

TAXONOMY OF *PICOIDES PUBESCENS*
(DOWNY WOODPECKER)
FROM THE PACIFIC NORTHWEST
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ABSTRACT.—Three subspecies of *Picoides pubescens* (Downy Woodpecker) are currently recognized in the Pacific Northwest (Peters 1948; American Ornithologists' Union [A.O.U.] 1957; Short 1982; Winkler et al. 1995): *gairdnerii* Audubon, 1839 (type locality: no locality given = Fort Vancouver, WA.; but see beyond) from southwestern British Columbia to western Washington, Oregon, and Mendocino County in northwestern California; *turati* Malherbe, 1860 (near Monterey, CA.) from north-central Washington to central Oregon and north-central interior and humid coastal California; and *leucurus* Hartlaub, 1852 (Rocky Mountains) from the Kenai Peninsula, Alaska, to British Columbia east of the coastal mountains, eastern Washington and Oregon, northeastern California, Nevada, Arizona, and New Mexico, east to Montana, and Nebraska.

The subspecies *gairdnerii* has been characterized as darker below than other subspecies, with the wing coverts unspotted (Short 1982) or with the coverts mostly unspotted (Winkler et al. 1995). However, almost all birds from Vancouver Island, British Columbia, and many from the southern parts of the range of *gairdnerii* have white spots on the tertials and coverts. The presence of tertial spots on specimens from southern Vancouver Island is a character ascribed to *P. p. fumidus*, an unrecognized (A.O.U. 1890) subspecies proposed by Maynard (1889). Specimens of *gairdnerii*, compared with *turati*, are said to be larger (Winkler et al. 1995) and by as much as 5-8% (Short 1982); but the elements used for size comparisons by these authors was not indicated. However, the mean for wing chord of *gairdnerii* is about 5% longer than *turati* from most of California (Short 1971; Table 1). Aldrich (*in* Jewett et al. 1953:413) had already reported that *turati* from Washington is "larger than the average for that [= *turati* from California] form." Because some characters of some subspecies of *P. pubescens* differ from modern descriptions (Short 1982; Winkler et al. 1995), I review geographic variation in the northwestern populations and recharacterize them.

METHODS

I examined 430 adult specimens of *Picoides pubescens* from southern British Columbia, Washington, Oregon, and northern California (Fig. 1), and about 30 from the eastern United States, to determine variation in plumage color, pattern, and size. Birds were aged following George (1972). The size of the white spots on the tertials is maximum width of the spot and was measured perpendicular to the feather shaft. Measurements of males and females were pooled as sexes are monomorphic (James 1970; Short 1982), at least in wing chord and size of the largest tertial spot. Preliminary analysis of measurements reveal that variation in other characters (e.g., bill measurements, tail length) among populations is of little taxonomic importance. I compared specimens that were collected throughout the year because the amount of seasonal variation in size and color is minor, and because the species is a permanent resident (Gabrielson and Jewett 1940; Jewett et al. 1953; Campbell *et al.* 1990; Browning 1995a). Individual ventral feathers were examined for dirt and stain; specimens judged to be soiled were not included in color comparisons. Color comparisons were made using specimens collected in the same season when possible.

TABLE 1.
MEASUREMENTS (MM) OF WING CHORD AND TERTIAL SPOTS
OF ADULT MALE AND FEMALE DOWNY WOODPECKERS
FROM THE PACIFIC NORTHWEST, AND OF SPECIMENS
OF *P. P. LEUCURUS* AND NOMINATE *P. P. PUBESCENS*

