

Separation of **Bendire's** and **Curve-billed Thrashers**: An Identification Primer

Chrissy Kondrat • Phoenix, Arizona • ckondrat@azgfd.gov

Bendire's Thrasher (*Toxostoma bendirei*) is a secretive species that inhabits the deserts of the southwestern U.S. and northwestern Mexico. It occurs alongside other mimid species (Mimidae) that share not only the same habitat, but also some physical characteristics. Curve-billed Thrasher (*T. curvirostre*), in particular, can sometimes be challenging to separate using physical characteristics alone. Paying close attention in the field and taking photos can be very helpful; in particular, photos can allow for subsequent closer examination of features.

Habitat

Bendire's Thrasher is found in a variety of certain habitats, and understanding this can be key to finding the species. The earliest description of typical Bendire's Thrasher habitat stated that the species prefers stretches of open ground that meet tall, dense bushes and/or cholla cactus (Phillips et al. 1964). This is most often the case, but as more observations are recorded, it has become apparent that their habitats are somewhat more varied. The species is found in a number of different ecoregions in the southwest, such as upper and low-

er Sonoran Desert, Pinyon-Juniper Woodland, Mojave Basin and Desert, Chihuahuan Desert, and the Colorado Plateau.

Recent research has begun to better identify and quantify the habitat profile of this species. Field vegetation assessments have indicated that Bendire's Thrasher is more likely to be

Figures 1a and 1b. [BELOW] A pale bill base, seen here in this adult, is present at all ages in Bendire's Thrasher. Wittmann, Maricopa Co, Arizona. 15 Oct 2015. Photos © Chrissy Kondrat.





Figure 2. (ABOVE) A juvenile Bendire's Thrasher showing the pale gray (sometimes faintly purple) eye color and very short bill present at fledging. Wittmann, Maricopa Co, Arizona. 5 May 2015. Photo © Chrissy Kondrat.



found in areas near washes, in areas with high cholla density, in areas with low topographic relief (i.e., relatively flat), with trees present (but in low density), at elevations on average around 3281 ft. (1000 m), and where cattle are present (Ammon et al. 2019). Historical literature from the early 20th century noted that Bendire's Thrasher was abundant on floodplains of the Avra Valley area and what now are parts of urban Tucson, Arizona area, where *Lycium*, *Prosopis*, and *Zizyphus* bushes grow along fencerows. Rea (1983) also noted that nearly every fencerow contained one or more nests. In today's changed landscape, some populations persist in natural creosote flat areas edged by desert brush and trees. They are also found along the margins of retired agricultural lands, which are themselves most often located in the historical floodplains described above by Rea (1983).

Aural Identification

Thankfully, Bendire's Thrasher can be easily identified by its song, which sounds like two birds at the same time continuously warbling without pause. In contrast, Curve-billed Thrasher's song has discrete and clear, often repeated phrases, some of which feature clear and sharp notes not found in the song of Bendire's.

Bendire's Thrasher also has a host of call notes (Pieplow 2019), such as the low semi-musical *burrt* or brief, harsh chatter call. These appear to be used to communicate location between pairs and among family groups. There are a few other uncommon calls that have been observed during the breeding season, such as a descending whistle and soft broken whistle used by adults to communicate with fledglings. Those who are unfamiliar with the whistle calls of other desert birds may confuse these uncommon Bendire's calls with the short *werp* call of a Phainopepla or the more upslurred *weep* call of a LeConte's Thrasher (which is much louder and longer). Bendire's Thrasher also has a very loud alarm call. It sounds like a high and harsh snarl (Pieplow 2019) and is quite similar to the snarl of a Black-tailed Gnatcatcher. Northern Mockingbird also has a similar call, but the thrasher's is comparatively prolonged and slightly trilled (Gilman 1909). Mockingbirds can do a good job at sounding similar, but they will often slip and add odd pieces to the mimicked song.



Figure 3a. [TOP] Adult Curve-billed Thrasher in profile showing the all-dark bill. Wittman, Maricopa Co, Arizona. 21 Feb 2015. Photo © C. Kondrat.

Figure 3b. [MIDDLE] Juvenile (Hatching year) Curve-billed Thrasher profile showing the shorter all-dark bill including the base and sides. Hass Plains, Maricopa Co, Arizona. 14 March 2021. Photo © Chrissy Kondrat.



Xeno-Canto.org is a helpful resource for learning the variety of vocalizations described here.

The song of Curve-billed Thrasher is a mix of short, sharp notes and warbled distinct phrases, with some repetition. Calls include an explosive whistled *whit!*, a repetitive *whit-whit-whit*, a whistled *whit-wheet!*, a low *chuck* (sometimes given in rapid series), and a high-pitched trill (in contrast to the longer, raspy trill of Bendire's). When alarmed, Curve-billed Thrashers produce a combination of rapid *whit-wheet* and *whit* notes, whereas the calls heard from Bendire's in this situation are harsh and raspy.

