Subspecific Identification of the Willet

Catoptrophorus semipalmatus

Fig. 1. Eastern and Western Willets. Can you tell which is which? Answer at bottom of p. 46. *North Carolina; late July 1995. © Michael O'Brien.*

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The Willet is a familiar shorebird to many birders around temperate regions of North, Central, and South America. Its large size, drab plumage, and flashy wing pattern make it relatively straightforward to identify. A more difficult and interesting endeavor is distinguishing between the two subspecies, "Eastern Willet" (*C. s. semipalmatus*) and "Western Willet" (*C. s. inornatus*). Morphologically and ecologically, these two populations are distinct and meet most criteria for separate species.

Fig. 2. Molting adult Eastern (left) and Western (right) Willets. When Eastern Willets first arrive along the Gulf Coast in March, they often retain extensive non-breeding (unpatterned) plumage. Full breeding plumage is usually acquired during April. Note the Eastern's slimmer body, darker, browner overall coloration, and heavier, paler-based bill. Note also that although both populations show a buffy ground color to the breast, that of the Western contrasts with its more neutral gray upperparts. Gulf Coast Eastern Willets average subtly larger, longer-billed, and paler than Atlantic Coast breeders; thus, size, bill length, and color differences are sometimes less obvious there. *Texas; late March 2004. © Michael O'Brien.*

Eastern Willet is a common and conspicuous breeder in salt marshes and mangroves along the Atlantic and Gulf Coasts from Newfoundland to Tamaulipas. Isolated populations also nest in the Bahamas, Greater Antilles, Cayman Islands, and the island of Los Roques off the coast of Venezuela. Breeding birds forage primarily in salt marsh pools, tidal creeks and flats, beaches, and oyster beds. Due to identification difficulties, wintering areas are still poorly known, but most Eastern Willets apparently winter in coastal eastern South America, particularly in Brazil (Morrison and Ross 1989, Sick 1993). Some may also winter as far south as Paraguay and Argentina, and as far north as the West Indies and Central America. Eastern Willet is undocumented in the United States in winter. Spring migrants first arrive along the northern Gulf Coast in early March (K. Karlson, personal communication) and along the Atlantic Coast in early April. Fall migrants depart very early, with peak departure of adults in early–mid July and most gone by early August. Juveniles depart by late July or early August, with a few lingering into September (rarely later).

Unlike its salt marsh relative, Western Willet breeds in interior prairies from southern Alberta and Manitoba to northern California and Colorado. Breeders and interior migrants forage primarily in wet pastures, in fresh marshes, and on lake shores. Western Willet winters in coastal areas from Washington and New Jersey south to Peru, the West Indies, and northern South America. Coastal migrants and wintering birds prefer rocky coastlines, sod banks, tidal flats, beaches, and shallow bays, where they often associate with Marbled Godwits. They seldom use the mucky tidal creeks frequented by Eastern Willet. Spring migrants depart from coastal wintering areas mostly from mid-April to early May, although a few non-breeders remain on the coast through the summer. Fall migrants return to the coast as early as mid- to late June and are numerous there by early to mid-July. Juveniles arrive along the coast by mid- to late July and are numerous there by August.

Morrison et al. (2001) estimate the total population of Willets at 250,000, with about 160,000 from Pacific and Interior flyways where only Westerns occur. The remaining 90,000 are from the Atlantic Coast and other regions,

Fig. 3 (opposite page). Typical silhouettes of Eastern (right) and Western (left) Willets while relaxed, walking, and standing alert. Size is always a good starting point with Willet subspecies identification. Westerns average about 10% larger than Easterns (Sibley 2000) and are about equal in size to Hudsonian Godwit. Easterns rarely appear godwit-sized but instead are closer to the size of a large Greater Yellowlegs. However, both subspecies show much size variation, with females larger than males. This variation is particularly pronounced in Western, some males of which overlap with Eastern in size. Regardless of this overlap, typically small male Easterns and typically large female Westerns are very distinctive.

Structure is often the most reliable means of identification, although a few birds look intermediate. In overall silhouette, Westerns look somewhat more elegant and godwit-like than Easterns, with longer legs and necks, and longer, slimmer, finer-tipped bills (although a few are heavier-billed). Western's stride is long, and the gait is almost awkwardly stiff-legged. The body is slightly more elongated, with a more graceful curve to the back and a relatively wider girth at mid-body. When relaxed, the body often takes on a very rounded look. Because the neck is longer than Eastern's, when drawn in, there is an almost heron-like bulge more obvious in active poses. The angle from the bill to the forehead is usually steeper, and the crown is sometimes distinctively tall or puffy.

