



COOLTOOL
Tracking Africa's migratory waterbirds

TEXT BY TIM DODMAN

It's a dilemma. How do we conserve migratory animals? How do we justify protecting a site that they may visit for only a few months of the year, or perhaps once every few years? And how important are protected areas to a migrant that spends much of its time on the hoof or wing? Without a doubt, migratory creatures, from wildebeest to whales, bats to butterflies and turtles to turtle-doves, present us with complex conservation challenges. No wonder there's an international convention – the Convention for the Conservation of Migratory Species (CMS) – dedicated to them.

Waterbirds include some of the most remarkable migrants. It's partly due to the astonishing distances they can cover: who can not be impressed by the Arctic Tern's annual round trip of up to 40 000 kilometres? (See also page 15 in this issue.) Satellite telemetry has given us some great insights in recent

years. We now know that Bar-tailed Godwits can make it from Alaska to New Zealand in just one mighty flight. The congregatory nature of many waterbirds is equally spectacular. Mauritania's famous Banc d'Arguin can support 2.5 million migratory waders at any one time – a swirling torrent of life on the edge of the Saharan sands.

It is therefore appropriate that migratory waterbirds have their own regional arrangement under the CMS: the African Eurasian Migratory Waterbird Agreement (AEWA). Fifteen years old last June, AEWA already has 26 African member countries and is a growing force for putting migratory birds on the map. But then there's another dilemma. Is the map good enough? (Or maps, to be precise.) In order to conserve migratory waterbirds we need to know where and when they go, and what they're going to find when they arrive. In short, we need maps supported by information that helps us see the whole picture, to understand the inter-connectivity of sites and the conservation needs along the whole flyway. The good news is that we now have something that can do just that – the Critical Site Network (CSN) Tool.

The CSN Tool is one of two major outputs of the groundbreaking Wings Over Wetlands (WOW) project. Just concluded, this collaborative initiative for migratory waterbirds and their habitats in Africa, Eurasia and the Middle East was financed by the Global Environment Facility, the German government, AEWA and other donors, and led by two worldwide



Above The Critical Site Networks for the two African-Eurasian populations of Red Knot displayed in the CSN Tool.

Left A mixed flock of Red Knots and Dunlin rest during their migratory cycle.



GRANT ATKINSON

NGOs, Wetlands International and BirdLife International. The project had three main components: developing the CSN Tool, capacity building and enhancing communication.

A key capacity-building output is the Flyway Training Kit, a major resource that displays all main aspects of flyway conservation through technical modules, training formats and PowerPoint presentations. (It's available free online – in several languages – if you can't lay your hands on one of the impressive 2.5-kilogram folders.) The approach was hands-on, with 11 demonstration projects throughout the regions covered – the range of sites alone illustrates the international aspect to flyway conservation. One site was South Africa's Wakkerstroom wetland, where BirdLife South Africa has developed local capacity for managing wetlands and at the same time promoted viable income-generating activities to encourage the equitable distribution of tourism revenue.

The CSN Tool functions through an open-access interactive web portal, which integrates a large amount of information on approximately 300 waterbird species, the Critical Sites upon which they rely and the flyways that they use. Although developed primarily for use on migrants, the tool covers all waterbirds of Africa, Europe and the Middle East. Critical Sites are those considered essential to the long-term survival of one or more waterbird populations at any life stage. The tool will support site managers, national authorities and international agreements, as well as researchers and enthusiasts. Its flyway

reach is enhanced by its availability in Arabic, English, French and Russian.

For an example of its practical application, why not start in Botswana, a country of regional importance for waterbirds, with its magnificent Okavango Delta, extensive Makgadikgadi Pans and numerous ephemeral wetlands, ponds and dams? If you go online to <http://csntool.wingsoverwetlands.org/csn/default.html> you will find a map with an options menu on the right-hand side. You can search species or sites, and there are also choices for reports or help. If you go to Sites and choose the Okavango Delta, you're taken to a location map with information about the site on the right. You can choose to look at the Critical Site boundary (shown in pink) or the Important Bird Area (IBA) position (orange). If you pick National Protected Areas, you'll see a great swathe of land in red, while it's green for the Ramsar Sites. Each of these has links to further details on the Protected Planet and Ramsar websites, which provide much useful information.