Sample	Wing chord			Largest tertial spot			% with spots
	n	range	mean+SD	n	range	mean+SD	
Vancouver I.	37	92.2- 98.4	95.3+1.7	36	2.3-8.2	4.8+1.3	97
SW mainland BC	35	91.8- 99.2	94.9+1.9	30	3.6-8.1	4.8+1.1	89
western WA ¹	37	91.8- 99.5	95.1+1.8	25	1.4-6.2	4.0+1.4	85
Coastal OR ²	18	93.9- 99.7	96.0+1.7	6	1.6-5.1	4.0+1.3	33
Interior W OR ³	41	91.0- 99.8	95.3+2.0	28	2.8-5.9	4.2+0.9	68
CA ⁴	38	88.0- 94.6	91.1+1.8	27	2.0-5.5	4.4+0.9	73
Cascades, OR ⁵	11	94.1-100.8	98.0+2.2	6	1.6-4.8	4.5	55
Cascades, WA	14	93.6-100.9	95.9+2.2	11	3.1-7.3	5.4+0.8	79
Eastern WA/OR ⁶	16	91.8-100.4	97.2+2.8	16	3.6-8.0	5.0+1.4	100
Eastern U.S. ⁷	16	84.3- 95.7	89.4+3.4	16	4.8-7.7	6.4+0.8	100

¹ West of Cascade Mountains.

² West slope of Coast Range in Oregon and from Del Norte to northern Mendocino County, California.

³ East slope of Coast range to west of Cascades, excluding Jackson County.

⁴ Southern Mendocino County and Central Valley, California.

⁵ Oregon Cascades and Siskiyou and northern Shasta counties, California.

⁶ *Picoides p. leucurus*.

⁷ Nominate *pubescens*.

RESULTS

Plumage color. – The pale regions of the head (e.g., superciliary line, part of nape, lores, and line below the eye), the underparts and back, are darker and grayer in specimens from Vancouver Island, adjacent mainland British Columbia, and western Washington than in birds from elsewhere. The pale regions of specimens from western Oregon (excluding Jackson County) northwestern California are paler and less gray (more brownish) than in specimens from north of the Columbia River (western Washington and southwestern British Columbia). From a randomly mixed series of 40 specimens, I accurately sorted 95% of the specimens from western Washington and 82% of the paler specimens from western Oregon and northwestern California on the basis of ventral color alone. Specimens from Jackson County, Oregon, from California south of central Mendocino County, and from the east slope of the Cascades in Washington and Oregon are paler below than birds from elsewhere in western Oregon and northwestern California. Pacific Northwestern birds with the whitest pale regions are from east of the east slope of the Cascades.

White spots on the tertials. – White spots occurred on the tertials of all specimens of nominate *pubescens* and *leucurus* (Table 1). About 25% more birds from western British Columbia and Washington have tertial spots than do specimens from western Oregon. Fewer coastal Oregon birds are spotted and those that are spotted have fewer spots than those from elsewhere. The size of the largest tertial spot is individually variable for speci-

mens that are spotted, and mean size of the tertial spots in the northwestern populations is similar.

Wing chord. – There is a slight difference in wing chord from larger northern to smaller southern birds. Wing chord is smallest in nominate *pubescens* and in *turati* from California, excluding Siskiyou and Shasta counties. Mean wing chord from the Cascades of Washington and Oregon is large and the ranges barely overlap measurements of *turati* from California; 7.8% of the California birds are within the range of those from the Cascades and 26% of birds from the Cascades are within the range of California birds. Mean wing chord measurements for samples from west of the Cascades (western British Columbia to northwestern California) are similar to one another.

Based on the data in Table 1 and plumage color, populations from the Pacific Northwest may be divided into five groups, four of which are similar in size but differ in color, and one that is large:

1. Northern (Vancouver Island, mainland southwestern British Columbia and western Washington). Specimens range from very dark grayish to slightly paler and grayish below, with tertials spotted in more than 85% of the individuals. Wing chord is longer than birds from most of western California. Specimens are from sample areas 1, 2, and 3 of Fig. 1.
2. Southern (coastal and interior western Oregon, northwestern California). Specimens paler (less whitish) and browner below than northern birds, with tertial spots on 33% to 68% of the individuals (n = 59). Specimens are from sample areas 4 and 5 of Fig. 1.
3. Cascades (Washington, Oregon, and north-central California). Paler below than southern birds. Samples from Jackson County, Oregon, and Siskiyou and Shasta counties, California, are similar morphologically to birds from the Cascades. Similar to western California birds in ventral color but wings much longer. Specimens are from east of sample areas 3 and 5, and north of area 6 of Fig. 1.
4. Western California (coastal counties south of southern Mendocino County, and Central Valley). Specimens paler below and with shorter wings than other populations. Specimens are from sample area 6 of Fig. 1.
5. East of Cascades. Pale regions nearly white and white tertial spots found on all specimens examined. Specimens are from eastern Washington and Oregon.

