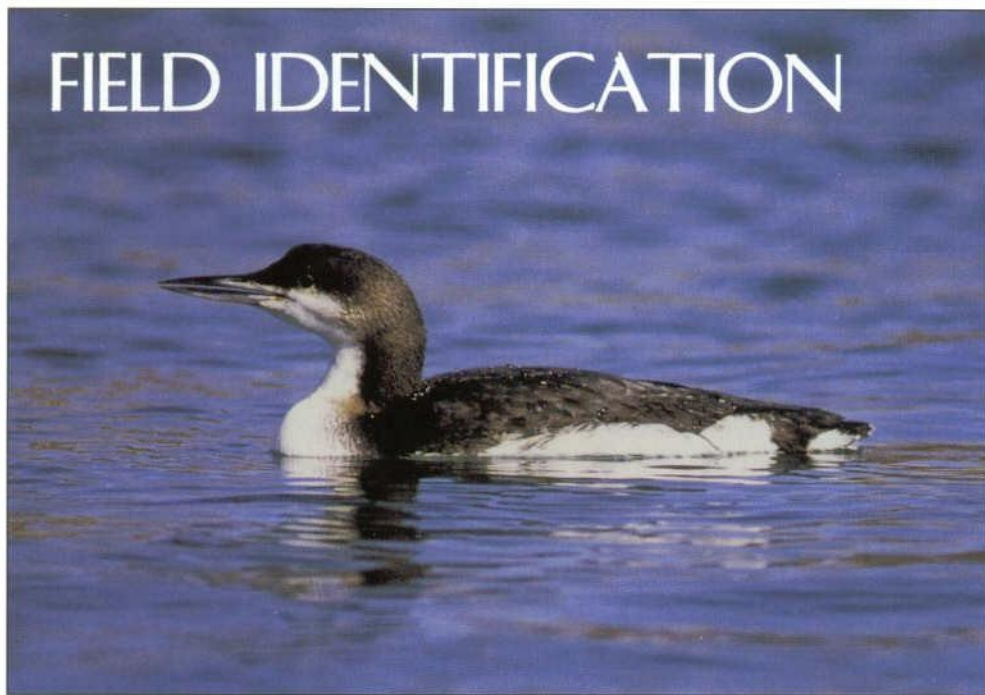


ARCTIC AND PACIFIC LOONS

FIELD IDENTIFICATION



HIROZO MAKI

ANDREW BIRCH*
and **CIN-TY LEE†**

MOST TAXONOMIC SPLITS result in an increase in the number of sightings of the rarer species (e.g., Yellow-green Vireo) or a renewed interest in the distributional patterns of former subspecies (e.g., the rosy-finches and Bullock's and Baltimore Orioles). But since the split of Arctic (*Gavia arctica*) and Pacific (*G. pacifica*) Loons in 1985 (AOU 1985), there have been only three confirmed records of Arctic Loons in North America outside of Alaska, all from California

(there is an additional possible late-fall record for Massachusetts; Evered 1985). This species is probably more frequent and widespread in North America than these records suggest, a result of its similarity to Pacific Loon and of Arctic Loon's poor treatment in field guides. Although several valuable papers have discussed different aspects of the Arctic/Pacific Loon identification problem, a comprehensive article has not been published in North America. To alert European birders to this problem, we summarized the findings of previous authors and presented new information resulting from our field observations in the United States and Europe and from our examination of study

skins at the Museum of Vertebrate Zoology at the University of California at Berkeley, the San Bernardino County Natural History Museum, and the Los Angeles County Natural History Museum (Birch and Lee 1995). Here we present much of the same information but have added new photographs and modified the text so as to present the material from a North American perspective. We urge readers to refer to the following papers that provided much of the foundation and inspiration for this article: Walsh (1984, 1988), Roberson (1989), Schulenberg (1989), McCaskie et al. (1990), Dunn and Rose (1992), and Reinking and Howell (1993).

Figure 1. On the basis of range, this adult, basic-plumaged Arctic Loon photographed in February in Japan is presumably *G. a. viridigularis*. Note the blocky head shape, uptilted posture, flaring of the white flanks, and lack of a chin-strap. This individual is unusual in that it has at least a partial vent-strap, a character more typical of Pacific Loons.



