

## —Reviews—

*No way home: the decline of the world's greatest animal migrations.*

By David S. Wilcove.

Washington D. C.: Island Press. Price: \$24.95.

In my ornithology class at the University of Arkansas—Fort Smith, we delve deep into the mysteries of bird migration. I attempt to convert mundane scientific jargon into fascinating prose, as I explain migration, that complex natural phenomenon where organisms stage periodic movements between two different geographical areas. David Wilcove's *No way home* will be a welcome addition to my class reading assignments because this eminent Princeton University ecologist conveys the age-old mysteries of animal migration in the form of a very readable book.

In seven engaging chapters, Wilcove takes readers through the various challenges faced by a variety of creatures. He presents songbirds and monarch butterflies migrating across continents, whales wandering around oceans, ungulates moving in seething masses across plains, and schools of salmon migrating upstream from oceans. He explains why they do it, how they withstand it, and what we have done as humans to disrupt these migrations as we, in our relentless push for 'development', elbowed our way into their domains.

Wilcove highlights the four most pressing problems faced by migratory creatures: habitat destruction, man-made obstacles, over-exploitation, and climate change. The accomplished author, who once spent a night in California assisting rare salamanders cross a highway that separated their upland habitat from their breeding pond, uses his own lifetime's work along with a thorough review of literature to bring us the story of the lives of these itinerant creatures.

How organisms find their way from and to their destinations, often in pitch darkness or bad weather, has intrigued humans for millennia. Wilcove says some have tiny magnets in their bodies that help perceive earth's magnetic field; others depend on shapes of coastlines or prominent landmarks like mountains or even the pattern of stars on the night sky. He also presents evidence that some may actually rely on smell to identify familiar sites. Even stunning is the fact that they may have a combination of these cues, using one as predominant guidance system, while using others as backup in case the main one fails.

Migrating thrushes, according to Wilcove, may use stars on clear nights and may switch to detecting earth's magnetic field on cloudy nights. In many species, the 'how' of migration is still unknown—despite years of research. 'Somehow they manage to sniff, see or sense when to go, where to go, and when to return', says Wilcove.

Wilcove presents the sad irony that, just as migration itself is an endangered phenomenon, its scientific study has reached its peak. Scientists in Europe can now determine the exact part of Africa a warbler spent its winter, just by

examining chemical signatures in the feathers it grew in its wintering grounds. Minuscule transmitters 'weighing less than a dime' can now be affixed onto small birds, which can then be tracked with sophisticated satellite-enabled detectors.

The decline of North American migratory songbirds has received a lot of attention from scientists in the past few decades, and nest parasitism by cowbirds has been implicated in this. Cowbirds are known for their habit of laying eggs in songbirds' nests, thereby forcing songbirds to raise alien offspring at the expense of their own breeding success. The traditional explanation for the songbirds' apparent naiveté has been that songbirds, being denizens of forests, did not originally evolve with cowbirds. Cowbirds were once birds of open grasslands, and the opening of forests by settlers have enabled them to invade once forested tracts.

But Wilcove presents a disturbing recent find, which may offer a more sinister explanation for the songbirds' willingness to raise cowbird babies. Research indicates that if a warbler removes cowbird eggs, the cowbird would return and destroy the rest of the warbler's eggs, thus forcing the warbler to minimize its losses and raise at least one cowbird! This mafia-style enforcement of compliance, if confirmed, may be unparalleled in the annals of zoology.

With cowbird parasitism as high as 90% in some areas, Wilcove suggests that the very fact that songbirds persist may be due to large forest tracts like the Arkansas Ozarks in the USA, which may serve as 'net exporters' of songbirds to areas where they don't breed successfully. It is heartening to note, therefore, that Arkansas' forests serve in conservation of migratory songbirds not just in Arkansas but elsewhere as well.

The story of the grey whale should inspire anyone engaged in the apparently futile efforts to save migrating organisms. This nondescript whale migrates annually from waters off Baja California to Alaska and back. In the late 1800s relentless hunting decimated these itinerant populations. Whaling vessels zeroed in on once bountiful whale meat and blubber, which was used to extract oil. From one lagoon in the Baja alone, over 20,000 barrels of whale oil from 600 whales was harvested between 1858 and 1862. By 1930, just a few dozen were left in the eastern Pacific.

After concerted efforts by American and Mexican governments, not the least of which was the addition of the grey whale to the endangered species list in 1970—the species rebounded. Today, whale watching has replaced commercial whaling as a means of livelihood. Whale watchers pumped \$83 million into the economies of coastal communities in 1998 alone. So dramatic has been the turn-around in people's attitude toward whales that the whales seem to be reciprocating by their confiding demeanour. These days, a few wild grey whales allow themselves to be petted by tourists. Wilcove says, 'no one has come up with a compelling explanation for this change of behaviour on the part of the whales. I suspect they simply enjoy getting their heads scratched.'

