



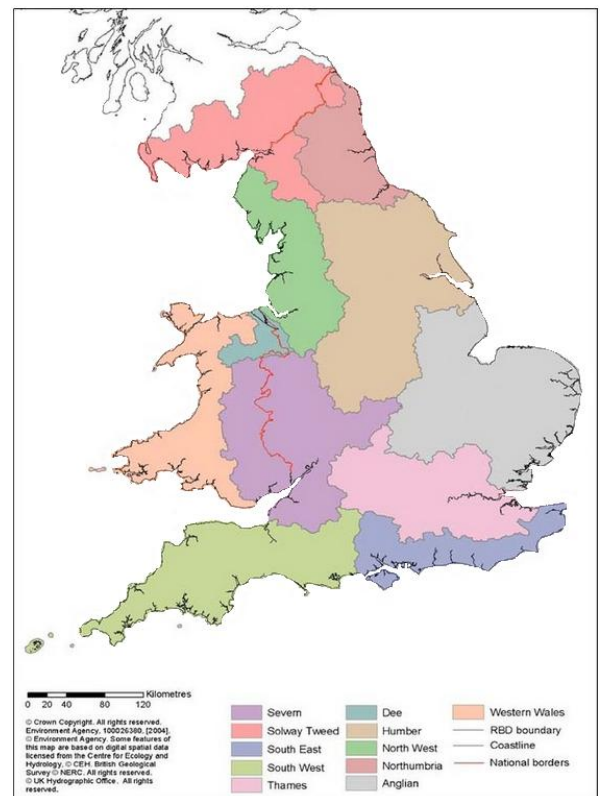
Waterlife Recovery Trust



NEWSLETTER 1: January 2023

New year, broader horizons

From its inception just over three years ago, the long-term aim of the Waterlife Recovery partnership has always been a mink-free GB. Not unreasonably scoffed at by some, and a dream of dubious feasibility for even the most starry-eyed among us, the idea was to first see what a coordinated campaign could achieve in East Anglia, and then decide whether to expand the work geographically. The Waterlife Recovery East project (WRE) has since exceeded even the most optimistic predictions, and its success quickly attracted interest from afar. Today, partner organisations and volunteers are trapping mink and seeing native wildlife rebound from Yorkshire to Sussex, and more counties are signing up at pace. In anticipation of this, the WRE Steering Group decided in 2021 that a new charity should be formed to offer coordination and leadership, and seek funding, for a national campaign. The Waterlife Recovery Trust (WRT) was granted charity registration in 2022, and is now fully operational. The start of a new year therefore seems a good time to seamlessly transition the WRE newsletter series into that of the Trust, simply reflecting the fact that the partnership now covers a much larger area than just East Anglia. Within a few months, we will be active across a quarter of England.



WRT will seek to provide unifying coordination across the country, but regional structuring will be necessary - this will, after all, be by far the largest invasive species eradication campaign anywhere in the world. Since mink are semi-aquatic and use rivers for travel, river basins offer a sensible way to sub-divide Great Britain into manageable units; few mink should cross between them. There are eleven such basins across England, Wales and southern Scotland (see map). WRE is pretty much covering the Anglian river basin now, and partners are already active in the Humber, Thames and South East basins. We also advise conservation groups making inroads into their mink populations in the Severn, Northwest and Northumbria basins; suddenly our island doesn't seem quite such a daunting challenge after all!

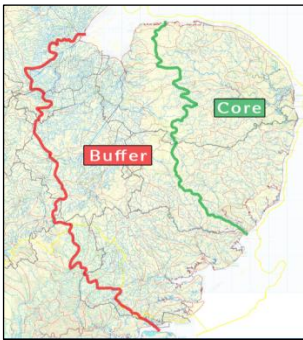


Graham Catley

Mink with water vole at Alkborough Flats, North Lincs. This is one of the new sites to have joined the WRT partnership recently.

