

# The birds of Wadi Rima: a permanently flowing mountain wadi in western Yemen revisited after 20 years

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In September 2007 and February 2008, I carried out systematic counts and observations where I had conducted similar counts in and around Wadi Rima downstream of Medinat ash Shirq in 1988–1990. The numbers of birds dependent on the wadi bed, Hamerkops *Scopus umbretta*, egrets, herons, waders and wagtails, were well within their 1988–90 range. The degradation of the *Commiphora kataf-Berchemia discolor* woodland, hitherto protected by its remoteness, suggests that without (community) conservation measures this vegetation and the African Grey Hornbills *Tockus nasutus*, Hamadryas Baboons *Papio hamadryas* and Verreaux's Eagles *Aquila verreauxii* that depend on it, will disappear. High counts of wadi-dependent birds, the discovery of three bird species new to the area and an impressive passage of Steppe Buzzards *Buteo buteo vulpinus* testify to the continuing ornithological importance of the area. Despite the dramatic social and demographic changes that occurred in Yemen during the 20 years that had elapsed, the cultivated parts of Wadi Rima and their avifauna had remained remarkably intact.

## INTRODUCTION

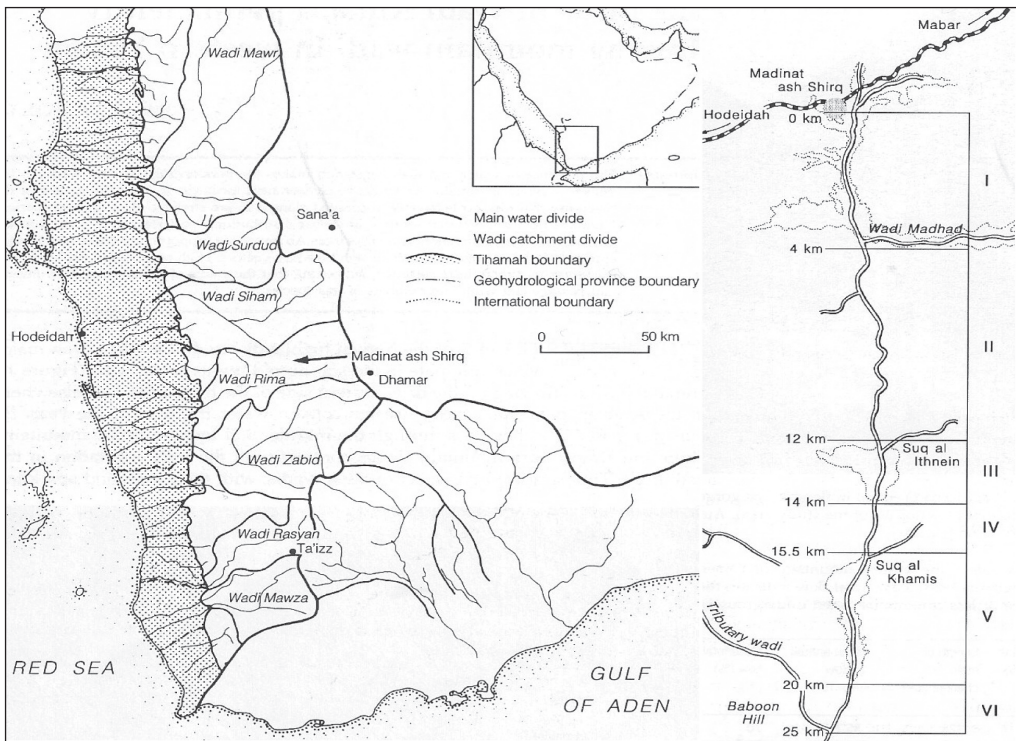
From January 1988 through January 1990, I carried out systematic, almost monthly, bird counts along a 25 km stretch of Wadi Rima, western Yemen (Figure 1), and made observations in surrounding mountain areas (Scholte 1992). In September 2007 and February 2008, I had the opportunity to revisit the area, allowing comparison with those counts and observations of twenty years earlier.

Yemen underwent profound changes in the 20 years that had elapsed. In May 1990, four months after the end of my counts, the former North and South Yemens united. Despite this, Yemen encountered various turbulent moments. In the aftermath of the first Gulf War (1991), hundreds of thousands of Yemeni guest workers returned, many of whom settled in rural areas. Possibly the most significant change of the period was the doubling of Yemen's rapidly growing human population.

