

ED AND FLYCATCHERS

accepted 12 records. All 12 accepted records were photographed, while five rejected records were not; thus, the CBRC has not yet shown a willingness to accept sight records of this species. In addition, all records are from islands or well-worked desert oases during fall migration, with most being from September. It seems very likely then that a small number of this species crosses the region in a broader front, and future records will be encountered in well-worked coastal areas, other desert oases and in adjacent states.

The Western Flycatcher, as the name implies, has a western orientation, breeding in a more longitudinally restricted area. The Pacific-slope Flycatcher breeds from southeastern Alaska south through British Columbia to California and into Baja California. Cordillerans breed from Alberta and south in the Rockies through Idaho, Montana and western South Dakota, south through northeastern California, Nevada and Arizona on the west side of their range and Nebraska, Colorado, New Mexico and west Texas on the east edge, through into Mexico (AOU 1998).

Due to the difficulty in identifying migrants within this complex, it is best to treat them together away from breeding areas. The migration is generally more restricted, being most numerous in the southwestern half of the United States, with few reports of vagrants east of the Rockies. There are vagrant reports from Louisiana with three specimens of Pacific Slope and two specimens of Cordilleran (J. V. Remsen, Jr., pers. comm.), and two records from Pennsylvania of Cordilleran (F. Haas, pers. comm.). No doubt small numbers of Western Flycatchers move into the eastern part of the Continent, but the current number of records remains small. Most claims of vagrant Western Flycatchers are probably best left not identified to species. The reasons for the lack of records of vagrant Western Flycatchers relative to Yellow-bellied might include: the greater latitude reached by Yellow-bellied Flycatcher during the breeding season (which would assumedly give them a greater chance of going off course), the fact that Yellow-bellieds breed so far west that the western US may actually yield a small number of migrants annually, a larger east-west component to the migration of Yellow-bellied versus a more north-south migration for Western (see DeSante 1983), and perhaps the identification difficulties within this complex.

IDENTIFICATION

Although Western and Yellow-bellied flycatchers are most similar, the Acadian Flycatcher *E. virescens* must also be considered. All of these species share green upperparts, a bold eyering, fairly extensive yellow underparts (particularly the throat and chin for Yellow-bellied and Western) and a bright yellow or orange lower mandible. The separation of Yellow-bellied and Acadian is not always easy and Acadians must be considered if a birder suspects a vagrant Yellow-bellied Flycatcher. Although a thorough analysis is beyond the scope of this paper, we

Table 1. Distances (mm) between primary tips in Yellow-bellied and Western flycatchers. Ranges based on mean \pm 2 S.D. from 20 specimens of each group taken at wide ranges of collection localities. The measurements for Western Flycatcher include ten each of Pacific Slope and Cordilleran flycatchers. These differences result in a subtly different spacing of the primaries.

Species	p7-p6	p6-p5	p5-p4
Yellow-bellied	2.9-4.9	4.1-5.5	1.8-3.6
Western	1.2-3.0	4.2-6.2	2.5-4.0



Figure 1. This Yellow-bellied Flycatcher shows the small, rounded head typical of this species. The eyering is round and yellowish, showing only a slight expansion at the rear. The wings are very dark and although not all edges are visible, the contrast is greater than one would see on a Western Flycatcher. Photo by Matt T. Heindel, 21 September 1997 at Galileo Hill Park, California.

can summarize the following differences between Acadian and Yellow-bellied. Acadian is a larger bird than Yellow-bellied and has a distinctly different shape due to the longer, pointed wings and the longer bill. Acadians almost always have a white throat, but a review of specimens indicates that at least some (particularly in fall) can have yellow throats. Even these individuals, however, will probably have some white in the chin. The eyering of Acadian is white, thin and perfectly round. On many birds it can be so thin as to be almost absent. The call of the Acadian is a high, hard "peet" or "peek" and is quite different from most calls of the Yellow-bellied. Compare these features to those of the Yellow-bellied as described below. See Whitney and Kaufman (1986) and Kaufman (1990) for a fuller treatment of this topic.

Separation of Yellow-bellied from Western flycatcher in the field is generally more difficult. The key field characters for identifying these species are the eyering, darkness of the flight feathers, edges to these flight feathers, subtle differences in colouration, and subtle differences in shape (DeSante et al. 1985, Kaufman 1990, Pyle and McCaskie 1992). Let's look at these marks more closely.