Eastern looks subtly more compact, shorter-legged, shorter-necked, and shorter-bodied. Its stride is shorter and its gait quicker and more fluid than Western's. The body is slimmer than Western's and takes on more of a long oval shape when relaxed. When standing alert, the body often assumes a more-vertical stance and the back is often strikingly flat from the shoulders to the wing tips. The relatively short neck does not form much of a bulge when drawn in. The bill is variable in shape but is usually shorter and stouter than Western's, with a heavier tip and often a slight droop or a more pronounced gonydeal angle. Some birds, however, overlap with Western in bill thickness. The angle from the bill to the forehead is usually shallower on Eastern, and the crown is not very tall, emphasizing the heavier bill. *Pen-and-ink on paper by © Michael O'Brien.*

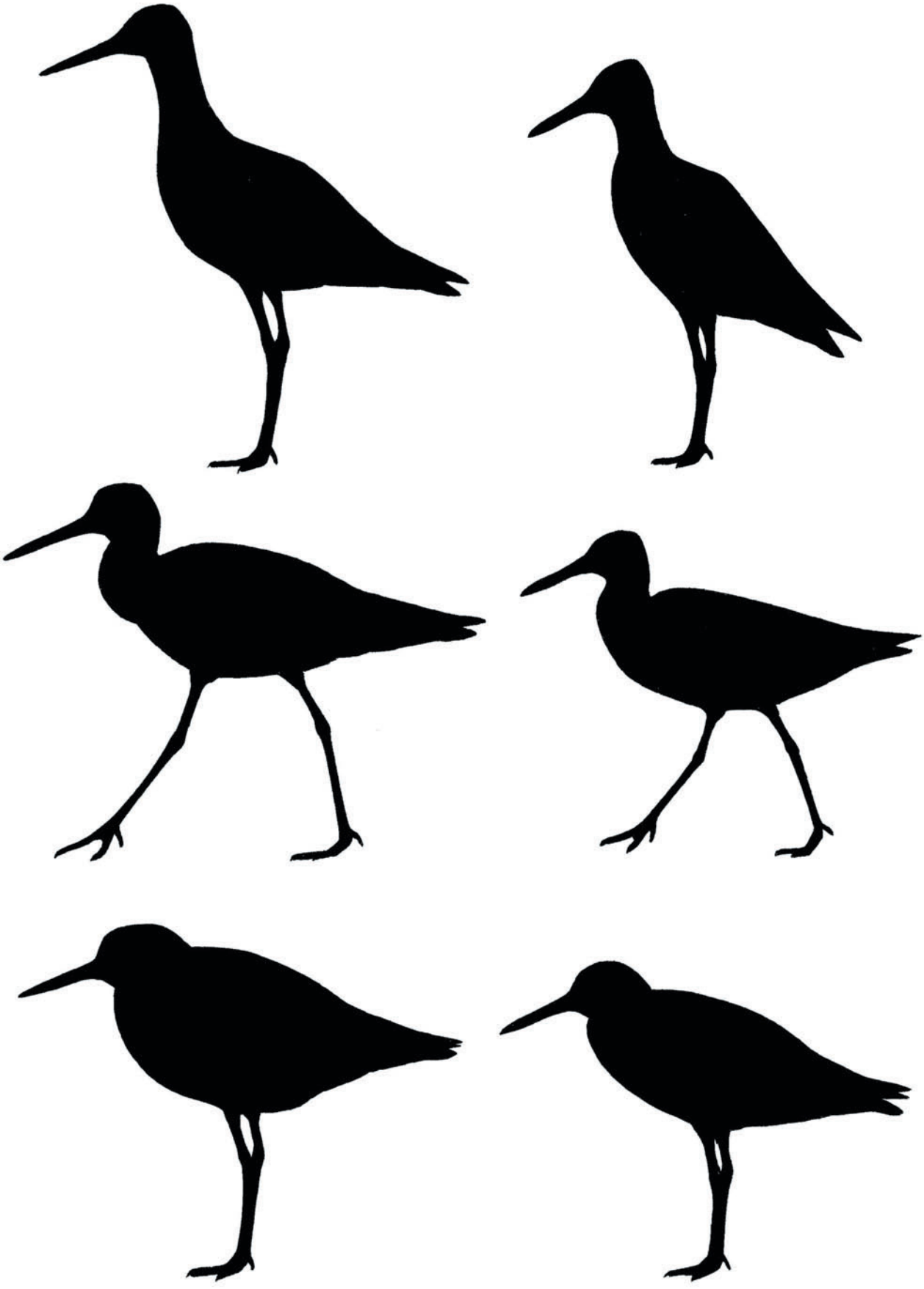

Fig. 4. Juvenile Eastern Willet with Laughing Gull. Juvenile Easterns look darker and browner overall, often with more extensive mottling on the breast and flanks. The scapulars are particularly dark, with more contrastingly pale marginal spots and usually more contrast between the darker scapulars and paler coverts. The coverts and tertials tend to be more contrastingly marked than on juvenile Western. The bill-base averages paler than Western's, but much variation exists. Note the short, heavy bill, relatively short legs, and smoothly rounded breast with no bulge at the base of the neck. *North Carolina; late July 1994. © Michael O'Brien.*

presumably where both populations occur. Although the majority of these are likely Easterns, some Westerns (e.g., those migrating along the Atlantic Coast) are surely included, so the total population of Easterns is probably less than 90,000.

The true taxonomic status of Eastern and Western Willets remains unresolved. Differences in structure, plumage, molt patterns, and voice are outlined on pp. 45–46. The two forms breed allopatrically, and I hypothesize that they have been reproductively isolated from one another at least since the late Pleistocene. Mitochondrial DNA evidence has shown Pleistocene glacial events to be responsible for both initiation and completion of speciation in numerous sister species pairs such

Fig. 5. Non-breeding Western Willet. Note the slim, fine-tipped bill; the tall, rounded crown; and the pale overall coloration. In this relaxed pose, note the plump, rounded body shape with a hint of a bulging neck-base. Non-breeding Eastern differs from Western in structure and in its overall darker, browner coloration. Western Willet is a common wintering bird along the southern coasts of the U. S. Eastern is undocumented in North America in winter. *New Jersey; November 1997. © Michael O'Brien.*