The expanding Waterlife Recovery Trust family

Such has been the rate of expansion of our work that it is easy to forget how much has changed in much less than four years. In that time, patchy mink control in parts of East Anglia, mostly using clay pads to detect mink before a trap was set, has been transformed into a coordinated eradication campaign using almost 1,000 continuously active smart traps from the English Channel to the Humber. A small partnership that started very tentatively has grown in size and understanding of the task at hand, now confident enough to seek to convert unbelievers and show them the light. Yes, something approaching evangelical zeal is hard to escape once you've seen the results of joined-up mink trapping.

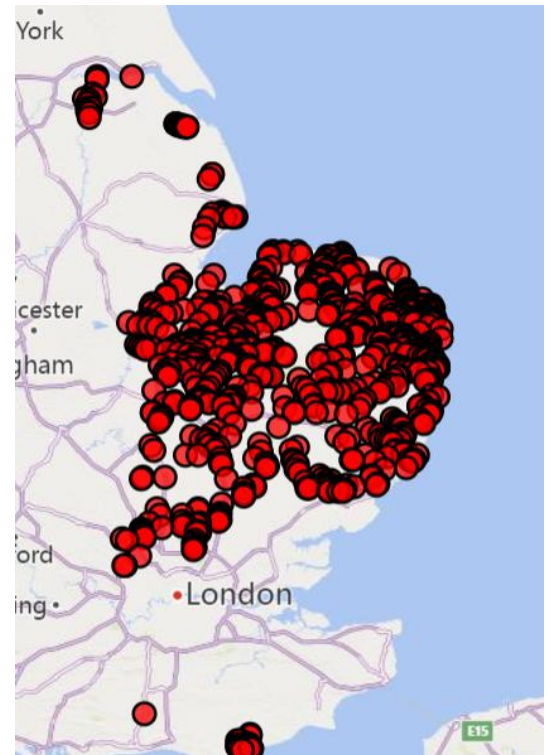


The genesis of all this was the WRE project area, which comprises two parts - the Core Area and the Buffer Zone (see map). The Core Area covers all but the western parts of Norfolk and Suffolk, and the Buffer Zone forms a protective blanket that takes in the rest of Norfolk and Suffolk, plus most of Essex and Cambs and small parts of Herts, Beds and Lincs. Sparsely trapped at first, W Norfolk, Cambs and SE Lincs soon benefitted from initiatives by numerous IDBs (Internal Drainage Boards) and a farm cluster led by WRE Steering Group member Joe Martin. More recently, the Greater Lincs Nature Partnership has

coordinated the spread of smart mink traps across chunks of central and N Lincs, and has now been joined by the North Lincs Council, taking us to the Humber. On the north side of that river, the RSPB is protecting its Humber Reserves with smart traps, and the Yorkshire Wildlife Trust is similarly active in the East Riding. There's then a bit of a gap before we reach the realm of the Durham, Tees Valley and Northumberland Wildlife Trusts, whose Naturally Native project is making real progress.

Meanwhile, to the west of the WRE project area, the Bedford Group of IDBs has recently signed up to deploy a substantial number of smart rafts in Beds and Bucks, and the Herts and Middlesex Wildlife Trust is now operating an even larger network across those counties. Our westernmost outpost is operated by Mark Wilson, who valiantly maintains traps west of Birmingham, patiently waiting for new WRT partners to close the gap between him and us. Northants and East Midlands, anyone?

Very little was happening south of the Thames a year ago, but a farm cluster north of Pevensey in East Sussex changed all that, and has confirmed that their area was indeed a mink hotspot (though is much less of one now). To their west, in



Distribution of smart traps operated by WRT partners and registered on the central database in Jan 2023. We expect the blank areas in Essex and Kent to be filled in 2023.

mid-Sussex, Knepp Estate has started on the road to its goal of a mink-free Adur & Arun catchment. To their east, in Kent, the recent enthusiastic engagement of farm clusters, landowners and various large organisations promises to bring about a renaissance for water voles and ground-nesting birds, especially, in this calendar year. The only questions now are whether funders can match their vision, and manufacturers of smart trap components can keep pace!