Figure 2. The peaked crown of Western Flycatcher is a good feature, recalling Acadian. The eyering is very typical being white, thin and perfectly round. Photo by Matt T. Heindel, 12 April 1997 at Galileo Hill Park, California.





Figure 2. The peaked crown on this Western Flycatcher is a good feature, recalling a pewee. The eyering is very typical being white, expanding broadly behind the eye and disappearing on top of the eye. Photo by Matt T. Heindel, 12 April 1994, Irvine, California.



Figure 3. This photograph of a Yellow-bellied Flycatcher does not offer much in the way of identification clues, although the eyering looks bold and complete. The indistinct olive streaks across the breast are a good feature of this species, particularly in fall. Photo by Matt T. Heindel, 24 September 1997, near Cantil, California.



Figure 4. This Western Flycatcher has a classic pose, showing the peaked crown and typical eyering. Also, subtle differences in structure show a slightly longer-billed and longer-tailed look than a Yellow-bellied Flycatcher. Although colour must be ascertained carefully (and photographs may be misleading) the brownish tones to the olive on the crown and back are typical of this complex. Photo by Matt T. Heindel, 4 May 1990, Butterbredt Spring, California.



Figure 5. This Yellow-bellied Flycatcher shows the deeper green (lacking brownish tones), the round head and the very dark remiges typical of the species. The edges to the tertials, in particular, are bolder and more extensive and contrast to a greater degree than on similar feathers of a Western Flycatcher. Photo by Peter Pyle, 10 September 1997, Southeast Farallon Island, California.

Eyering- Yellow-bellied Flycatcher has a more evenly rounded eyering, which can be white but usually has some yellow colouration. The eyering of Western is white with an obvious teardrop at the rear of the eye and a flattened area at the top of the eye; invariably, the eyering disappears entirely at this point. On many Yellow-bellieds, there is a slight buildup on the rear of the eyering, but this is very rarely as noticeable as it is on Westerns. In addition, the eyering is of a more even thickness as it passes the top of the eye and is usually yellow. There is some variation with some Yellow-bellied eyerings appearing whiter and with some narrowing slightly at the top of the eye. Nevertheless, we regard this mark as good as any field-mark in the separation of these two species. In spite of this, the eyering of a particular bird in question may not be distinctive enough to make a conclusion based on this mark alone.

Wing colouration- Yellow-bellieds have darker wings and tail, usually appearing blackish. The wings of Westerns tend to be distinctly browner and duller. In addition, the flight feathers on the Yellow-bellied are boldly edged, typically with yellow, but they can be edged with white or buff. The contrast between these feather edges is greater and the secondary panel formed by edges to the secondaries visible below the tertials on the folded wing is quite bold. This is compared to the typically duller and dingy whitish edges on the duller wings of Western. It is important to consider the degree of feather wear, as fresher feathers are darker on all species. The fact that Westerns breed in more arid and exposed habitat may cause their wings to become



Figure 6. Although slightly v colour. Additionally, note the tifying this species. Photo by





Figure 6. Although slightly worn, this Pacific-slope Flycatcher shows the typical eyering, head shape and colour. Additionally, note the spacing between the primaries (see text or Figure 8 for comparison) further identifying this species. Photo by John C. Wilson, 4 July 1994, Greenhorn Mtns., California.



Figure 7. This Cordilleran Flycatcher, virtually identical in plumage to the Pacific-slope, shows the longer bill, peaked crown and duller brownish tones of Western Flycatcher. Lighting prevents firm conclusions to be reached on the eyering, but the expansion behind the eye is greater than one would expect with Yellow-bellied Flycatcher. The primary spacing is typical of Western (and eliminates Yellow-bellied) and at least nine primaries and secondaries extend beyond the tertials, another feature of Western Flycatcher. Photo by John C. Wilson, 24 July 1994, Mt. Lemmon, Arizona.