Visual Identification

You may not always come across a bird singing, and during winter and at different stages of nesting, Bendire's Thrashers can be quiet and discreet. If you find a silent bird and obtain a decent view, there are some field marks to look for.

Bill

The bill is important for identification and should be examined closely for both color pattern and shape. Both Bendire's and Curve-billed thrashers forage by thrusting their bill into dirt, so beware of discoloration when attempting to ascertain bill color. The bill of an adult Bendire's Thrasher is mostly grayish-brown. The maxilla is slightly curved, and the mandible is straight with a pale patch at the base (Fig. 1A). This pale patch is present in all life stages of the bird (hatchlings, recently-fledged young, and adults) (Fig. 2). In contrast, Curve-billed Thrasher's bill is a dark grayish-brown, with distinct long curves to both the maxilla and mandible (Fig. 3a), and there is no pale patch at the base of the mandible. The light patch on Bendire's bill is usually visible when viewing the side or underneath the bird.

For those interested in a bit more detail on the size of the thrasher's bill, the following



Figure 4. [BOTTOM] This adult Curve-billed Thrasher with bill damage serves as a reminder to beware of abnormal bill shapes when attempting to identify a bird. Wittmann, Maricopa Co, Arizona. 1 Oct 2014. Photo © Chrissy Kondrat.

Figure 5. This adult Bendire's Thrasher is a typical-looking individual with an overall warm pale/sandy coloration and distinctly triangular spotting extending from just below the throat across the breast. Wikieup, Mohave Co, Arizona. 4 Apr 2015. Photo © Chrissy Kondrat.



data collected via my banding efforts indicate the maxilla of an adult Bendire's Thrasher is slightly curved and shorter (17–21 mm, naris to bill tip; [n = 29]) than that of an adult Curve-billed Thrasher (average 24–28 mm, naris to bill tip; [n = 24]). Young Curve-billed Thrashers (up to a year old) may have shorter bills (18–23 mm, naris to bill tip; [n=6]) more similar in length to those of adult Bendire's than to adults (noted above) of their own species (Fig. 3b). Young Bendire's (up to a year old) have bills only 2–4 mm shorter than those of adult Bendire's.

Of course, it is important to be aware of mutations and developmental issues that may impact bill length, color, and shape. These types of deformities can eliminate the usefulness of the bill for identification notes discussed, especially in younger birds, as seen with Curve-billed Thrasher in Fig. 4.

Plumage

Subadult and recently-fledged birds can be confusing to ID. Compared with a typical Curve-billed Thrasher, a typical adult Bendire's Thrasher has a lighter, sandier-colored appearance overall, with small dark triangular markings that trickle downward on the breast, beginning just below the patch of lighter feathers under the throat (Fig. 5). Curve-billed Thrasher tends to be a slightly darker shade of tan/brown and has circular splotches on the breast. But using plumage color or markings alone may not be enough. During the first two years of life, both species may show sparse blotchy markings (Fig. 6A) without any real definition and lacking clear circular or triangular shapes. Curve-billed thrashers of the western *palmeri* group have fewer spots overall, even as older adults. Both species have buff-to-tawny wing bars that with age become pale brown or gray (Pyle 1997), as seen in Fig. 7.

There is geographic variation in the rectrix pattern of Curve-billed Thrashers. In *palmeri* (found from western and central Arizona south the central Sonora), the outer rectrix has a white arrow-shaped mark that crosses over the shaft. In *celsum* (found from southeastern Arizona, New Mexico, Texas, Colorado, Kansas, and Oklahoma south to Zacatecas), the outer rectrix pattern is similar to that of Bendire's Thrasher, but the base of the pale arrow is rounded. Note that five other subspecies, endemic to Mexico,

Table 1 • Synthesis of the primary differences between Bendire's and Curve-billed thrashers.