**Arctic Loon/
Black-throated Diver
(summer nominate)**



**Arctic Loon/Black-throated
Diver (adult winter)**



**Arctic Loon/
Black-throated Diver
(adult winter)**



**Arctic Loon/Black-throated Diver
(juvenal,
first winter)**



**Pacific Loon/Pacific Diver
(summer)**



**Pacific Loon/Pacific
Diver (adult winter)**



**Pacific Loon/Pacific Diver
(juvenal, first winter)**



**Pacific Loon/Pacific Diver
(adult winter; showing some
white along the water line)**



**Common Loon/Great Northern
Diver (adult winter)**



**Red-throated Loon/Red-throated
Diver (juvenal, first winter)**

Andrew Birch '96

Taxonomy

There are two subspecies of Arctic Loon: *G.a. arctica*, which breeds from northern Europe to western Siberia, and *G.a. viridigularis*, which breeds in eastern Siberia and locally in western Alaska (Cramp and Simmons 1977, AOU 1983, Walsh 1988, Sibley and Monroe 1990; Figures 1 and 2). The subspecies *viridigularis* averages larger and longer-billed than the nominate subspecies, and has the foreneck glossed with green (rather than purple) in alternate plumage. It is not considered a distinct species because intergradation occurs in eastern Asia (Sibley and Monroe 1990). The subspecies *viridigularis* winters in the western Pacific Ocean south to Taiwan; *arctica* (Figure 3) winters

primarily in the Baltic, Black, and eastern Mediterranean Seas (Cramp and Simmons 1977). All records of Arctic Loon along the Pacific Coast are presumably *viridigularis*. A loon observed 29 October 1984 at Plymouth Beach, Massachusetts, was believed by the observer to be an Arctic Loon (Evered 1985), but this observation did not conclusively allow identification to subspecies.

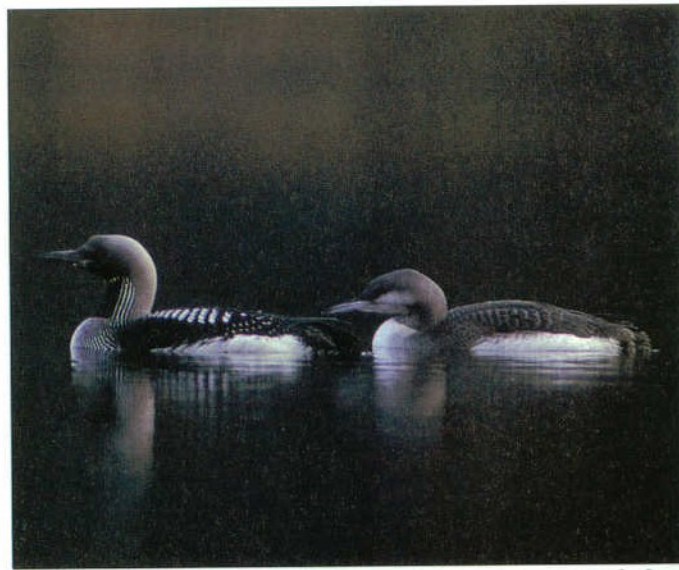
Pacific Loons and *viridigularis* Arctic Loons have been reported breeding sympatrically in eastern Siberia and western Alaska, sometimes even on the same pond (Bailey 1943, Stepanyan 1978, Kistchinski 1980, Portenko 1981, Douglas and Sowl 1993). Specimens suggesting intergradation between the two species have

been reported by Bailey (1943) and Storer (1978), but the overwhelming evidence supports full specific status. Pacific Loons winter primarily along the west coast of North America south to Baja California. They are very rare to casual migrants and winter visitors to the Atlantic coastal states and in the Midwest; they occur rarely but annually in the Gulf Coast region. Recently, sightings on large lakes and reservoirs in interior United States and Canada have increased, but this change in status is probably the result of increased birder coverage and ability to distinguish Pacific Loon from other loon species (see Appleby et al. 1986, Kaufman 1990). Compared to Common (*G. immer*), Yellow-billed (*G. adamsii*), and