The subspecific identification of birds from the east slope of the Cascades and north-central California as *turati* (sensu A.O.U. 1957) is problematical: although specimens from the east slope of the Cascades are similar in ventral color to *turati* from the remainder of California, they are similar in wing chord to *gairdnerii* from western Washington and Oregon. Birds from north-central California have been identified as intermediate between *gairdnerii* and *turati* but closest to the former by Fisher (1902), as *gairdnerii* by Ridgway (1914), intermediate but closer to *turati* by (Mailliard 1921), and as *turati* by Grinnell and Miller (1944) and A.O.U. (1957). Short (1982), following A.O.U. (1957) for the general range of *turati*, characterized the subspecies as paler and smaller than *gairdnerii*.

TAXONOMIC HISTORY, INCLUDING TYPE LOCALITY AND IDENTITY OF *PICUS GAIRDNERII* AUDUBON

Audubon (1839a) described *gairdnerii* as white below, "but much soiled and of a dull greyish-brown tint." Later he (Audubon 1839b) associated *gairdnerii* with the locality "Columbia River" (see below). From two birds from Washington and seven from Oregon, Baird (1858) characterized *gairdnerii* as smokey-brown below. Baird described

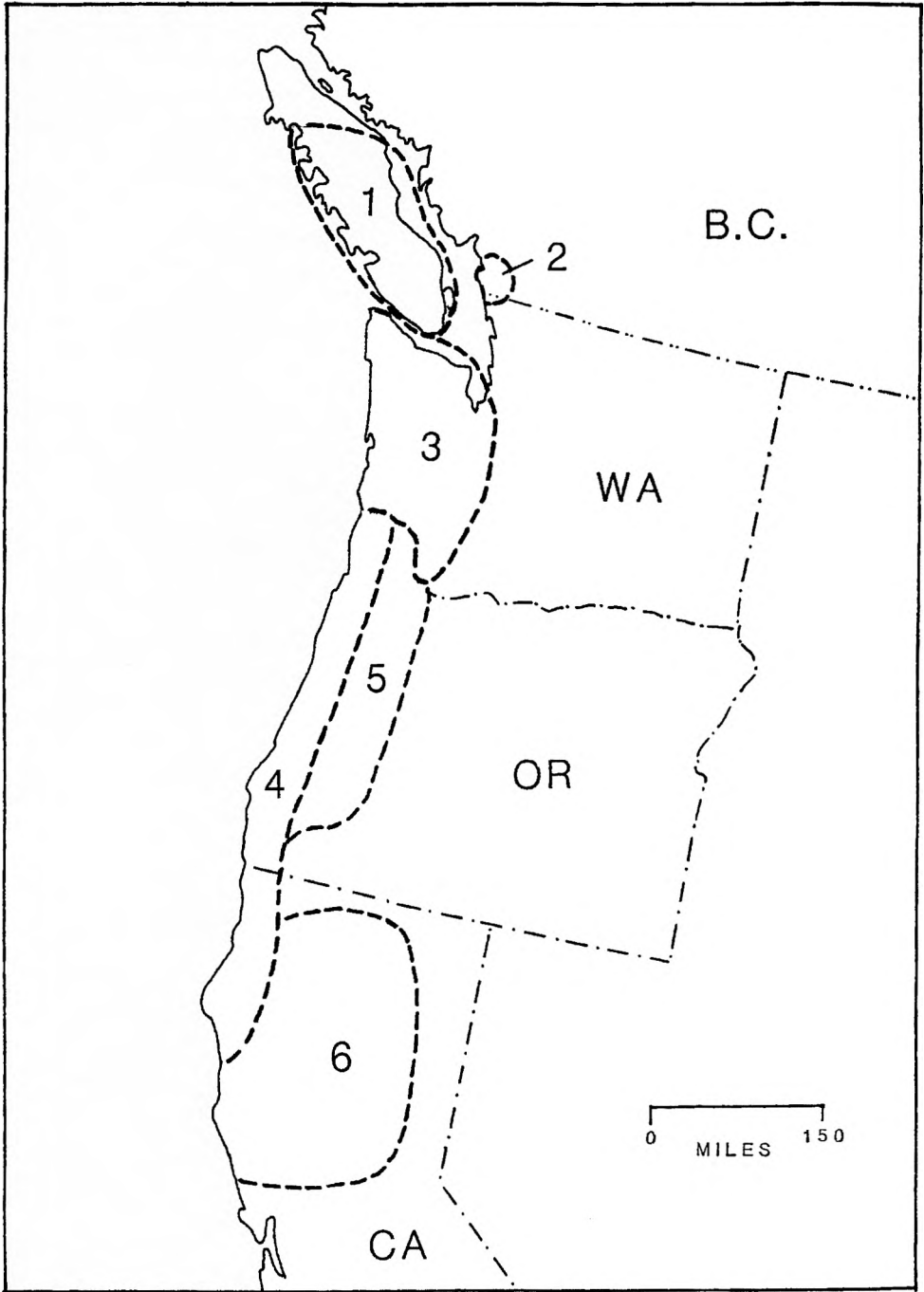


FIG. 1. Approximate boundaries of sample areas for specimens of *Picoides pubescens* from the Pacific Northwest: 1. Vancouver Island, British Columbia; 2. SW mainland B.C.; 3. Washington west of the Cascades; 4. coastal counties of Oregon and northwestern California; 5. Oregon west of the Cascades and east of the Coast Range; 6. southern Mendocino County and Central Valley, California. The Siskiyou Mountains are approximately north of 6 and the Cascade Mountains east and adjacent to regions 5 and 3.

the wing coverts and exposed tertials of *gairdnerii* as black or with one or two small spots, and commented that the spots are more conspicuous in birds from California to the eastern base of the Rocky Mountains than in birds from Washington and Oregon. Cassin (1863:202) believed that specimens of *turati*, a pale-bellied population from "California and the Rocky Mountains," were intermediate in ventral color between *gairdnerii* and "*Picus pubescens*." Coues (1874) synonymized *turati* with *gairdnerii*. The A.O.U. (1886), following Ridgway (1885), recognized *gairdnerii* as the subspecies from the western United States to the Rocky Mountains.