	Bendire's Thrasher	Curve-billed Thrasher
Song	A relatively quiet, somewhat burry, continuous warble, without pause.	The song is a mix of short sharp notes and warbled distinct phrases, with some repetition.
Calls	A short, repeated <i>tir-up</i> or <i>chir-up</i> , sometimes solo or followed by a low pitch, trill-type call. When with young, adult females may give a quick <i>chur-up</i> or whistle. Alarm call sounds similar to the ratchety call of a gnatcatcher.	An explosive whistled <i>whit</i> , repetitive <i>whit-whit-whit</i> , <i>whit-wheet</i> , <i>rapid low chuck</i> , or high pitch trill-type call. The alarm call is a combination of rapid <i>whit-wheets</i> and <i>whits</i> .
Bill	Slightly decurved and dark gray overall. Mandible pale based with mostly or entirely straight lower edge. On average, 6–11 mm shorter than Curve-billed.	Long, thick, dark, and decurved. Mandible with dark base and noticeably curved lower edge. Be cautious with first-year birds, as their bills can be the same length as those of adult Bendire's.
Iris	In juveniles, the iris is light gray (without the presence of purple) up to about the first 6 months, turning yellow to yellowish orange in older immatures. In adults, the iris is pale yellow with a single red ring that appears to get thicker with age, but overall, the iris still looks pale yellow as it ages.	In juveniles, the iris is more of a purple-gray the first 8 weeks and gray 6–8 months thereafter. After that it turns orangish yellow. In adults, the iris is yellow with an orange-red ring in the center, and multiple rings appear as the bird ages. This creates an overall orange-yellow appearance.
Behavior	When singing, it tends to perch off to the side and/or below the top of a tree or structure. Flight is low, along the ground. Restricted to rural settings. Rarely if ever found in suburban/urban areas.	Most often sings from the tops of structures. Swift and direct in flight; may fly relatively high. Often found nesting in cholla. Frequently found in and near suburban areas, also in open urban settings.

BENDIRE'S AND CURVE-BILLED THRASHER IDENTIFICATION

are not discussed here, as they are allopatric with Bendire's Thrasher. More study is needed to determine whether there is geographic variation within Bendire's Thrasher. Note that the outer rectrices can be extensively worn from March to July, almost eliminating the tail pattern and, therefore, the usefulness of this as a field mark (Fig. 8).

Iris

A juvenile Bendire's Thrasher has a light-gray iris. Curve-billed Thrasher's iris is a purple-gray, with a purple tone. The gray color in both species is present for about 4–6 months after fledging and turns lighter before becoming yellowish.

As each Bendire's approaches about six months of age, its iris turns to a pale yellow, with one thin ring of orange-red in the center. This ring in the iris becomes thicker as the bird ages, sometimes giving it a *slightly* orangish appearance if viewed from a distance. Curve-billed's iris appears substantially more orange with age due to the formation of multiple red rings within the iris. Iris color/pattern is not a surefire way to identify a bird in the field, but it can still be very helpful when combined with other characteristics.

Behavior

Behavior can also be helpful with identification. Bendire's Thrasher tends to make short, low



Figure 7. [ABOVE] This Bendire's Thrasher is showing the pale brown wingbars present in adults; these wing bars are tawnier in adult Curve-billed Thrashers, but use caution, there is much variability in this feature. Wittmann, Maricopa Co, Arizona. 5 March 2020. Photo © Chrissy Kondrat.

Figure 6. [BELOW] For the first year of life, Bendire's Thrasher can have indistinct markings on the breast. Wittmann, Maricopa Co, Arizona. 12 October 2014. Photo © Chrissy Kondrat.



Figure 8. Young Bendire's Thrashers can show very limited white tips to the inner webs of the outer tail feathers, while adults tend to have more extensive white that typically does not extend across to the outer web. There is a great deal of variation across both species. JUVENILE [LEFT]: Steins, Hildago Co, New Mexico. 7 March 2021. ADULT [RIGHT]: Avra Valley, Pima Co, Arizona. 20 March 2020. Photos © Chrissy Kondrat.



Figure 9. An adult Bendire's Thrasher showing such classic characteristics as a mostly straight lower edge to the mandible (especially the distal half), pale base the mandible, less defined slope to the back of the head, and yellow iris with a red ring. The last characteristic can trick a viewer into thinking the iris is orange, but see eye closeup [LEFT], and prominent triangular markings on the breast. Older Bendire's can show a *slight* curve to the basal half of the lower edge of the mandible, as does this bird. Rodeo, Hidalgo Co, New Mexico. 20 Nov 2020. Photos © Michael L. P. Retter.





Figure 10. A side-by-side comparison of Bendire's (ABOVE) and Curve-billed (BELOW) thrashers from the same location on the same day. Note Bendire's shorter, straighter bill with a noticeable pale base to the mandible, warmer overall coloration, and more yellow (less orange) eye. Willcox, Cochise Co, Arizona. 19 Mar 2022. Photos © Alex Lamoreaux.



flights, or run across the ground when moving from plant to plant. Curve-billed Thrasher tends to fly more often, and when doing so, it often flies higher. Bendire's Thrasher also tends to be more timid, especially in the presence of a Curve-billed Thrasher. If both species are present, look for Bendire's lurking in a low bush; it is less likely to be in the open.

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