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Figure 2. This Arctic Loon, photographed in May near Aichi, Japan, is almost fully molted into alternate plumage. The green-glossed throat, uptilted posture, blocky head shape, white sides and flanks, and broad white neck stripes are typical of Arctic Loon. There are four white neck stripes visible, and they are wider than the dark stripes. In Pacific Loon, these stripes are more numerous and thinner, resembling "pencil lines" (see cover photograph and Figures 4 and 5). Pacific Loons also typically show a paler nape contrasting with the remainder of the head and neck. This bird's bill appears larger than those of the Pacifics in Figures 4, 5, and 10.



MIKKO POLLÄNEN

Figure 3. This adult and juvenile Arctic Loon were photographed in late September in Finland, and thus are likely of the nominate race, *G. a. arctica*. Compare the adult's flank color, head shape, and neck striping to those of the Pacific Loons in Figures 4 and 5. This adult shows a paler nape than do most Arctic. The juvenile's whitish flanks and ear-coverts are easy to discern. The thin gray malar stripe is a character shown by many juvenile Arctic and Pacific.

Red-throated Loons (*G. stellata*), Pacific Loons along the Pacific coast are relatively more pelagic, uncommonly entering bays and inlets.

Structure

Pacific Loons are smaller and more delicate than Arctic Loons. Although there is considerable individual variation in the size of Arctic Loons (*viridigularis* being larger than *arctica*), the smaller size of Pacific Loon should always be detectable in direct comparison. In general, Arctic Loon approaches Common Loon in overall shape (Figure 1), whereas the daintiness of Pacific Loon is more comparable to that of the smaller Red-throated Loon. Nominate

Arctic Loons may approach the size of large Pacific Loons, so caution is warranted when viewing an apparent Arctic Loon, particularly on the East Coast of North America, where the nominate race might occur.

Bill. In the field, Arctic Loons show a larger and thicker bill than Pacific Loons (Figures 1, 2, 4, and 5). Measurements of specimens support this distinction; on Arctic Loons, the culmen averages 20 mm longer (c. 25 percent), and the bill base is consistently proportionately thicker than in Pacific Loons. The overall shape and impression of the bill, combined with the body size, may create a distinctive impression in the field, although McCaskie et al. (1990) concluded that the difference in

bill size was not particularly useful in the field for identifying Arctic Loon.

Head Shape. Arctic Loons tend to have a more angular “block-like” head shape, often with a distinct peak at the forehead, which gives them a flat-topped appearance (Figure 1). Pacific Loons, on the other hand, tends to have a smoother, rounder head (more rarely showing a forehead bump), which McCaskie et al. (1990) aptly described as appearing “puffy” (Cover Photo, Figures 4 and 5). Combined with the small bill, this gives Pacific Loon a more “gentle” appearance.

Neck. The necks of Arctic Loons are proportionately longer than those of Pacific Loons. In alternate plumage, Pacific Loon’s



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Figures 4 and 5. Pacific Loons in alternate plumage differ from Arctic Loons of both races in having narrower white neck stripes that are thinner than the dark stripes. In these Pacifics, the white stripes number six on the left bird (photographed in July 1993 at Prudhoe Bay, Alaska) and five on the right bird (photographed in June 1996 at Churchill, Manitoba). Pacifics average five to seven such stripes; Arctic average four to six. The foreneck patches on these Pacifics are purple-glossed. The napes are pale silvery-gray and contrast with the remainder of the neck. The relatively short and stocky neck and smoother, more rounded head of many Pacific Loons often give them a “puffy” or “cobra-like” appearance—a look shown by fewer, but some, Arctic.

shorter and stockier neck gives some individuals a more hunched or “cobra-like” appearance overall (Figure 5), although Appleby et al. (1986) used this term to describe Arctic Loons—at least the nominate race—as well.