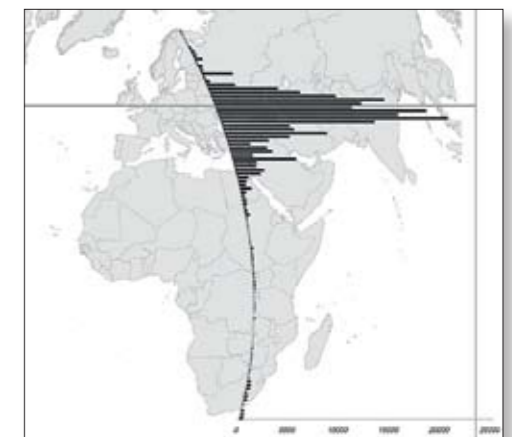
You can also see the positions of all International Waterbird Census (IWC) sites or African Waterbird Census (AfWC) sites in Africa. Botswana has participated in the AfWC since 1991, and BirdLife Botswana is soon to publish a 20-year review of this impressive set of counts. Seeing the count sites so easily within the CSN Tool helps put them in perspective and shows at a glance their location in relation to other count sites in the region.

There is also a really useful function for conservationists and site managers – the Critical Site species list. A simple click >

Opposite The CSN Tool enables us to monitor species such as the Wattled Crane, which is listed as Critically Endangered in southern Africa.

Previous spread Migratory waders in the Bijagós Archipelago, Guinea-Bissau.

Below Graph of total IWC counts recorded per degree latitude.



DAVID KLEIN

and you have a table listing the recognised populations of all species for which the Okavango is of 'critical importance'. For each population you can see minimum, maximum and mean counts, the units (breeding pairs or individuals) and the percentage population. This last one's important as it shows the percentage of each population that the Okavango has been known to support. So for their respective populations, that's six per cent for the African Pygmy-Goose, 20 per cent for the Wattled Crane and 50 per cent for the Slaty Egret. You can also see a time-series chart for each species based on AfWC counts, then a link to that species' page.

That, of course, is the other option at the site's opening page: to do a species search. If you choose Slaty Egret, you can see the species' range map and population boundaries, with different colours highlighting breeding and non-breeding areas. On this you can overlay Critical Sites, Ramsar Sites, IBAs and protected areas. And for Slaty Egret, it's encouraging that many of the Critical Sites have some measure of protection. You can also see locations of all count sites where Slaty Egret has been recorded during the AfWC, and get the population estimate (3 000 to 5 000 birds) and one per cent level (40). There are external links to AEWa and BirdLife Species Factsheets, which include detailed information on species ecology derived from more than 2 000 references (a great resource in itself), as well as to the Global Register of Migratory Species.

In a nutshell, you can access just about all the relevant information on a chosen species, site or area and can even generate reports based on a range of selected categories. For example, you can view all sites where Globally Threatened herons and egrets occur, then bring in other layers, such as threats and habitat. Looking at threats, you'll see that at least 46 per cent of Critical Sites for migratory waterbirds in Africa appear to have little or no protection. That figure is even higher for the Middle East (61 per cent) and Central Asia (58 per cent). With regard to the protection status of Critical Sites for Globally Threatened waterbirds, 31 per cent of sites in Africa are protected, whereas 43 per cent have little or no protection. This is perhaps a best-case scenario, as a large number of Africa's protected areas are under-resourced and lacking in actual conservation measures.



TIM DODMAN

This practical interactive tool was developed by a technical team of the World Conservation Monitoring Centre, Wetlands International and BirdLife International, who achieved the tricky feat of making four global databases – the World Bird Database, the IWC database, the Ramsar Sites Information Service and the World Database on Protected Areas – talk to each other and share information.

So what are the limitations? The main one is coverage, and this is where African birders can help. Some gaps were identified during WOW workshops (select 'Gap sites' on the CSN Tool welcome page). The coverage imbalance is well illustrated by a graph showing the number of IWC counts per degree latitude (page 63, below). Clearly, much of Africa is still poorly covered, although bear in mind that extensive sites such as Zambia's Kafue Flats may count as only one IWC site, whereas an equivalent area in Europe may contain many smaller sites.

