

# Bird flyways and stopover conservation sites in the Arabian Peninsula

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**Abstract.** The Arabian Peninsula is important for migratory bird species crossing between Africa, Asia and Europe. Implementing the flyway approach to conservation, the key sites in the Arabian Peninsula should be identified and protected. In this study the important sites were identified using information published on the migration strategies of individual populations and the data available on the Important Birds Areas (IBA) published in 1994. The results showed that the bottlenecks sites, IBA in the coastal areas, and islands with breeding seabirds are probably the priority sites need urgent attention and protection. Factor negatively affecting the migratory species need to be identified and removed. The Wing Over Wetland (WOW) project could be one of the possibilities for migratory birds conservation, as it supports coordination between countries in the flyway and is in the legal framework of international conventions such as Ramsar and AEWA.

**Key words.** Bird migration, Important Bird Area (IBA), migration bottleneck, winter quarters.

Since early times, the annual journeys of birds have inspired and fascinated humans. In the earliest historical documents there are numerous accounts of the migration of birds, or at least their seasonal appearance and disappearance, without any real understanding of why birds moved or where they went. Many bird species undertake long annual migrations, most commonly to utilise longer day lengths and temporarily abundant food resources in northern regions, returning to warmer wintering grounds in the south. For many species, migration may commence along broad fronts, but traditional routes are often along narrow belts called flyways. The term “flyway” has been used in publications since the 1950s to describe these narrow bird migration routes. The general definition presented by BOERE & STROUD (2006) hints at the conservation significance of flyways that touch on both geographical and political domains: *“the entire range of a migratory bird species (or groups of related species or distinct populations of a single species) through which it moves on an annual basis from the breeding grounds to non-breeding areas, including intermediate resting and feeding places as well as the area within which the birds migrate.”* This all-encompassing definition has led to a flyway approach to conservation that explicitly seeks to protect the condition of all key sites along a bird’s flyway (DODMAN & BOERE (2010).

The Arabian Peninsula forms a bridge between Africa, Asia and Europe that is crossed along north-south or east-west flyways by some three billion migrating birds each year (CMS 2006). To understand the importance of the Arabian Peninsula for migratory species, it is necessary to develop an understanding of the migration strategies of individual populations. Information on population migration strategies was summarized using data from NEWTON (2008); DELANY et al. (2009) and DODMAN & BOERE (2010), and for the

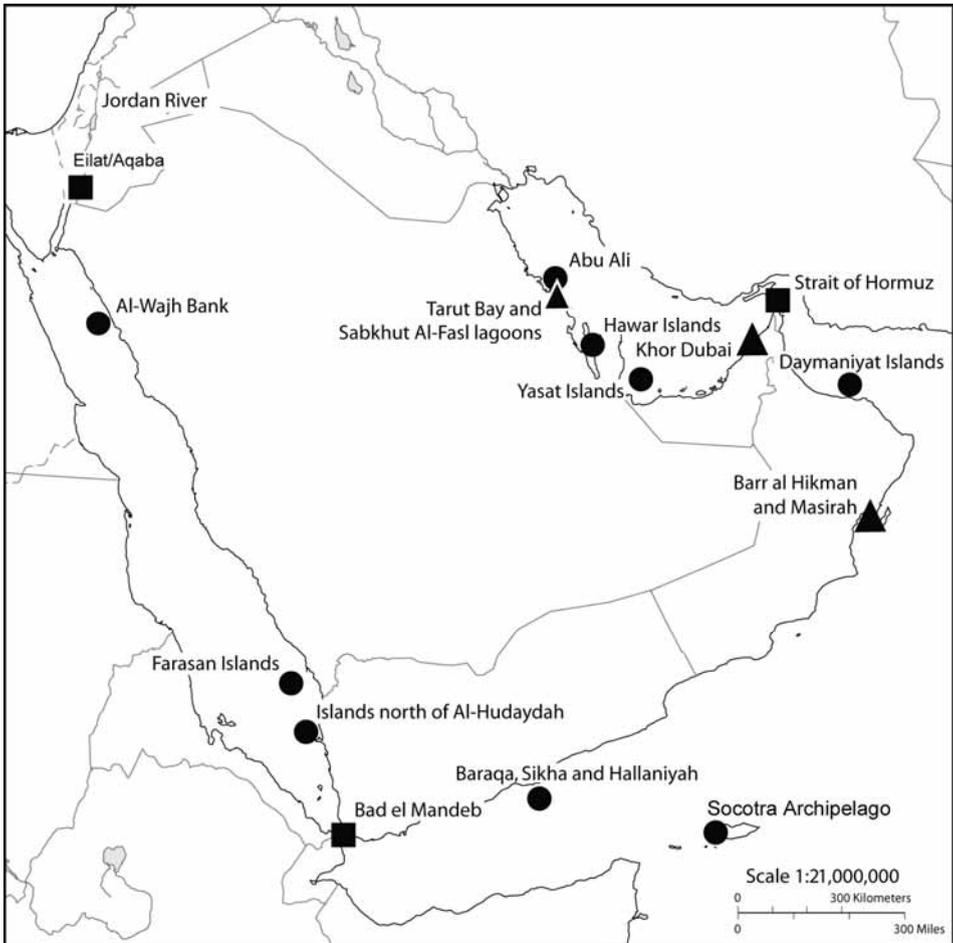


Fig. 1. Map showing the important sites areas for migratory species; squares indicate bottleneck sites for soaring birds; triangles are key feeding and moulting sites for “jumping species”; dots indicate seabird breeding islands.