Posture. Arctic Loons often hold their bills pointed upwards, slightly reminiscent of the way Yellow-billed and Red-throated Loons hold their bills (Figure 1). The proportionately longer neck seems to accentuate this uptilted posture. Pacific Loons tend to hold their bills horizontally, and this posture emphasizes their squat appearance. Of course, it is important to realize that posture alone is not sufficient for identification, as an individual may alter its appearance depending on how it is behaving (feeding, preening, or resting).



CIN-TY LEE



CIN-TY LEE

Figures 6 and 7. These specimens at the Museum of Vertebrate Zoology, University of California, Berkeley, depict differences in vent-straps between Pacific and Arctic Loons. At upper are Pacific Loons showing the complete dark vent-strap typical of many but not all individuals. At lower are Arctic Loons (*G. a. viridigularis*) showing the lack of a complete dark strap typical of that species in all plumages. The presence or absence of a vent-strap may be helpful in identifying flying birds.

Plumage Features: All Ages

Flanks. The best field mark in all plumages is the color pattern of the rear portion of the flank. Pacific Loons have entirely dark

flanks (Figures 4 and 5); they lack Arctic Loon’s conspicuous white rear flank patch. In the field, the flank patches on Arctic Loons appear as conspicuous posterior white patches that “flare” to a



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Figure 8. The vent-strap is visible on this Pacific Loon in flight. The distinct pale edges to the wing-coverts are characteristic of juvenal plumage. Also note the dusky auriculars. Photographed in January 1990 at Moss Landing, California.



greater extent above the waterline than in Pacific Loons (Figures 1–3; for flight photographs, see Dunn and Rose 1992). The lack of white flank patches in Pacific Loons results in a straight boundary between the dark sides and white undersides. Pacific Loons can show obvious white above the waterline if they are swimming “high” or partly rolling over as if to preen, but they never show the shape and extent of white that Arctics display (Dunn and Rose 1992). The key is to note whether the white on the flanks extends up to the sides of the rump, indicating an Arctic Loon.

Undertail Coverts and “Vent-Strap.” All Pacific Loons show a black or brownish-gray “strap” across the vent, whereas the same region on Arctic Loons is mostly white (Figures 6–8). The vent-

strap on Pacific Loons is almost always complete. Reinking and Howell (1993) reported that 90 percent of the specimens of Pacific Loons which they examined showed a complete vent-strap; Roberson (1989) noted that all Pacifics showed at least an incomplete vent-strap. Our own examination of Arctic Loon specimens revealed no complete vent-straps on any individuals. In those that displayed a partial vent-strap, they were all less extensive than on the most poorly marked Pacific Loon. (Note, however, that Jonsson (1992, p. 38) depicts Arctic Loon [Black-throated Diver] as having a distinct vent-strap.) Although the vent-strap is not easy to observe in the field, it can often be seen on preening or flying birds. The effect of this strap on Pacific Loons is to make

the undertail coverts appear darker when viewed from the side.

ALTERNATE PLUMAGE

Foreneck Patch. *G.a. viridigularis* has a green-glossed foreneck patch (Figure 2), whereas *G.a. arctica* and *G. pacifica* both usually have purple-glossed foreneck patches, although a small percentage of Pacific Loons may show a green gloss. This coloration, however, is actually very difficult to see in the field; in most birds of all forms, the foreneck simply appears black unless it is viewed under absolutely ideal light conditions.

Nape. As early as 1943, Bailey noted that Pacific Loons have very pale ash-gray or silvery-gray napes that contrast with the remainder of the neck, which is dark gray (Cover Photo, Figures 4 and 5), whereas Arctic Loons show comparatively uniform nape and neck colors (Figures 2 and 9). On specimens, we found that the base of each nape feather of Pacific Loon is white, and thus if considerable wear occurs, the nape may appear even paler. Because the bases of the nape feathers of Arctic Loon are gray, the nape should be darker than in Pacific Loon.