In sub-Saharan Africa, South Africa has the best coverage, as the Coordinated Waterbird Counts (CWAC) have been operating since 1992 at 400 wetlands across the country. CWAC serves as an effective long-term monitoring tool for South Africa and beyond, and has been submitting data to the AfWC since it began. The CSN

Tool now helps to put the CWAC data into an international perspective. If you use the CSN Tool to look at Red Knot *Calidris canutus*, for instance, you can quickly see the position of South Africa in the flyway of the *canutus* population, which breeds in the Russian Arctic and migrates along the East Atlantic Flyway (page 63, above). We can also note that South Africa has one of Africa's five Critical Sites for this migratory wader – the West Coast National Park and Saldanha Bay islands, which include Langebaan Lagoon. The other four sites are in West Africa, where the bulk of the population spends the northern winter. Although Langebaan has fewer birds, its importance at the far end of the flyway is great. In order to conserve this cosmopolitan wader effectively, we need to ensure that such sites remain productive and continue to offer a safe haven into the future.

One of Africa's major gaps in coverage is South Sudan. The Sudd Wetland Ramsar Site extends to 57 000 square kilometres, while other Nile Basin wetlands include the Machar Marshes (5 000 square kilometres) and Lotilla/Veeno swamps (9 000 square kilometres). These wetlands are important destination and stopover sites for many Palearctic migrants, but they are also critical for intra-African migrants such as the African Openbill. The

Sudd is Africa's most important site for two Globally Threatened waterbirds, the Shoebill and Black Crowned Crane. Civil unrest in the region has put wildlife research on hold since the 1980s, but recent aerial reconnaissance surveys indicate that Shoebills are still found in reasonable numbers in areas not surveyed for decades. Single birds and pairs stand firm on raised mounds, like noble grey statues amidst a seemingly limitless expanse of green swamp and swaying floodplain.

Further north along the Nile, wetlands south of Khartoum are critical for many Palearctic-breeding ducks (including the Ferruginous Duck whose three populations are all in decline), yet we just don't know enough about them. Um-Gar is one such wetland of the White Nile, a remote, unprotected location known to local hunters and not yet an established count site. The CSN Tool shows just a sprinkling of count sites along an immense river that we recognise to be a vital migratory corridor.

This is where the CSN Tool fits nicely with the Flyway Training Kit. Here are areas crying out for waterbird-monitoring programmes and site inventories, activities that require teams of competent people. There is thus a need for capacity building – field training, institutional support, resources... Training courses were held in 2010 in both Sudan and South Sudan, but there's a long way to go. Peter Minasona is the AfWC National Coordinator in South Sudan and he knows that there are challenges ahead. Nevertheless, he is keen to address these gaps and hopes to establish a wetland training centre for the Sudd.

We can thus use the tool constructively to highlight gaps and help us to prioritise future monitoring efforts. Further, by concentrating on the most important sites along the flyways and their protected status, we can use the tool to prioritise conservation efforts and lobby for improved site protection. The tool can also help us

to focus limited conservation resources on building a clearer picture of the chains of critical sites that are necessary for migratory waterbirds to complete their annual cycles, and on improving the protection of these sites.

In the flyway approach to conservation we all need to think big and understand how our local sites are pieces of a global jigsaw – take away one piece and the picture will never be complete. We need to share resources and responsibilities to conserve migratory waterbirds and the sites on which they depend. We now have a great tool to help us, so let's use it! □

Opposite The Nile River spills out into the vast Sudd wetlands of South Sudan, with its lakes, swamps and floodplains.

Below The Shoebill, a flagship bird of Central Africa's swamps and marshes.



JESSIE WALTON

HOW YOU CAN GET INVOLVED

- Use the CSN Tool: <http://csntool.wingsoverwetlands.org/csn/default.html>. (You can read or download the User Guide from the Help page.) Let us know about any sites not yet included, other information you think the tool should capture, or improvements you feel could be made. Contact the technical team through vicky.jones@birdlife.org
- Get involved in monitoring schemes by contacting your AfWC National Coordinator or national IBA monitoring focal point. Find out who they are by contacting szabolcs.nagy@wetlands.org (AfWC) or ademola.ajagbe@birdlife.org (IBAs).
- Contribute to gap-filling surveys or support this important work. Contact szabolcs.nagy@wetlands.org
- Have a look at the Flyway Training Kit: <http://www.wingsoverwetlands.org/flywaytrainingkit>
- Why not organise a training course in your country? For advice, contact taj.mundkur@wetlands.org