I was particularly interested to know if after all these changes, Wadi Rima still offered the "paradise-like aspect with trees and sparkling water, completed by the occurrence of egrets, waders, pigeons, waxbills and many similarly unexpected birds" that I had previously described (Scholte 1992).

## STUDY AREA AND METHODS

Passing the town of Medinat ash Shirq (Figure 1) through the sparsely vegetated 'Medium Altitude Mountains' (Scholte *et al* 1991), I was once again struck by the green valley of Wadi Rima with its sparkling water and lush vegetation dominated by *Cordia abyssinica* trees shading maize, coffee and other crops. The cultivated areas of Suq al Ithnein (transect section III, 12–14 km downstream of Medinat) and Suq al Khamis (section V, 15.5–20 km downstream), with broad wadi beds and extended cultivated wadi terraces, strongly resembled their appearance of 20 years previously. The 'Gorge', where Wadi Rima passes beside 'Baboon Hill' (section VI, 20–25 km downstream), used to be lined by a riverine vegetation of *Breonadia salicina*, *Tamarindus indica* and *Ficus salicifolia*. Their density has decreased because of (excessive) pruning and aging without regeneration. The loss of tree cover on the surrounding mountain slopes along the transect was striking, particularly in section VI that used to be dominated by open *Commiphora kataf-Berchemia discolor* woodland (Scholte *et al* 1991) and now only carries some scattered low shrubs.



**Figure 1.** Location of the west-flowing Wadi Rima, Yemen, and map of the transect route in the wadi (from Scholte 1992).

The construction of an asphalt road that follows Wadi Rima, but above its wadi bed, for 12 km downstream of Medinat ash Shirq has caused the abandonment of about the first half of the former wadi-bed track, *ie* sections I (0–4 km downstream), II (4–12 km downstream) and the first 0.7 km of section III. The new counts and comparisons in the present paper therefore deal with the second, lower, half of the 1988–1990 transect only, where the track passes through sections III–VI, *ie* 12.7–25 km downstream of Medinat (Figure 1, Plate 1).

I counted, this time assisted by my family, by driving at a speed of c5 km/h following the wadi stream, while noting numbers and location (distance from Medinat) of each bird observed (for count dates and period of the day see Table 1). Below, I compare the findings of these recent four counts with the 35 day and 10 night counts conducted 1988–1990. In addition, observations were made outside the transect, concentrating on the Gorge and Baboon Hill 20–25 km downstream of Medinat, as in the late 1980s.



**Plate 1.** Until recently, wadi beds in Yemen constituted the most convenient passage for traffic, allowing relatively quick bird counts that could be repeated over time (photo taken in Wadi Rima section VI, February 2008). © Paul Scholte

As in Scholte (1992), I present findings for each of three categories of birds, which utilise the wadi bed differently:

1. Birds foraging in and around the wadi stream and bed: herons, egrets, waders and wagtails, covered by the transect only.
2. Birds especially attracted by the lush vegetation of the wadi bed, staying there for a considerable part of the year: pigeons, bee-eaters, hornbills, flycatchers, weavers, waxbills, *etc*, covered by the transect and additional observations.
3. Birds from the neighbouring mountain areas visiting the wadi stream for drinking and washing only: doves, several raptor species, ravens *etc*, covered by the transect and additional observations.

Numbers indicated (categories 2, 3) are the highest number observed for the area indicated, often surveyed during both late afternoon and early morning of the two consecutive days of either September 2007 or February 2008. Species observed only once, and of single individuals, 1988–1990, have been omitted.

## RESULTS SEPTEMBER 2007/FEBRUARY 2008

### *Category 1. Birds foraging in and around the wadi stream and bed*

Of the four species previously present year-round, Grey Heron *Ardea cinerea* and Hamerkop *Scopus umbretta* (Plate 2) were observed in all four counts whereas the nocturnal Black-crowned Night Heron *Nycticorax nycticorax* and Spotted Thick-knee *Burhinus capensis* were, as expected, not recorded (Table 1). All regularly observed species in the 1988–1990 day counts were observed again and in numbers toward the higher end of their 1988–1990 range. Of those species observed more than once 1988–1990, only Grey Wagtail *Motacilla cinerea* was not seen, despite its prominent presence in September 1989. However, Yellow Wagtails *Motacilla flava* were much more prominent this time (Table 1).