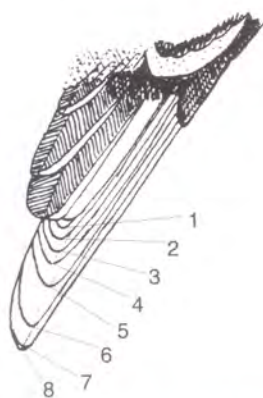
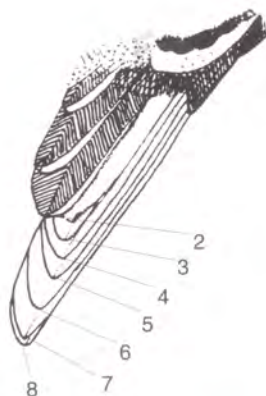


Figure 8.

Western Flycatcher - typically shows one large gap, or as in the above figure, a large gap bracketed by two smaller gaps



Yellow-bellied Flycatcher - typically shows two large gaps with the more proximal gap being larger or equal to the distal gap

(since p9 is shorter, it is not visible behind p8)

pale more quickly, especially in adults in fall, and add to the perceived differences. Although these field marks seem consistent, they are a bit more subjective and require experience and care to apply to birds in the field.

General colouration- Yellow-bellied Flycatcher has brighter green upperparts than Western. The upperparts of Westerns are more olive, less bright and often with a hint of brown, something always lacking in Yellow-bellied. Also, Yellow-bellied has indistinct olive streaks on the breast, particularly on the sides of the breast. This is probably most prevalent in hatch-year fall birds, when most vagrant Yellow-bellied records are likely to occur. Occasionally, some Westerns may show some very blurry streaks on the sides of the breast but they are not nearly as extensive or olive as the streaks on a Yellow-bellied, and the Westerns that show this tend to have a rather brownish tone.

General shape- Yellow-bellied has a more rounded head, whereas the head of Western usually looks distinctly peaked. On rare occasions (e.g., when wet or being handled) the peak of the Western may be less noticeable, but given repeated views, this difference seems to hold true. The bill averages shorter in Yellow-bellied and, in combination with the rounder head, does give a different look to these two species. In addition, the tail of the Yellow-bellied is shorter. Although all of these differences are subtle, an experienced observer may be able to use these clues in helping to determine the identification of a given individual.

Wing morphology - DeSante et al. (1985) pointed out differences in the wing morphology of Yellow-bellied and Western flycatchers (see also Pyle 1997). Being a longer-distance migrant, Yellow-bellied has a longer and more pointed wing, with only three primaries (p9-p7, numbered distally) forming the tip versus four primaries (p9-p6) in the Western. Examination of specimens and photographs indicate that wing morphology differences are often observable in the field, given good views preferably through a telescope.

Another difference in wing morphology is that Yellow-bellied Flycatcher averages longer tertials than Western Flycatcher, also a trait of longer-distance migrants. On the closed

wing in the field, the tertial Western; thus, in Yellow-bellied in Western there are 5-9 primary tips (S1-S2) can be seen in

The distance between the primary catcher, whereas the distance is average larger in Western Flycatcher primaries, with p8 being the most distal in most Yellow-bellied Flycatchers (between p6 and p5) while in Westerns (Figure 8). Occasional Westerns in these cases the more distal gap bracketed by two smaller gaps. In Yellow-bellied Flycatchers the two gaps are bracketed by two smaller gaps. The more proximal gap (p7-p6) is typically larger or equal to the distal gap (p8-p7) to appreciate this difference. This difference can provide a reliable means of

VOCALIZATIONS

Although songs are quite complex (Eckert 1994), since the primary purpose of this paper is to be discussed. Yellow-bellied Flycatcher Some observers liken their vocalizations to the fullness of the vocalization heard from Western Flycatcher "su-wheel" (Pacific-slope high, hard "eek" note. The vocalization is a substantial controversy, but none of their vocalizations, but none of their vocalizations they lack the full or sweet sound of these birds in the field in the

SUMMARY

It must be stressed that the identification of these birds is extremely difficult and even in the field this complex. Additionally, it is possible in order to hear their vocalizations observers should allow for the identification of flight feather colour, shape and subtle differences objectively. This is the most well-studied individual and a conservative approach to

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wing in the field, the tertials cover more primary and secondary tips in Yellow-bellied than in Western; thus, in Yellow-bellied there are 4-6 primary tips visible beyond the tertials whereas in Western there are 5-9 primary/secondary tips visible beyond the tertials. Up to 2 secondary tips (S1-S2) can be seen in Western Flycatcher when 8-9 tips are visible.

