

The BTO Magazine for Ringers and Nest Recorders



# LIFECYCLE

SPRING 2015 ■ ISSUE 1

BREEDING SEASON RESULTS ■

MONITORING HOUSE MARTINS ■

STUDYING RING OUZELS

## SAND MARTINS

A close-up look at  
artificial banks



**BTO**  
Looking out for birds



## A bankable idea

The new 150-hole Sand Martin bank at Attenborough Nature Centre, by Nottinghamshire Wildlife Trust. Inset: an adult at a hole entrance, by Chris Galvin.

Sand Martin is a popular RAS species, with 15 active projects, but monitoring natural colonies for NRS has always been relatively challenging. The increasing number of artificial banks, however, is providing exciting new opportunities. **Colin Hewitt**, a member of Rutland Water Ringing Group, takes us through the first three years of his group's combined NRS and RAS project at a new artificial bank.

**Rutland Water's newest** Sand Martin bank was built in 1999 and, up until 2011, members of the ringing group had been catching birds and ringing broods on an ad hoc basis. Then, in late 2011, inspired by a nest recording course at Hindhead (and a love of systematic data collection – yes, I should get out more), we decided to turn our ringing activities into a RAS project and begin monitoring the nests for NRS.

### TUNNEL VISION

**Nest recording and** pullus ringing is undertaken entirely from a corridor inside the bank, where the back of every nest tunnel is accessible. We begin each session by dividing into pairs and then inspecting the contents of all 347 tunnels, scribing onto dedicated recording sheets that have been designed to make the process as quick as possible. Each hole inspection takes less than 10 seconds and we find that adults and even ready-to-fledge chicks just stand in the pipe and watch – presumably they don't expect predators at the back of the tunnel and so are not sure what to think!

Once every tunnel has been inspected, the recording sheets are checked for broods that need to be ringed. When a brood is removed from a tunnel, the entrance is blocked with a ball made from supermarket bags to prevent the adults from finding the nest empty. Attached to the ball is a long tail of fabric that is made to dangle out of the open door of the box. This, and counting in all the 'blockers', ensures that none are ever left in the tunnels.

Ringing Sand Martin chicks is a messy business. Handled nestlings appear to have a near inexhaustible ability to 'empty' themselves, rendering recording sheets and sleeves unsuitable for the kitchen table. If that doesn't bother a ringer, the flightless, blood-sucking hippoboscids often do; late in the season, up to a dozen of them can drop off a large chick and disappear up one's sleeve, only to reappear days later.

### RAS PROJECT

**Having been catching** for several years with two 18 m nets, one either side of the bank, we were fairly confident about

### BUILD YOUR OWN

Larger banks built with external funding are a great option for reserves, but people have had just as much success with smaller 'DIY' banks. Edward Cowley of the Sand Martin Trust built his first artificial bank in 1994 and has been submitting nest records to the BTO since 2000. In 2009 he published '*Sand Martin artificial breeding sites*', a practical guide to building and maintaining a colony. Contact Edward at: [admin@sandmartintrust.org.uk](mailto:admin@sandmartintrust.org.uk)

Inside the bank at Rutland, and a Sand Martin nest, both by Colin Hewitt



**INSIDE THE BANK**  
The interior corridor of the Rutland Water artificial bank with inspection hatches lining the walls and a Sand Martin nest as seen from an inspection hatch.

getting enough birds for RAS, but even so we decided to experiment. For the first two seasons – 2012 and 2013 – we ran three evening sessions to target adults and any juveniles that we had not already ringed as chicks. In 2014, we tried a single early morning session, timed for when most pairs had small chicks in order to catch the adults only. We found this latter approach was more successful (see table), though it came with the challenge of setting nets up in front of the holes before dawn. We had four people erect the nets silently in the dark and then at dawn the rest of the team approached the bank, encouraging the birds to leave the holes.

We normally have a team of five people operating a net: a bag distributor, three extractors and a carrier who shuttles between the net and the ringing station. When we were catching both adults and juveniles, we separated the birds and then ringed the adults first so that they could

get back to their nests. Most mist-netting sessions last only about 30 minutes, as the birds quickly become aware of the nets.

**SETBACKS**

The artificial bank is surrounded by an anti-predator wall and until 2014 we saw no evidence of mammalian predators. Last season, however, nettles grew up unnoticed against this wall and when we turned up for a mid-season nesting session we made a grizzly discovery. Thirty-two nests, containing 60 chicks, 64 eggs and 17 adults, many of which showed no signs of injury, had been lost to rats, one of which was caught on a nest camera. Among the dead birds was an adult male, three days short of six years old, which had been ringed at Rutland as a nestling in 2008, retrapped at Rutland in 2012 and caught again in Spain in 2013. Obviously, we’ve since stepped up our gardening rota!