**Plate 2.** Hamerkop *Scopus umbretta* remains the most conspicuous bird in the well-watered parts of Wadi Rima, Yemen (section IV, September 2007). © Paul Scholte

### *Category 2. Birds attracted by the lush vegetation along the wadi*

Below are those species observed September 2007 and/or February 2008, with their status 1988–1990 (Scholte 1992) in [ ].

**Dusky Turtle Dove** *Streptopelia lugens*. Common in *Ficus* trees Sep 07, four Gorge, section VI Feb 08 [only in winter].

**Red-eyed Dove** *Streptopelia semitorquata*. Several Sep 07 and Feb 08 [most common dove, present all year].

**Laughing Dove** *Stigmatopelia senegalensis*. Several Sep 07 [common all year].

**Bruce's Green Pigeon** *Treron waalia*. One, Gorge, section VI, 8 Feb 08 [regular especially near Gorge].

**Green Bee-eater** *Merops orientalis*. Not observed [rather common resident Baboon Hill].

**Table 1.** Numbers of observed birds of category 1 (dependent on the wadi stream and bed for foraging, see Methods). The 2007–2008 counts covered only half of the transect length of the 1988–1990 counts.

Species	Count dates and periods				Range in numbers observed /mean over 35 day counts 1988–1990
	27 Sep 2007	28 Sep 2007	7 Feb 2008	8 Feb 2008	
	mid-day	morning	mid-day	morning	
Eurasian Teal <i>Anas crecca</i>	0	0	0	0	0–9/0.4
Little Bittern <i>Ixobrychus minutus</i>	1	0	0	0	0/0
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	0	0	0	0	3–26/10.9 night counts only
Squacco Heron <i>Ardeola ralloides</i>	0	0	1	0	0–2/0.2
Cattle Egret <i>Bubulcis ibis</i>	0	0	16	3	0–25/4.7
Grey Heron <i>Ardea cinerea</i>	4	2	3	1	1–10/1.9
Little Egret <i>Egretta egretta</i>	0	1	0	5	0–25/7.8
Western Reef Heron <i>Egretta gularis</i>	0	0	0	0	0–2/0.2
Hamerkop <i>Scopus umbretta</i>	5	2	8	4	1–24/5.8
Spotted Thick-knee <i>Burhinus capensis</i>	0	0	0	0	0–4/1.3 night counts only
Common Snipe <i>Gallinago gallinago</i>	0	0	0	0	0–2/0.2
Common Greenshank <i>Tringa nebularia</i>	0	0	0	1	0–8/0.4
Green Sandpiper <i>Tringa ochropus</i>	0	1	11	10	0–25/5.5
Common Sandpiper <i>Actitis hypoleucos</i>	4	7	0	1	0–8/2.0
Grey-headed Kingfisher <i>Halcyon leucocephala</i>	2	0	0	0	0–15/1.0
Yellow Wagtail <i>Motacilla flava</i>	12	4	0	2	0–4/0.3
Grey Wagtail <i>Motacilla cinerea</i>	0	0	0	0	0–9/1.0
White Wagtail <i>Motacilla alba</i>	0	0	16	10	0–32/6.0

**African Grey Hornbill** *Tockus nasutus*. Six individuals recorded Gorge Sep 2007, three Gorge Feb 2008 [very common resident].

**African Paradise Flycatcher** *Terpsiphone viridis*. One Gorge, section VI, 8 Feb 08 [3 observations of 1–2 birds close to Tributary Wadi].

**White-spectacled Bulbul** *Pycnonotus xanthopygos*. Present Sep 07, Feb 08 [very common all year].

**Arabian Babbler** *Turdoides squamiceps*. Not observed [not uncommon].

**Abyssinian White-eye** *Zosterops abyssinicus*. One Tributary Wadi, end of section VI, Feb 08 [common in wadi trees].

**Shining Sunbird**. *Cinnyris habessinicus*. One in Gorge, section VI, Feb 08 [common resident on slopes].

**Rüppell's Weaver** *Ploceus galbula*. Present Sep 07 [summer breeder].

**Arabian Waxbill** *Estrilda rufibarba*. Group of 30, Feb 08 [resident breeder].

**African Silverbill** *Lonchura cantans*. Five along wadi Sep 07 [five in Feb 1989].

### Category 3. Birds visiting the wadi for drinking and washing

Below are species observed September 2007 and/or February 2008, with their status 1988–1990 (Scholte 1992) between [ ].