Neck Stripes. The white neck stripes on Arctic Loons are noticeably thicker than those on Pacific Loons (McCaskie et al. 1990; Figures 2–5); our study of specimens revealed that they are about 25 percent thicker. In Pacific Loon, the overall impression is that the bird’s white neck stripes are thinner than its black stripes, and they often appear disrupted and splayed. On Arctic Loon, the much wider white stripes can appear as thick as the black stripes,



LASSE LAINE

Figure 9. These three Arctic Loons, presumably *viridigularis*, in alternate plumage, all show white flank patches of varying sizes and an even gray head lacking the distinct pale nape shown by Pacific Loons. Also note how the pale neck stripes form a distinct, contrasting pale patch on the side of the neck. Photographed in June 1991 at the Kolyma River delta in Siberia.

and they are unbroken. Effectively, Arctic Loons show white "stripes" and Pacific Loons show white "pencil-lines." The white stripes in Arctic Loons are more contrasty and are often visible even at a distance (Figure 9), whereas those of Pacific Loons are less obvious.

This effect is accentuated by the darker nape of Arctic Loons, which highlights the white stripes. Additionally, Pacific Loons typically have five to seven white neck stripes whereas Arctics normally show four to six.

Chin Stripes. The white chin stripes on Pacific Loon are usually less conspicuous than those of Arctic Loon, but there is too much individual variation in both the brightness and the thickness of these stripes in both species for

this character to be of great use; it occasionally may be helpful as a supporting field mark, however.

BASIC AND JUVENAL PLUMAGES

Separation of Arctic and Pacific Loons in basic and juvenal plumages is possible using a combination of the structural and postural characters described above and the plumage characters discussed here (particularly flank color, as mentioned earlier). It is important, however, to age the bird in question, because certain plumage features vary with age. In both species, juveniles are distinctly paler than adults. The scapular feathers on juveniles have pale edges, which give the upperparts a scaly appearance. Adults, on the

other hand, have uniformly dark upperparts without pale feather edgings. Juveniles also have paler and more diffuse neck and facial patterns than do adults.

Basic Plumage

Chin-strap. On adults in basic plumage, a well-defined dusky chin-strap is diagnostic of Pacific Loon (Figure 10). Some Arctic Loons may show a slight dusky chin-strap (or an impression of one), but it is never an obvious, well-defined feature as it normally is in Pacific Loons. The absence of a chin-strap, however, does not necessarily denote an Arctic Loon, because a small percentage of Pacific Loons, particularly juveniles, can have very faint, inconspicuous chin-straps (Schulenberg 1989).



RICHARD R. HANSEN

Figure 10. This Pacific Loon is in molt from basic to alternate plumage. The flanks are dark. There is a very distinct chin-strap and a three-toned effect to the neck. Compare the size and shape of this bird's bill with those of the Arctics and other loon species. Photographed in March 1995 near Morro Bay, California.



SHINJI KOYAMA

Figure 11. Note the blocky head shape, uptilted posture, and lack of chin-strap of this Arctic Loon, presumably *viridugularis*, molting from Basic 1 to Alternate 1, photographed in April near Kyoto, Japan. The clean white face is typical of the species; juvenile Pacific Loons usually show a dusky, dirtier auricular. This individual is swimming low in the water, thus hiding its conspicuous white flank patch.

Nape. Pacific Loons may show a paler nape than Arctic Loons which contrasts with the remainder of the head and neck. On some individuals, the nape may become so pale that the diffuse dark vertical stripe on the side of the neck becomes very obvious. This feature is not as prominent on Arctic Loons. Note, however, that juveniles of both species average paler napes than adults, and that lighting conditions and plumage wear are other important factors to consider.

Head. Arctic Loons have cleaner, more defined facial and neck patterns than do Pacifics, which have a duskier and more diffusely patterned head and neck (Figures 11–13). On Pacific Loons, the side of the head, particularly in the re-

gion of the auriculars, is grayish-brown and often appears slightly blotchy (Figure 8). Sometimes (but mostly in juveniles), Pacific and Arctic Loons exhibit a thin gray malar stripe (Figure 3), which might be described as a continuation of the dark neck stripe. On Arctic Loons, the region of the ear-coverts is typically white (Figure 11), although it may occasionally show a pale gray wash. One diagnostic feature to note is the extent of gray or black beneath the eye-line as it extends behind the eye. On Pacific Loons, the dark crown feathering extends below the level of the eye. On Arctic Loons, this line is typically even with the eye and is more sharply demarcated from the white cheek and throat. The dark of the hindneck arcs

smoothly to a point-like “side-burn” on the lower cheek. On Pacific Loons, this feature often is less prominent because it can be obscured by the dusky auriculars and chin-strap. Thus, overall, Arctic Loons appear “clean-faced” and Pacific Loons appear “dirty-faced”. The chin-strap on Pacific Loons may accentuate this appearance.