Batchelder (1889) restricted the range of *gairdnerii* to the coast regions from British Columbia to Oregon, and possibly Alaska, and proposed *oreoecus* for the white-bellied subspecies from the Rocky Mountains. Maynard (1889) proposed the name *fumidus* for birds from Vancouver Island, British Columbia. The A.O.U. (1890) and Hargitt (1890) synonymized *fumidus* with *gairdnerii* without providing reasons. The A.O.U. (1895) gave the range of *gairdnerii* as the Pacific states to British Columbia. For reasons of nomenclatural priority, the A.O.U. (1897) synonymized *oreoecus* (Rocky Mountains) with *homorus* Cabanis and Heine, 1863 ("California") and Fisher (1902) synonymized *homorus* with *leucurus*; the name *homorus* remained in general useage (e.g. Ridgway 1914; Cory 1919) until *leucurus* was used by Grinnell (1923) and A.O.U. (1931).

Birds from California were identified as either *gairdnerii* or as *homorus* (= *leucurus*) until Fisher (1902) recognized the subspecies *turati* from much of western California south of Medocino County, and from northern interior California where it interbreeds with *gairdnerii*. Fisher characterized *turati* as having the tertials almost always spotted with white, and as being smaller and paler below than *gairdnerii* from western Washington and Oregon. The A.O.U. (1903) and Ridgway (1914) recognized *turati*. The breeding range of *turati* was later extended to include south-central Oregon (Gabrielson 1931; A.O.U. 1931), and central Washington (Aldrich in Jewett et al. 1953; A.O.U. 1957). The range of *leucurus* was restricted to most of the Rocky Mountains by Burleigh (1961), who proposed the name *parvirostris* (Moscow, Latah Co., Idaho) for a population breeding east of the coastal mountains from southern British Columbia to Idaho. Short (1982) and Browning (1990) synonymized *parvirostris* with *leucurus*. Short (1982) and Winkler et al. (1995) restated the characters of the three northwestern subspecies. They also stated the limit of *turati* north of California as being inland Washington and Oregon; DeBenedictis' (1985) review of Short (1982) gave the northern limit of *turati* as eastern Washington and Oregon.