**Arabian Partridge** *Alectoris melanocephala*. Three, Sep 07 Baboon Hill.



**Black Kite** *Milvus migrans*. 20, Sep 07 and 25, Feb 08 [common all year].

**Eurasian Griffon Vulture** *Gyps fulvus*. Feb 08, four above Gorge, section VI, colony 40 km upstream from Medinat again occupied and eight individuals seen there [regularly seen around Baboon Hill. The upstream colony with an estimated 30 nests had been abandoned in 1989].

**Gabar Goshawk** *Micronisus gabar*. One observed Sep 07, section VI [single, Tributary Wadi 23 June 1989].

**Shikra** *Accipiter badius*. Not observed [probably resident breeder, five times observed].

**Steppe Buzzard** *Buteo buteo vulpinus*. >1000 birds in Sep 07, 6 in Feb 08 [After a visit to the area 26 Sep 1989 I concluded that this part of Wadi Rima appears to not have an important autumn passage of Steppe Eagle or Steppe Buzzard].

**Steppe Eagle** *Aquila nipalensis*. Single Sep 07 and one Feb 08 [present but scattered in December, tens in October 89].

**Verreaux's Eagle** *Aquila verreauxii*. Not observed despite camping close to its former nesting site [one resident pair commonly seen in the 20–25 km section downstream of Medinat, with confirmed breeding in 1989–1990].

**Booted Eagle** *Aquila pennata*. One on migration Sep 07 [not observed].

**Common Kestrel** *Falco tinnunculus*. One Sep 07 and one Feb 08 [probably resident breeder in higher mountains].

**Rock Dove** *Columba livia*. Some 30 drinking in wadi Sep 07 and again Feb 08 [common resident].

**Alpine Swift** *Tachymarptis melba*. Not observed [common in summer].

**Little Swift** *Apus affinis*. Not observed [common in summer].

**Fan-tailed Raven** *Corvus rhipidurus*. Observed Sep 07 and Feb 08 [present all year].

**Rock Martin** *Ptyonoprogne fuligula*. Present Gorge, section VI, Feb 08.

**Red-rumped Swallow** *Cecropis daurica*. Present Gorge, section VI, Sep 07 [several observed only 23 June 1989].

**Tristram's Starling** *Onychognathus leucogaster*. Common in the Gorge, section VI, Sep 07, seen entering crevice Feb 08 [present all year, juvenile fed 23 June].

**Arabian Wheatear** *Oenanthe lugens lugentoides*. Only observed in higher mountains (Sep 07) [common resident in the higher parts].

**Blackstart** *Cercomela melanura*. One, Gorge, section VI, and three counted along wadi transect Feb 08 [common resident].

**Long-billed Pipit** *Anthus similis*. One Sep 07 [not observed].

**Cinnamon-breasted Bunting** *Emberiza tahapisi*. Three, Gorge, section VI, Feb 08 [common in Tributary Wadi].

## DISCUSSION AND CONCLUSIONS

The continuing construction downstream of the road that bypasses the upper wadi bed suggests that soon the second half of the original Wadi Rima transect will no longer be used by vehicular traffic and become impassable, as upstream. This was probably the last occasion that (parts of) the transect could be surveyed using the 1988–90 methodology (Plate 3). This situation also arose when I attempted to resurvey the Yemen-wide raptor transects of Thiollay and Duhautois (1976) in 2007 but had to abandon because many wadi-bed tracks had been replaced by (asphalt) roads.



**Plate 3.** A road is being carved out of the mountainside (background) and will soon take over from the wadi bed track of the second, lower, half of the Wadi Rima transect (foreground), Yemen, (section V, September 2007). © Paul Scholte



**Plate 4.** With only aging trees remaining in the wadi bed and a much reduced *Commiphora kataf-Berchemia discolor* tree cover on the slopes, the non-cultivated parts of Wadi Rima, Yemen, have lost some of their avifauna, including African Grey Hornbill *Tockus nasutus* and Verreaux's Eagle *Aquila verreauxii* (section VI, September 2007). © Paul Scholte

Three species, the migratory Little Bittern *Ixobrychus minutus* and Booted Eagle and the resident Long-billed Pipit were newly observed, showing that this inventory is not yet exhaustive. The impressive migration on 27 September 2007, with a thousand Steppe Buzzards observed in only an hour of adequate view, refuted my earlier conclusion (see above).