Juvenal Plumage

Head and Neck. The head and neck patterns of juveniles of both species, although still reminiscent of the respective winter adults, are paler and less sharply defined. Thus, even juvenile Arctic Loons can appear somewhat “dirty-faced,” although the pronounced line of demarcation (i.e., the eye-



ROB CURTIS



ROB CURTIS

Figures 12 and 13. Two views of an Arctic Loon (presumably *G. a. viridigularis*), present at Bodega Bay, California, during May 1995, which established the third confirmed record for the state and for the ABA Area outside of Alaska. This individual is in Basic I plumage, in which juvenal feathering may be retained. The bird shows many of the characters typical of Arctic versus Pacific Loons: angular, block-like head shape; bill held pointed upwards (reminiscent of Yellow-billed and Red-throated Loons); lack of a chin strap; face pattern that is cleaner, with a pronounced line of demarcation between dark and light; and, especially, a distinct white patch on the rear portion of the flank. This worn individual shows a pale nape; although most Arctics show a comparatively uniform nape and neck color compared to Pacifics, some birds show paling in this area, so caution is warranted. Photographed on 14 May.

arctic and pacific loons

line as it extends behind the eye) should still be a good feature. Many juvenile Pacific Loons show a thin gray malar stripe, or at least some discoloration in this area. Often the whole face may have a gray wash. In juvenile Arctic Loon, the extent of the gray wash below the eye-line is more extensive than in winter adults, but it is still not as extensive as in adult or juvenile Pacific Loon (Figure 3). There is a variable dark vertical stripe up the side of the neck in both species (Figures 14–16).

Chin-strap. Juvenile Pacific Loons often have an inconspicuous chin-strap or none at all (Figures 14–16). Reinking and Howell (1993) found that just over half of the specimens that they examined had indistinct or distinct chin-straps (see also Schulenberg 1989).

Thus, the absence of a chin-strap may not indicate an Arctic Loon. One should rely upon head pattern and the presence or absence of white flanks or a dark vent-strap.

Further Work

This summary shows that field identification of Pacific and Arctic Loons is possible given good, prolonged views. Ultimately, with this identification knowledge, we may gain a better understanding of the status of Arctic Loon in North America. In particular, much work is needed along the East Coast, where the status of even Pacific Loon is somewhat uncertain. Many sightings there of Pacifics are undocumented, and some have proven to be small Common Loons or juvenile Red-throated Loons. Caution is always

warranted when reporting any Arctic Loon in the ABA Area away from western Alaska. More field observation and specimen examination is needed to assess the plumage and size variation between the two subspecies of Arctic Loon.

Acknowledgments

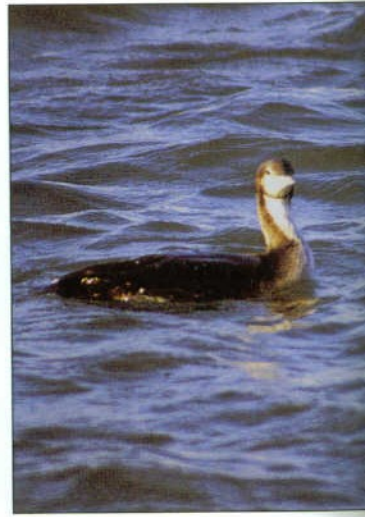
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ARTHUR MORRIS/VIREO