But Wilcove is not as sanguine about the fate of another group of oceanic wanderers: the sea turtles. All seven of the world's species are endangered, with a future far more bleak than that of whales. Female sea turtles return to the very beach they were hatched years ago, despite having spent 'less than one-tenth' of their lives ashore. Evidence indicates that they either use magnetic fields or they literally smell their way to the beaches where they were born, to bury their ping-pong ball eggs in the sand. With beaches being subjected to rampant usurpation by resort-loving humans, they face the serious problem of habitat loss.

The text is interspersed with Louise Zemaitis's life-like line drawings of the various animals and the habitats they occupy, but the reader may still crave for photographs. After all, don't glossy pictures often go side-by-side with such fine writing? And that lacuna is perhaps the only drawback of this otherwise engaging and highly informative book. My ornithology students will find this a welcome change from the comparatively mundane prose in their textbook.

**- Ragupathy Kannan**

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*Wetlands International. 2006. Waterbird population estimates—fourth edition. Delany, S. & Scott, D. (eds.). Wageningen, The Netherlands: Wetlands International.*

Paperback (29.5 x 21.0 cm, with illus. cover), pp. i-viii, 1-239, innumerable photos (colour, by several photographers), maps (distribution), graphs and tables. Price. Not stated. Available from Natural History Book Service ([www.nhbs.co.uk](http://www.nhbs.co.uk))

One of the largest cooperative activities that birdwatchers undertake worldwide annually is participation in the International Waterbird Census (IWC). In the South Asian region this is known as the Asian Waterbird Census and is conducted in mid January. The data collected by this juggernaut exercise is mind-bogglingly humongous. 'The IWC now compiles data annually from over 10,000 sites in more than 100 countries,' and the work under review, 'provides the most comprehensive coverage yet of our state of knowledge of the sizes and trends of the world's waterbirds' (p. vi), filtering data from c. 50,000 hours of fieldwork and scanning over 600 publications (p. viii). During 2002-2004, in South Asia alone, an average of 600 sites were surveyed annually, recording c. 3,500,000 waterbirds each year, with more than 20,000 waterbirds being recorded at 59 different sites and 239 sites recording more than 1% of the biogeographic population of at least one species of waterbird (Li & Mundkur 2007).

This work hammers all this data into coherence and presents information that is relevant in several spheres. It indicates the state, in 2006, of 878 waterbird species divided into 2,305 biogeographic populations worldwide, comparable with data presented in similar earlier works (Wetlands International 2002), thereby indicating the plight of the earth's wetlands, as covered by the IWC. This is of great relevance in its micro- as well as macro-interpretations by individuals and

organisations. Moreover, it is a sobering graphic map staring in the face of governments, a map that unfortunately shows the pathetic condition of wetlands all over the world and our conservation efforts through the declines of such a large number of waterbird populations. "The state of the world's waterbirds is continuing to deteriorate and now 44% of waterbird populations for which there is data are in decline or have already gone extinct—but only 17% are increasing. This pattern of decline appears in all parts of the world but the situation is most alarming in Asia, where almost two-thirds (62%) of populations are in decline or extinct, and only 10% increasing," (p. vi). In focusing attention on what is known, it directs our vision towards the shadows, the unknown, to understand which we need to prioritise further research and surveys.

The main section of this work (pp. 23-217) is tabular in nature and comprises for each taxon, a range map, subspecies/population, breeding range and non-breeding range, Ramsar regions, population size, population status, 1% threshold for use in Ramsar Convention Criterion 6 and, notes. A cursory perusal of this section reveals more about what we do not know of waterbirds in India than what we do. There are species that are found either across the country, e.g., *Gallirallus striatus* (p. 121), or have a restricted range, e.g., *Amaurornis bicolor* (p. 130), for which there is no population data! There are range maps that do not show the accurate distribution of taxa, e.g., *Anser indicus* (p. 75), *Netta rufina* (p. 96) and *Limosa limosa* (p. 177), which are found much further south in the Indian peninsula than indicated. Admittedly, this may well be because the range maps cover the global range of a species and are reproduced from the *Handbook of the birds of the world* series (del Hoyo *et al.* 1996) that are now itself over a decade old. Hopefully, future editions of the *Waterbird population estimates* will be able to provide more updated maps and delineate boundaries of the different populations of species for easier interpretation. Also, I am not too sure about the "50-250" estimated population range of *Rhinoptilus bitorquatus* (p. 154), and think it is on the higher side.

Answers to all these queries and inconsistencies, of course, crave further coverage of sites, research and survey. Even after so many years of the AWC, I firmly believe that in India we've still got a lot of ground to cover. There are innumerable wetlands out there that need to be surveyed, including several large ones where coverage is inadequate. Indeed, if every country were to publish its own waterbird population estimates, it would strengthen the quality of data by retaining the levels of filtration closer to home and become a potent tool for conservation advocacy with local governing bodies. Such regional and global data compilations also remind us of the value of collecting count and observational data in a proper and consistent manner, and publishing them on a timely basis.

That said, I cannot detract the immense value of the work under review and recommend it wholeheartedly as a tool for research, advocacy and also, deeper introspection, for it is not just birds and other biological life that depends upon wetlands. We do too.

**- Aasheesh Pittie**