**Numbers of nests monitored and birds ringed at Rutland Water Ringing Group’s Sand Martin study colony from 2012 to 2014**

	Nest records	Chicks ringed	Juveniles ringed	Adults ringed
2012	324	819	90	112
2013	260	669	174	57
2014	383	1,027	35	125

**WHAT NEXT?**

**Our aim for** the past three years has been to come up with an efficient, integrated way of monitoring nests and ringing both adults and chicks for NRS and RAS; after three seasons, I think we can say we've been able to do this consistently. Now we are beginning to look at what analyses we might be able to carry out on our own data, the first aim being to compare the colony nest productivity and adult survival figures with BTO national trends. One obvious complication is how we take account of rare predation events, such as the one in 2014. We're also interested in supplementary studies we might be able to carry out alongside our standard surveying. Here are just a few intriguing observations we've made:

- At the start of the season, the holes in the top three rows fill first and the bottom row is hardly used at all, even though the bank was deliberately built with a bottom row much higher than that of an older design to try to make it more attractive to the birds.
- Holes on the top row in particular often see three successful broods reared, but to what extent are these by triple-brooding parents as opposed to late broods produced by other pairs? The rat predation event showed us that top row boxes are soon reoccupied if they become vacant during the season.
- It's not unusual to find a fledged juvenile from a different tunnel sitting with a brood of chicks (and tolerant of being lifted up to have its ring read!). A box fitted with a camera revealed two adults, six flightless chicks and two full-grown juveniles in a single box after dark.
- The variability of chick sizes within broods has often appeared to differ from the expected pattern of five similar-sized chicks and a runt, and this was confirmed in 2014, when chicks were weighed as part of a postgraduate student's research project. Not only were some chicks as heavy as 21 g (typical adult 14 g), but within some broods individuals varied by more than 8 g.

**APPLEGARTHTOWN WILDLIFE SANCTUARY**

**Although he gained** his first permit in 1955 and continues to ring a wide range of species [see his tips on netting House Martins, page 25 – Eds], one of Bobby Smith's main interests is a Sand Martin colony in an artificial bank near Lockerbie in Dumfriesshire. On retiring from tenant farming in 1984, Bobby persuaded his landlords to set aside 0.8 ha of boggy ground for the creation of a small nature reserve, Applegarthtown Wildlife Sanctuary. Bobby then built a 127-hole bank on the site in 1989, one of the first in Britain & Ireland. Originally it lacked a corridor for accessing the nest tunnels from behind, something Bobby rectified in 1994. In 26 years of continuous monitoring, he and members of North Solway Ringing Group have sent in over 3,000 Sand Martin nest records and ringed more than 15,000 pulli. As well as providing data to BTO, Bobby has advised on the construction of many other artificial banks in various countries.



Bobby Smith, by Brian Smith

**A NEW BANK AT ATTENBOROUGH NATURE RESERVE, NOTTS**

**Funded by the** Heritage Lottery Fund, Attenborough's Sand Martin Nesting Bank was completed in March 2014 and has 150 nest holes available. Because of strong prevailing winds at the site, the holes are actually provided on three faces at different aspects to maximise nesting potential under different environmental conditions.

There is even a bird hide built into the bank that is open to visitors – we believe this may be a first for Britain & Ireland. Like other banks, the nesting chambers can be accessed from inside the wall and in the bank's first season South Notts Ringing Group monitored 34 active nests in 37 occupied chambers. **Tim Sexton**, Attenborough Nature Reserve.

So many potential study questions! As with any group or project, we will have to ensure that what we do doesn't detract from our core data collection for NRS and RAS, but even so we are now looking into the possibility of installing more nest cameras to capture nesting behaviours, and using PIT tags to identify individual adults on nests. We'd also quite like to find that rat!

**Acknowledgements:** Colin Hewitt would like to thank the Rutland Water Ringing Group for its enthusiastic support of the Sand Martin project. Thanks too to all the helpers, trainee Conservation Officers, students and reserve staff (particularly Lloyd Park), for all their hard work on the project and its supporting infrastructure.

**HAVE YOU SEEN THIS RAT?**

A nest predator caught in the act on one of the cameras.