Audubon (1839a) did not provide a locality for *gairdnerii* but he (Audubon 1839b) later reported the Columbia River as the source of his specimen. He probably obtained the specimen from Nuttall (Hall 1933) or Townsend (1837). Townsend (1839a) had listed *Picus pubescens* from the Columbia River, and he (Townsend 1839b) later listed only *Picus gairdnerii* (he did not list *P. pubescens*) as among the species found during an expedition to the Pacific Northwest. Nuttall and Townsend were headquartered at Ft. Vancouver, Washington (Stone 1899), which may have led Ridgway (1914) to restrict the type locality of *gairdnerii* to near Ft. Vancouver. However, Nuttall and Townsend divided their time between Ft. Vancouver and Sauvie Island on the Oregon side of the Columbia River just northwest of Portland, Oregon, and explored the Willamette Valley and Astoria in Oregon, and the Columbia River from its mouth to east of the Cascades (Townsend 1839b; Jobanek and Marshall 1992). Some specimens they collected and labeled "Columbia River" are from what is now Oregon (Browning 1979; Jobanek 1986). The holotype of *gairdnerii* may have been collected by Meridith Gairdner, who was sometimes in company with Nuttall and Townsend, and for whom Audubon apparently named *gairdnerii*. Gairdner traveled up the Columbia River in Washington from Ft.

Vancouver to Ft. Walla Walla, and east to the Grande Rhone River in the extreme south-eastern part of the state (Harvey 1945). There is no firm evidence that the holotype of *gairdnerii* was from near Ft. Vancouver (contra Ridgway 1914). Considering the travels of possible collectors of Audubon's specimen, the holotype of *gairdnerii* could have been from east or west of the Cascades, or north or south of the Columbia River.

C. W. Richmond (1992) wrote that the holotype of *gairdnerii* may be in the Jameson collection. Robert Jameson was at the University of Edinburgh when he associated with Audubon and received specimens from Nuttall (Graustein 1967). Collections at Edinburgh, now in the National Museum of Scotland, do not include Audubon's holotype (Herman et al. 1990). Because the holotype of *gairdnerii* is missing, and because Audubon did not illustrate the bird, use of the name with a population rests on Audubon's (1839a) description.

Audubon (1839a) stated that *gairdnerii* "is so very similar to *Picus pubescens* [the name then used for northeastern populations of the species (see Brewster 1897)] in form, size, and colour, that one can scarcely distinguish it." He was apparently aware of variation in the ventral color of eastern populations because he (Audubon 1834) had characterized a male *Picus pubescens* as white below and a female as "brownish-white." Audubon's (1839a) original description of the underparts as dull greyish-brown could apply possibly to birds from either western Washington or western Oregon, or to specimens of *turati* from the east slope of the Cascades.

Audubon (1839a) wrote that the pale regions on the head and back of *gairdnerii* are white. These pale regions in birds from the Cascades are also white but are usually pale grayish or brownish in specimens west of the Cascades. Based on the color of the pale regions of the head and back, it is possible that that Audubon's specimen was an example of *turati*, and less likely that it was an example of a population west of the Cascades.

Audubon (1839a) characterized *gairdnerii* as having the wings (= primaries) barred with "squarish [white] spots," and said that "between this [*gairdnerii*] and *P. pubescens* there is no difference as to colour, only the spots on the wings of the latter are much larger." Audubon's (1839a) mention of white spots on the its wings may refer to his comment that "the coverts are also tipped with a white spot;" it seems unlikely that Audubon would have considered the spots on the primaries as a distinguishing character because I found that the size of spots on the primaries of specimens from the Pacific Northwest and those of nominate *pubescens* overlap (Table 1). The size of the white spots on the tertials and coverts do vary geographically. The mean width of the largest white spot on the tertials of specimens from the Pacific Northwest is smaller than the mean for spots of nominate *pubescens* (Table 1). However, specimens with spots smaller than the minimum width in nominate *pubescens* (4.8 mm) include 17% of *turati* from Washington and Oregon, 72% of the birds from western Washington, and 79% of those from western Oregon. Based on the the greater number of birds with small tertial spots, the type of *gairdnerii* possibly was from west of the Cascades and less likely from the east slope of the Cascades.

