony Leukering



Figure 9. Outside of Arizona and southeast Alaska, vagrants of *californicus* are very rare. Adult male *californicus*, Glenwood, New Mexico, March 1991, representing, along with a specimen collected in Silver City, two of only three documented *californicus* east of Arizona. Distinguished from *purpureus* primarily by the lack of pale tipping to the greater coverts and perhaps by the suggestion of smudgy dark streaking on the lower flanks.

Photo by Sharon Nelson

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Accepted 17 September 2014