ARTHUR MORRIS/BIRDS AS ART

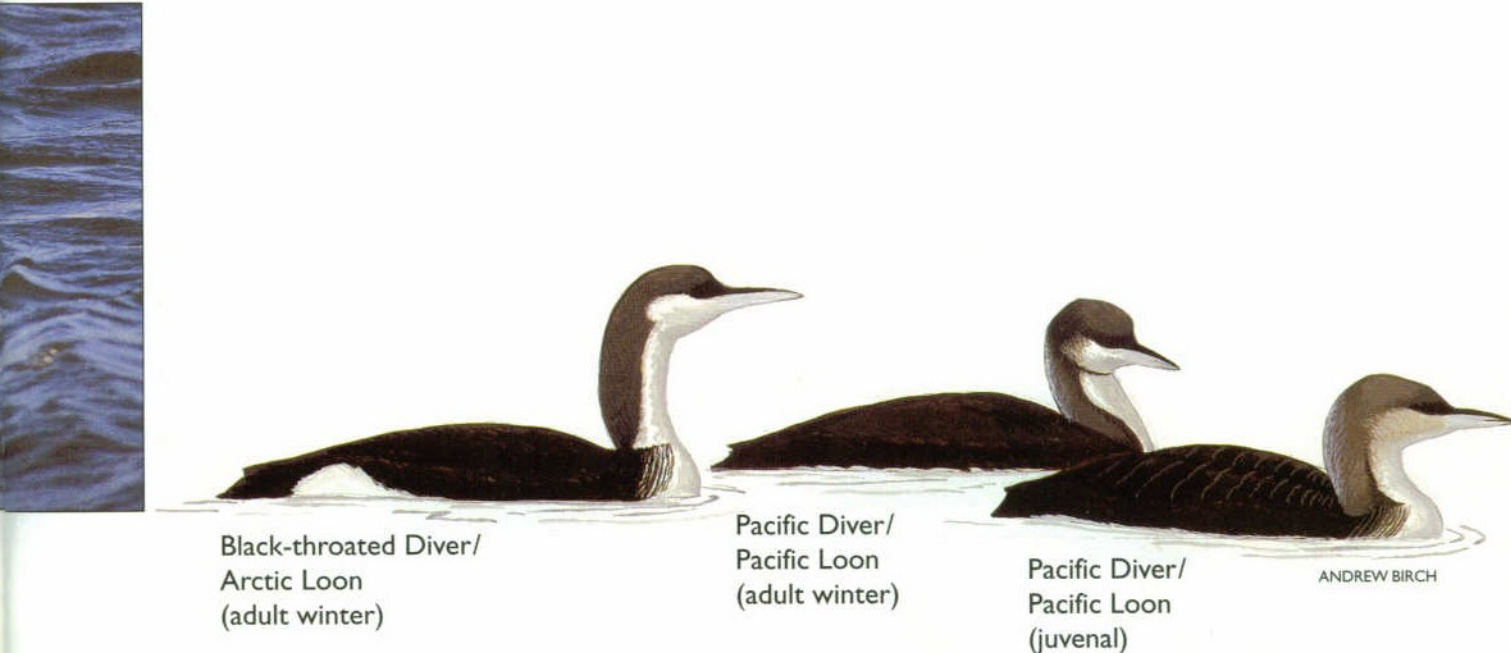


GREG W. LASLEY

Figures 14 through 16. Three Pacific Loons in nonbreeding plumage. All birds show dark flanks. Figures 14 and 15 are of juveniles (note the distinct pale scalloping on the back and scapulars) photographed at Bolsa Chica, California, January 1996; Figure 16 was made on 16 December 1989 at Texas City, Texas. These individuals show a variable amount of dusky to the auricular region and a somewhat less contrasty facial pattern than do most Arctic. The bird in Figure 14 lacks an apparent chin-strap; that in Figure 15 has a weak but noticeable strap; and the individual in Figure 16 shows a bold strap. One character that helps to separate Pacific and Arctic Loons from Common and Red-throated Loons is the presence of a dark streak of variable width and boldness running down the center of the neck, dividing the paler hindneck from the white foreneck and forming a "three-toned" neck. The variability of this character is evident in these three photographs.

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Black-throated Diver/
Arctic Loon
(adult winter)

Pacific Diver/
Pacific Loon
(adult winter)

Pacific Diver/
Pacific Loon
(juvenal)

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