Fig. 6. Juvenile Western Willet. Juvenile Westerns usually look pale and buffy-gray overall. Pale marginal spots and dark subterminal markings on the scapulars, coverts, and tertials show relatively low contrast with the rest of the plumage. The flanks are pale and often appear mostly white under bright lighting conditions. Note the long legs; the long, straight, evenly-tapered, fine-tipped bill; the graceful curve to the back; and the bulge at the base of the neck. *North Carolina; late July 1995. © Michael O'Brien.*

as King and Clapper Rails, Nelson's and Saltmarsh Sharp-tailed Sparrows, and Great-tailed and Boat-tailed Grackles (Johnson and Cicero 2004), species pairs with coastal vs. interior distribution patterns comparable to those of Eastern and Western Willets. Playback experiments have demonstrated that Eastern Willets discriminate between the songs of the two subspecies, responding to playback of Eastern with an 83% frequency and to that of Western with a 22% frequency (Douglas 1998). However, a similar discrimination was not found when other vocalizations were played, and Eastern Willets readily recognized and responded to playback of all Western Willet calls. A thorough study of Willet DNA is needed to clarify the degree of genetic separation between these two taxa.

Identification

Distinguishing between Eastern and Western Willets is mostly a matter of size, structure, and overall color. On average, Westerns are larger, paler, longer- and slimmer-billed, longer-legged, and longer-necked than Easterns. Each of these characters is somewhat variable, however, and a small percentage of birds look intermediate. Also, populations of Eastern Willets on the Gulf Coast look subtly larger, paler, and longer-billed, on average, than Atlantic Coast birds. Despite

Fig. 7. Breeding Western Willet. Note the plump, rounded body; the slim, fine-tipped bill; the tall, rounded crown; the long legs; and the pale overall coloration. The ground color of the upperparts is neutral gray, whereas that of the breast is pale buff. In April, many birds still hold extensive plain gray upperparts from non-breeding plumage. In spring and early summer, the bill often becomes distinctively dark. *Texas; mid-April 2004. © Michael O'Brien.*

Fig. 8. Breeding Eastern Willet. Note the slim body, the relatively heavy bill, the shallow forehead angle, and the brownish overall coloration. In spring and summer, the bill often becomes distinctively pinkish-based. Dark markings on the upperparts and breast are usually heavier than on Western. Behavioral clues are particularly helpful along the Gulf and southern Atlantic Coasts in spring, when most Easterns are displaying noisily over salt marsh territories and when most Westerns are foraging quietly on beaches. *Texas; mid-April 2004. © Michael O'Brien.*

this variation, a combination of characters is distinctive in most individuals. See Figs. 1–12 for details.