The comparison between four diurnal counts in 2007–08 and the 35 day and 10 night counts in 1987–1989 can only give an impression of changes in avifauna in and around Wadi Rima. Yet counts of birds depending on the wadi bed showed numbers were well within, and sometimes in the upper part, of the range of their numbers in 1988–90 (Table 1). Black-crowned Night Heron and Spotted Thick-knee were exclusively nocturnal in 1988–1990, and their absence in the 2007–08 day counts was expected. The absence of Grey Wagtail was countered by a strong presence of Yellow Wagtail, both migratory species.

With the exception of Verreaux's Eagle, Green Bee-eater and Arabian Babbler, all regularly observed resident species occurring in the wadi vegetation or higher up the mountain were resighted. For Verreaux's Eagle, I attribute this to the decline in numbers of Hamadryas Baboons *Papio hamadryas hamadryas*, its main prey in the area (see below), whereas for the absence of the latter two the decline of *Breonadia salicina* and *Ficus salicifolia* trees in the wadi bed may be a (partial) explanation (Plate 4). The abundance of observed birds in 2007–08 seems to be rather comparable with 1988–1990, with the exception of African Grey Hornbill that used to be much more common. I attribute this to the degradation of the *Commiphora kataf-Berchemia discolor* open woodland on the slopes of the surrounding mountains. Despite its limited timber and charcoal value, the decline in number of trees is likely caused by cutting (Plate 4), whereas grazing pressure seems to have remained relatively low. In the late 1980s Wadi Rima was found to have, together with Jabal Bura, further west, the best example of this open woodland in a Yemen-wide survey (Scholte *et al* 1991). This beautiful orchard-like vegetation with its high African Grey Hornbill and baboon densities, is now only found in Jabal Bura protected area (Hall *et al* 2008). It is, however, possible that with the diversion of the traffic out of the wadi bed, this area will regain its 'remoteness' and, if reinforced by (community) conservation, its protection.

In contrast to birds, the area has witnessed a notable decline of its Hamadryas Baboon population over the last 20 years. The only observation I made this time was on 28 September when I observed a small group of some five baboons in the most inaccessible part of the Gorge. In 1988–1990, when I estimated the population at some 10 groups of 20–30 individuals, there was not a single day that I had not seen or at least heard baboons. An inhabitant of Tributary Wadi, who did not recognize me, related that baboons had become rare whereas “20 years ago they used to be abundant, luring a European from Dhamar to regularly pass by to look for them”. Although the area is still not densely inhabited by people, it is likely that increasing crop damage has led inhabitants to shoot any baboon approaching their fields.

The baboon decline may have had an impact on Verreaux’s Eagle, concerning which I had earlier noted that “A local farmer reported that young baboons are the main food, being knocked from the cliffs” (Scholte 1992). The near-absence of Hyrax *Procavia capensis* in the area, often the exclusive prey of Verreaux’s Eagle (Gargett 1990), already hints at this explanation. Further circumstantial evidence has been provided by Zinner & Pelaex (1999) who reported alarm behaviour of Hamadryas Baboons towards Verreaux’s Eagle in Eritrea, differing markedly from its behaviour towards the smaller Tawny Eagle *Aquila rapax* and Black Kites. They postulated that baboons up to three years old, with a weight of less than 5 kg, similar to that of Hyrax, are especially vulnerable (Zinner & Pelaex 1999).

Two bird inventories in wadis south of Jeddah, Saudi Arabia, were conducted in the early 1990s (Newton *et al* 1994, Felemban 1996). Largely descriptive, they spanned a much larger altitudinal range than the Wadi Rima transect, but showed a striking resemblance in avifauna with Wadi Rima. It would be fascinating to repeat their surveys to understand changes in land use and their impact on the avifauna of the otherwise largely comparable wadi environment.

The comparable count results of wadi-dependent birds, species found new to the area and the impressive passage of Steppe Buzzards testify to the continuing ornithological importance of the Wadi Rima area. The decline in *Commiphora kataf-Berchemia discolor* open woodland shows, however, that Wadi Rima’s remoteness no longer protects this special habitat of African Grey Hornbill, Hamadryas Baboon and Verreaux’s Eagle, calling for community conservation actions. Despite all the major changes that occurred in Yemen over the 20 years, the cultivated wadi parts and their avifauna have remained remarkably intact.

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