

In a tiny desert outpost, a tenacious ornithologist is fighting to keep open one of Nature's wonders – the greatest migratory bird highway on Earth. **Julian Cribb** reports.

# Flight path to peril



**Dr Reuven Yosef observing gulls inside the bird sanctuary in Eilat.** Eric Vandeville

Each northern spring an awesome aerial torrent of 500 million birds pauses at a tiny fleck of a sanctuary at the tip of the Gulf of Aqaba, en route from the heart of Africa to the vastnesses of Europe and Asia.

Many birds have flown non-stop from the Central Highlands of Ethiopia, devouring their own muscle and intestines in the 40-hour flight. When they sink to rest at Eilat, in southernmost Israel, they are at the very limits of their endurance. Without this stopover on their ancient migratory path, most of the birds would never complete their journey. Food from its lakes and vegetation is vital to rebuilding their strength for an onward trek that, in some cases, bears them as far as Wales or the Bering Strait.

For 15 years a stoic, courageous and grittily determined Israeli ornithologist, Dr Reuven Yosef, has fought with all the means at his disposal to keep intact this remaining claw-hold on survival for the world's dwindling migratory bird populations.

Flash floods, savage vandalism, a suicide bombing, landmines and relentless development are among the challenges he

has faced in striving to hold open this ever-constricting highway of the natural world. If it closes, ornithologists warn, a major route will be sundered and many of the 280 migratory bird species of Europe, Asia and Africa using it may vanish.

Dr Yosef's visionary International Birding and Research Centre, Eilat (IBRCE) gained worldwide recognition with an Associate Laureateship in the Rolex Awards for Enterprise. Developed from an old rubbish dump and lovingly restored to 64 hectares of lakes, wetlands, visitor facilities and natural vegetation to harbour birds, the Centre is today acknowledged as one of the world's ornithological wonders, inspiring projects as far afield as Kenya, Tibet, China, Mongolia and North America.

In the 1960s, Eilat, at the head of the Gulf of Aqaba, was recognised as the vital crossroads on the avian highway between three continents, a natural funnel through which the birds of Europe and Asia pour in millions on their way to winter feeding grounds in Ethiopia and around Lake Victoria. Of the three great migratory routes – over Gibraltar in Spain, across the

Straits of Messina and down the Rift Valley from Turkey to Kenya – Eilat bestrides the largest and most important.

A birding station was established there in the 1980s – but rapid change was coming. The sleepy coastal settlement of Eilat, hemmed in by the harsh Arava and Negev deserts and the arid mountains of Sinai, began to reshape itself as Israel's 'Gold Coast', a tourist mecca drawing visitors to the coral reefs and crystal waters of the Red Sea. Gradually the dry salt marshes fringing the sea succumbed to a concrete plague of hotels, promenades, marinas and gaudy attractions. A strip





Yosef holds a red-backed shrike. Billions of Eurasian birds stop at the salt marshes near Eilat. Eric Vandeville

of wasteland lying between the town and Jordanian border to the east, beneath the smoky thunder of low-flying passenger jets, became a rubbish tip. Nobody wanted it, except a keen-eyed Indian-born ornithologist, Reuven Yosef, who saw its pivotal significance to the wildlife of the planet.

Arriving in Israel as a 17 year old imbued with Zionist ideals, Yosef joined the Israeli Army and became an officer in one of its elite fighting units, the paratroops. In the heat of conflict, with bullets flying, he insisted his men treat wounded birds found on the field of battle. 'My men didn't necessarily agree, but they humoured me,' he recalls wryly.

Wounded and invalided out of the army, he took up studies as an aspiring ornithologist at Ben Gurion University and then at Ohio State University in the US, carrying out field research at the Archbold Biological Station in Florida, famous for the study of migratory birds. While there, he was invited to set up a nature reserve near Eilat that would

enhance the town's appeal to visitors.

Yosef was delighted, both at the chance to help protect bird migration in a world where it faced growing pressures from human activity, but also at the opportunities for scholarship the site presented – sampling each year an astonishing cross-section of the world's avifauna.

Of the 120 000 hectares of salt marshes that once sustained billions of birds on their migratory journey, only a few hundred remained. The land was poisoned by mining activities extending back almost 3000 years. The rest was a garbage dump, filled with heaven-knew-what. Raising money from friends and supporters, Yosef purchased 64 hectares, and with the help of local earthmoving contractors, effluent from the sewage works, fresh water from the local desalination plant and brackish water from the local saltworks set about creating several lakes – fresh and saline – and restoring vegetation.

Gradually the sanctuary became a welcoming haven to the exhausted

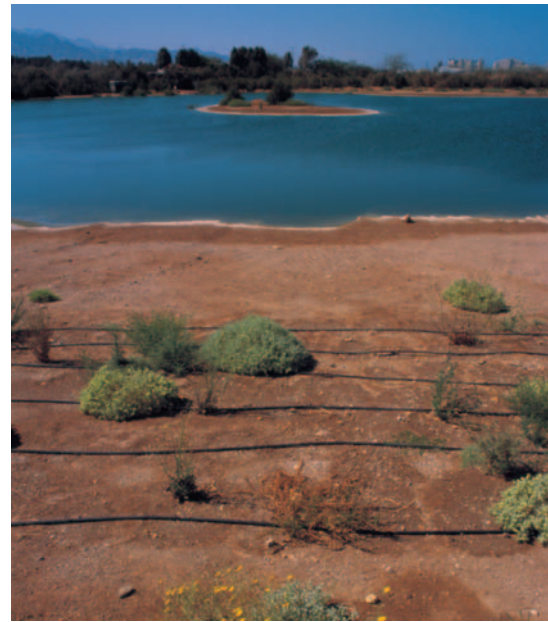
airborne travellers, offering seeds and brine shrimp to nourish and restore them. With the birds came scholars from around the globe to study the unending avian throng, 100 000 visitors a year to witness one of Nature's marvels and 60 000 wide-eyed schoolchildren to learn about a phenomenon that, without great care, their own children may never see.