Molt patterns differ slightly between the two subspecies. From an identification standpoint, the most useful difference is the geographic region in which the prebasic flight-feather molt takes place. Both subspecies undergo this molt on or near the wintering grounds, which, for Western Willet, includes the southern coasts of North America. Easterns retain full flight feathers while in North America. Similarly, Easterns undergo only limited prebasic body molt before departure in fall, whereas local wintering Westerns undergo their entire molt here.

Vocalizations often provide a useful means of distinguishing between Eastern and Western Willets. Differences in the primary "pill will willet" song are particularly distinct. Eastern's song is an urgent, rapidly-repeated *pidl-will-willit*. Western's is a slower, lower-pitched, more clearly annunciated *p'd-weeel-will-wit* with the second note more drawn-out and the last two notes more clearly separated. With a little practice, the difference is obvious. In both subspecies, songs are given by both sexes, primarily on the breeding grounds but also occasionally during spring migration. Differences between calls are much less distinct that those between songs. All calls of Western average lower-pitched and more drawn-out than those of Eastern, but much overlap exists and many calls are not readily identifiable to subspecies. The flight call is a loud, strident *klaay-drr* or *klaay-dr-dr*, typically with a lower, huskier, Marbled Godwit-like quality in Western and a higher, Laughing Gull-like quality in Eastern. With practice, classic examples of these calls are distinctive but variation precludes the identification of some. When flushed, both subspecies utter a higher, more excited *kli-li-li-li*, often with a trilled quality (on average, more distinctly trilled in Western). The breeding alarm call is a sharp, repeated *kleep* or *kalip*, lower and more muffled in Western. The year-round alarm is a more drawn-out, screaming *klaayii* and variations, often with a distinctly curlew-like quality, particularly in Western.

Fig. 9. Breeding Eastern Willet. The relatively short, stout, pinkish-based bill; the short legs; the shallow forehead angle; the slim, compact body; and the brownish ground color to the upperparts are distinctive. The heavily barred underparts are probably outside the range of variation of Western, although the darkest Westerns may be nearly as heavily marked. Bill shape is variable in both subspecies. This individual is normal but on the slim end for Eastern. *New Jersey; mid-June 2005. © Michael O'Brien.*

Acknowledgments

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ANSWER: *The front bird in Fig. 1 is a Western Willet, and the rear bird is an Eastern.*

Fig. 10 (above). Juvenile/non-breeding Western (left) and Eastern (right) Willets. In flight, Eastern looks more compact, with a shorter body, with slightly narrower, often more angled wings, and with quicker wingbeats. Western looks somewhat more elongated, with a deep-keeled or heavy-chested look. Although the legs are longer in Western, foot projection is about the same due to its longer body. As on standing birds, bill shape is one of the best clues. Eastern is darker and browner overall and often has more-extensive dark mottling along the flanks. Western looks paler and grayer overall, with paler upperwing coverts and often whiter-looking flanks that contrast more with the black wing markings. Both subspecies show great variation in wing-stripe thickness, to the point that variation in Eastern is completely overlapped by variation in Western. However, Western's wing stripe averages broader, and many Westerns show distinctively broad wing stripes. *Pen-and-ink on paper by © Michael O'Brien.*

Fig. 11 (right). Worn breeding Western Willet. The slim, fine-tipped, relatively dark bill; the long legs; and the long neck are distinctive. Birds in mid-summer show heavier markings, often approaching Eastern. Note the pale, neutral gray ground color to the upperparts, contrasting strongly with the barring and subtly with the buff ground color to the breast. Barring on the underparts averages thinner, sparser, and paler than on Eastern, although the breast spotting is often more pronounced. *North Carolina; early July 2005. © Michael O'Brien.*

Fig. 12 (below). Mostly non-breeding Western Willet (left) with worn breeding Eastern Willets. This Western looks distinctively pale, largely because it has already acquired extensive non-breeding plumage. It may be an early molting adult but, at this early date, is more likely a first-summer (one-year-old) bird that never acquired full breeding plumage. Such birds often spend the summer in coastal areas, where they look strikingly paler than the local breeding Easterns. Easterns usually hold most of their breeding plumage until the wintering grounds are reached. It should be emphasized that Easterns in full non-breeding plumage (including first-summer plumage) are undocumented in the U. S. *North Carolina; early July 1998. © Michael O'Brien.*