The distance between p7 and p6 is longer in Yellow-bellied than in Western flycatcher, whereas the distances between p6 and p5 and between p5 and p4 are similar but average larger in Western Flycatchers (Table 1, Figure 8). In both species p7 is among the longest primaries, with p8 being the longest on 40-50% of specimens. In either case, the wing tip of most Yellow-bellied Flycatchers consists of two large gaps of > 3 mm (between p7 and p6 and between p6 and p5) while that of Western Flycatcher usually consists of only one (p6-p5; see Figure 8). Occasional Western Flycatchers can appear to have two or three large gaps, but in these cases the more distal gap (p6-p5) is usually larger than the more proximal gap or there is one large gap bracketed by two smaller gaps (p5-p4; see Figure 8). In Yellow-bellied Flycatchers the two gaps are similar or with the more proximal gap (p6-p5) being larger than the more distal gap (p7-p6; see Figure 8). Although somewhat complex and subtle, it is possible to appreciate this difference in the field and on photographs (Figures 6, 7 and 10) and it can provide a reliable means of separating most individuals of the two species groups.

VOCALIZATIONS

Although songs are quite distinct (for more information see Godfrey 1986, Kaufman 1990, and Eckert 1994), since the practical application of the article is to identify migrants, only calls will be discussed. Yellow-bellied Flycatchers have a rather sweet and full "chew" or "chewee". Some observers liken their call to an Eastern Wood Pewee-like "perweee". The calls vary but the fullness of the vocalizations, either slightly upslurred or downslurred, is very unlike anything heard from Western Flycatchers. Western Flycatchers have a two-note call, upslurred "su-wheef" (Pacific-slope) and "peet-weef" (Cordilleran). In addition, Westerns give a very high, hard "eek" note. There is some variation in the call notes of the Western complex, including substantial controversy as to the possible overlap of Pacific-slope and Cordilleran vocalizations, but none of their vocalizations should be confused with the calls of Yellow-bellied as they lack the full or sweet qualities of the latter species. There remains no better way to identify birds in the field in this complex than by call.

SUMMARY

It must be stressed that the separation of Yellow-bellied and Western flycatchers in the field is extremely difficult and every effort should be made to photograph any claim of a vagrant in this complex. Additionally, observers should spend as much time with a suspected vagrant as possible in order to hear it vocalize. Critical assessment of the eyering, shape, and flight feathers should allow for the identification of most well-studied individuals. Although we feel the flight feather colour, shape, and wing morphology should be reliable, the ability to apply these subtle differences objectively takes significant experience. Notwithstanding our belief that most well-studied individuals in this complex can be reliably separated, we still encourage a conservative approach to identification.

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Figure 9. Although a bit soft in focus, this comparison shows typical differences between the Western (L) and Yellow-bellied (R) flycatchers. Westerns are browner and duller with less impressive contrast in the remiges. Yellow-bellieds are greener, brighter and with bold edges to the black wings. The primary spacing differences are hard to note in this picture (and birds in the hand may be inadvertently placed in artificial positions) but, in general, the distal gap is the smaller of the gaps on Yellow-bellied. Photo by Peter Pyle, 8 September 1989, Southeast Farallon Island, California.



Figure 10. The green tones, rounded head and dark wings all point to Yellow-bellied Flycatcher (same bird as in Figure 5). The wing that seems to be in a more natural state shows the primary spacing typical of Yellow-bellied. Photo by Peter Pyle, 10 September 1997, Southeast Farallon Island, California.



Figure 11. Photograph showing the diagnostic wing pattern of the Yellow-bellied Flycatcher. Photo by M.

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Figure 11. Photographing vagrants, in particular, is helpful in that the wing formula is often easier to decipher by studying pictures than it is in real life. This Yellow-bellied Flycatcher, partially hidden from view, shows the diagnostic primary spacing and the dark wings and other features consistent with this species. Photo by Matt T. Heindel, 30 September 1989, Galileo Hill Park, California.

any identification piece and we thank Douglas J. Long for permission to study the skins at the California Academy of Sciences, J. V. Remsen, Jr. for assistance at Louisiana State University, and Kimball L. Garrett for access and help with the collection at the Los Angeles County Museum of Natural History.

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