Yosef's oasis also drew the eyes of predators – of the two-legged, human variety. Developers soon spotted a verdant area and pleasant lakes that lacked a concrete jungle; when their demands for this valuable new real estate were rebuffed, they turned to rough tactics. Anonymous threats came by phone. Vehicles and equipment were wrecked. Jenny, the Yosef family dog, was hung by her chain. One night the building used by the ornithologists to band and record the birds went up in flames. The reserve was ploughed up by an earthmover. Angry yet determined, Yosef resurrected his office using fireproof materials and restored the damaged landscape.





The booming tourist resort of Eilat. Unchecked development has threatened the local ecosystem. Eric Vandeville



Covering garbage with earth from construction, Yosef irrigates with partially treated sewage water. Eric Vandeville



The little green bee-eater. Eric Vandeville



A great grey shrike hunting prey. Eric Vandeville



Flamingos come to harvest the Centre's brine shrimp. Eric Vandeville

Greed and vandalism have stalked science at Eilat since the Centre began. Gates and fences were recently torn down and equipment stolen, including years of precious records. 'This is very directed. It isn't random or senseless. It has a purpose behind it,' Yosef says. 'We lodge our complaints with the police and then we hear nothing.'

Reuven Yosef may be a bird scientist, but he is also a warrior. He will not

yield his ground. 'The developers don't appreciate how precious this tiny piece of land really is. They say it is wasted on birds. They think birds can always go somewhere else. They'd rather see a string of hotels or a motocross speedway. They do not care.'

Despite flash floods and vandalism, still the birds come in their millions, both rare and plentiful species. But the discerning eyes of Yosef and his fellow

scientists notice disturbing differences. The Centre has gathered 24 years of data on bird migration, by trapping, measuring and banding thousands of individuals every year. Part of a major global project, the data is revealing changes in the birds' migratory patterns, weight and physical condition – indicators of the stress which climate change and human activity are exerting on the world's avian population.

As deserts spread, human land occupancy expands, climates warm and ocean currents change, the Worldwide Fund for Nature estimates that between 38 and 72 per cent of all bird species face extinction by the end of this century.

At Eilat, the passerines are fewer with each succeeding year. Many species are losing weight, raising concern for their ability to survive the ordeal of migration. Numbers of endangered birds like corn crakes and wrynecks are declining steadily.

Today the 64-hectare sanctuary represents a minuscule perch for half a billion birds to roost on twice a year, and Yosef has been in close negotiation with Jordanian authorities across the border who are offering an adjacent area nearly three times the size. All that holds the new project back, he says, is the half million dollars needed to develop it.



A squacco heron being released by Yosef and some of the IBRCE volunteers. Eric Vandeville

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*The Awards are presented every two years in Science and Medicine, Technology and Innovation, Exploration and*

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## Flyways to Australia at risk

Australian ornithologists, meanwhile, are also waging a fierce battle to keep open the fast-vanishing flyways of the world's migratory birds.

Just as in Eilat, Israel, development is threatening to bury the most vital stopover for birds which each year make the hazardous journey from the far north of Siberia to Australia.

Of the two most precious wetlands in Korea, Samangeum and Geum, the first has already succumbed to bulldozers and farm machinery. If the second – Geum – is destroyed, the curlews, stints, godwits and other species that have made the prodigious journey from the northern tundra to the fertile coastal wetlands of Australia for millennia may be gone for good.

The Australasian Wader Studies Group (AWSG) has joined Korean bird lovers to bring world attention to the destruction taking place, says Don Saunders of Bird Observation & Conservation Australia (BOCA).

'The destruction of migration routes and bird stopovers is a huge issue all around the world,' he says. 'Many of our birds breed in the tundra regions of the far north, but can't survive the winter there. For that, they have to travel to places like Roebuck Bay in WA or Western Port Bay in Victoria. To get here they need to refuel on the way – and that's where the wetlands of Korea are so vital.'



Bird-watchers record waterbird species at Western Port Bay. BOCA

Eighty thousand hectares of Korea's tidal wetlands were destroyed or redeveloped in the 20th century. In 2006 the destruction of Samangeum claimed a further 40 000 hectares. Tens of thousands of birds faced starvation following the closure of the last gap in the sea wall. Since then, AWSG members have documented a decline of 110 000 in the numbers of birds calling to feed on the rich life of the tidal mud flats. A 2008 report is expected to record an even more catastrophic fall.

Korean officials claimed the birds could easily relocate to the tidal flats of the Geum estuary. But the Geum flats, too, are slated for destruction. As a result, Australian and Korean bird lovers have joined forces to raise

local and international awareness of the tragedy unfolding – both for Korea and for Australia.

'We're still learning about the migratory patterns in and out of Australia,' Saunders explains. The pathway into Australia is broad, extending across Indonesia and Papua New Guinea, and impossible to monitor. Researchers must rely on observations taken at the birds' final destinations. BOCA has amassed an unbroken sequence of observations on Western Port Bay reaching back more than 30 years. The suspicion is fast growing that the observed decline is a man-made phenomenon, not a natural one.

If the migratory routes are severed, Saunders doubts any of the wading species will establish in Australia: their breeding grounds lie in the north and ours is merely an overwintering stopover. Many of our most beloved wading birds may simply farewell these shores, and that could have some significant consequences for Australia's ecosystems.

While the Australian Government, media and conservation groups battle with Japan over the slaughter of whales, the fate of millions of Australian migratory birds is ignored. Saunders thinks it's time we launched a similar diplomatic offensive on their behalf.