designation of key sites I followed EVANS (1994). Understanding these strategies is vital in order to develop appropriate conservation action plans. Migration routes do not always cover the same geographical areas in both directions. Some species have geographically narrow migratory ranges, while for others the range may be very broad. Birds migrating along a narrow front tend to follow natural linear features such as coastlines and mountain ranges, and to be channelled into corridors where they may encounter topographic bottlenecks, such as when they move down peninsulas or cross narrow straits of open water (NEWTON 2008). Other key sites, where there are abundant food resources, may be used as moulting sites and as such will be priority conservation areas.



Fig. 2. The marine coasts of the Arabian Peninsula are important resting sites for migratory birds (photograph: Max KASPAREK).

For example, soaring birds may concentrate at bottleneck areas where focused conservation action may need to be priority. These bottlenecks are present at three sites in the Arabian Peninsula (EVANS 1994); the Important Bird Area around Bab Al Mandeb, the area surrounding the Straits of Hormoz, and area along the Jordan River valley to Aqaba (Fig. 1).

In addition, the different travel schemes adopted by birds have important conservation implications. Three travel schemes are recognized: hopping, skipping, and jumping. 'Hopping' birds require suitable short-term stopover sites at regular distances where they can rest; 'skipping' birds need larger sites where they can reliably feed, whereas long-distance "jumping" migrants rely heavily on the existence of large stopover sites with sufficient food resources and limited disturbance where they can safely restore their body condition. The key sites for waders where the number of species exceeds a 1% threshold of the total population are located in three countries in the region (Table 1).

The functional role of sites in supporting bird migration has implications for the conservation of migratory species. Along with the key sites mentioned earlier, which are important for feeding and moulting, islands with a high concentration of breeding endemic species or subspecies of seabirds are also important, e.g. Farasan Island and Al Wajh Bank which have breeding populations of White-eyed Gull *Larus leucophthalmus*. Hwar, Judeem and Abu Ali islands hold the most significant populations of Socotra Cormorant *Phalacrocorax nigrogularis*.

Factors affecting migratory species along flyways include hunting, physical structures such as power lines and wind turbines, oil pollution, diseases (avian flu) and disturbance in the breeding and staging areas, while site-specific impacts include pollution, coastal

Table 1. Migration stopover sites on the Arabian Peninsula with wader species seasonally present in internationally significant numbers (after DELANY et al. 2009).

Country	Site Name	Number of species exceeding 1% threshold
Oman	Barr Al Hikman	17
	Masirah Island	9
Saudi Arabia	Tarut Bay	10
	Sabkhat al-Fasl Lagoons	5
UAE	Khor Dubai	5

development, the introduction of invasive species, and wetland drainage (EVANS 1994). For the long-term conservation of migratory species, flyway action plans need to be implemented to ensure that the threats affecting migratory species in the flyway through the Arabian Peninsula are identified and addressed. One of the mechanisms of relevance for migratory bird conservation in the Arabian Peninsula is the Wings Over Wetlands (WOW) Project ([www.wingsoverwetlands.org](http://www.wingsoverwetlands.org)), which seeks to support and coordinate international flyway level conservation for 255 species of migratory waterbirds in Africa and Eurasia. It has as its policy framework the Convention on Wetlands (Ramsar, Iran, 1971) and the African-Eurasian Migratory Waterbird Agreement (AEWA), with the AEWA region covering 118 countries including all of Africa, Europe and South-west Asia (including the Middle East) DODMAN & BOERE (2010).

## References

- DODMAN, T. & G. C. BOERE (Eds) (2010): The flyway approach to the conservation and wise use of waterbirds and wetlands: A training kit. – Wings Over Wetlands Project, Wetlands International and Birdlife International, Ede, The Netherlands.
- BOERE, G. C. & D. A. STROUD (2006): The flyway concept: what it is and what it isn't. In: G. C. BOERE, C. A. GALBRAITH & D. A. STROUD (Eds), *Waterbirds around the world*. – Edinburgh (U.K.), p. 40-47.
- CMS (Convention on Migratory Species) (2006): [www.cms.int/News/PRESS/nwpr2006/Yemen\\_profile.pdf](http://www.cms.int/News/PRESS/nwpr2006/Yemen_profile.pdf) (accessed 7 October 2010)
- DELANY, S., S. DEREK, T. DODMAN & D. STROUD (2009): An atlas of wader populations in Africa and western Eurasia. – Wetlands International, Wageningen.
- EVANS, M. I. (compiler) (1994): *Important Bird Areas in the Middle East*. – Birdlife Conservation Series No. 2. Birdlife International, Cambridge.
- NEWTON, I. (2008): *The migration ecology of birds*. – Academic Press, Elsevier Ltd. London.