DISCUSSION

The clinal variation in size observed in eastern populations of *Picoides pubescens* (James 1970) cannot be demonstrated in western populations with the specimens examined. The existence of more geographic barriers in the western range of the species probably contributes to variation in size and color. The Columbia River appears to contribute to a step in the north to south cline of ventral color in birds west of the Cas-

cedes. The river is known to be a barrier limiting the ranges several species (e.g., *Melanerpes formicivorus* (Acorn Woodpecker) [A.O.U. 1983]; *Chamaea fasciata* (Wrentit) [Browning 1992]), and subspecies (e.g., *Psaltriparus minimus* (Bushtit) [Aldrich in Jewett et al. 1953; Phillips 1986]).

TAXONOMIC CONCLUSIONS

The restriction of the type locality of *gairdnerii* to near Ft. Vancouver, Washington, by Ridgway (1914) has no basis other than the fact that the possible collectors of the holotype were headquartered at Ft. Vancouver. Information unavailable to Ridgway (1914) on the activities of the possible collectors (Harvey 1945; Jobanek 1986; Jobanek and Marsall 1992) indicate that the holotype of *gairdnerii* could have easily been one of several localities. More importantly, the description of *gairdnerii* does not apply to the dark birds from western Washington, because Audubon (1839a) described the pale regions of the head and back as white rather than brownish or grayish-white. These pale regions are white in birds from the Cascades (*turati*) and in most specimens from western Oregon and northwestern California. Audubon's (1839a) description of *gairdnerii* could refer to birds from the Cascades in Oregon or Washington, but the possible collectors of *gairdnerii* spent less time in that region than in western Oregon. If the mention of white spots on the wings indeed refer to the coverts, the description of *gairdnerii* more likely refers to birds from western Oregon rather than those from the east slope of the Cascades. Further, nomenclatural stability is best served by using the name *gairdnerii* for populations west of the Cascades. I here restrict the type locality of *gairdnerii* to Portland, Oregon, and apply that name to the paler-bellied subspecies of western Oregon and northwestern California, because *fumidus* clearly refers to the northern dark-bellied subspecies.

Four subspecies should be recognized for populations of *P. pubescens* from British Columbia to California:

Picoides pubescens fumidus (Maynard, 1889) (southern Vancouver Island, British Columbia). – Underparts and pale regions on the head and back darker and grayer than other subspecies. Southern Vancouver Island and mainland southwestern British Columbia from Vancouver to Chilliwak (west of Cascade/Coastal mountains), and western Washington west of the Cascade Mountains to the Columbia River.

Picoides pubescens gairdnerii (Audubon, 1839) (Portland, Oregon). – Ventrally paler and browner than *fumidus* and darker than *turati*. Western Oregon west of the Cascades excluding Josephine and Jackson County (Rogue Valley region ?) to northwestern California from Del Norte to central Mendocino County.

Picoides pubescens turati (Malherbe, 1860) (Californie . . . non loin de Monterey = near Monterey, California). – Paler below than *gairdnerii*. Western California birds smaller than other northwestern birds. East slope of the Cascades of Washington and Oregon to Jackson and Josephine counties (west of Cascades), southern central Oregon, and in California from the Siskiyou and Cascade mountains and western part of the state from central Mendocino to San Diego County.

Picoides pubescens leucurus (Hartlaub, 1852) (Rocky Mountains). – Whitest below of all subspecies in the Pacific Northwest. Eastern British Columbia (Hope), eastern Washington and Oregon, northeastern California, eastward to Nebraska (see A.O.U. 1957).

As with most species, additional specimens from several localities are needed for studies of geographic variation (Winker et al. 1991; Browning 1995b). Determination of the range of *P. pubescens* in eastern Oregon (see Burleigh 1961), and study of variation in interior populations of *turati* is needed.

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