Pioneering rewilding at the Knepp Estate in Sussex.

Genius genetics

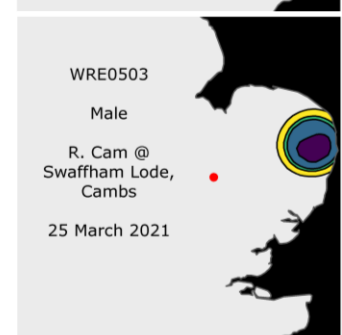
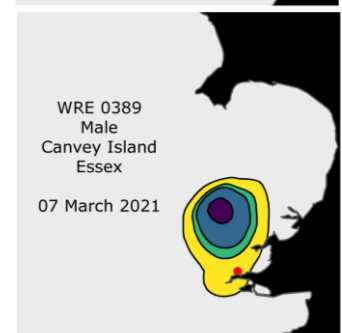
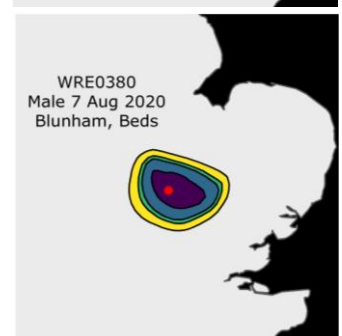
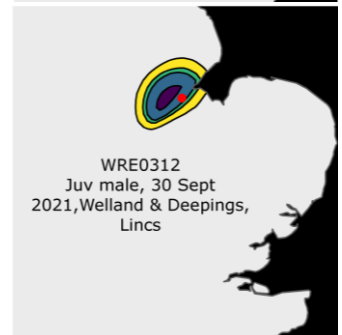
WRT Trustee Prof Bill Amos, with the help of lab technician Angela Trowsdale and funding from Natural England, has in recent months developed and improved what can be learned from the DNA of mink we capture or find dead. One of the crucial things we'd like to know is where each animal originated. This helps us understand how far the various age- and sex-classes travel - a vital tool in managing the eradication operation most effectively and efficiently.

Bill explains his approach:

The UK has a wonderful diversity of regional accents. If you meet someone in Norfolk with a strong Geordie accent, it is very unlikely they grew up where you met them. Similar patterns are present in our genes. The genetic patterns are usually hidden but can be uncovered in any species, including mink. I have developed a method that involves systematically moving around southeast England. At each point in this tour I assess the local genetic characteristics of animals, weighting the contribution of animals caught nearby more than those caught further away. I call this a genetic map. To find out where a given animal comes from, I temporarily remove that animal from the database, along with all its closest relatives, and then construct a genetic map. Using this map I can then calculate the probability that the focal animal came from any point across the entire region, plotting this as a series of contours, with dark blue indicating areas that are very likely, green less likely, yellow unlikely and white areas that are genetically very different. In each plot, the location the animal was caught, indicated by a red dot, can be compared with its likely genetic origin. Most animals have a genetic origin close to where they were caught, generating a bulls-eye pattern centred on the red dot: most animals stay close to where they were born. Occasionally, the red dot lies some distance from where the animal fits best, indicating that the animal has travelled away from where it was born.

Using this methodology, Bill has produced a map for each of the nearly 1,000 animals he has now genotyped from ear samples he's been receiving from WRT partners and collaborators. A sample of the various patterns is shown here. Though most of the red dots are within the bulls-eye, look at the two lower maps - males caught during the mating period seeking to sow their wild oats some considerable distance from where they were apparently born.

In many ways, it's the movers that are of the greatest interest to us, because they are the animals that will recolonise an area freed of mink at great cost, and ultimately they are the ones that will tell us when it would be safe to remove traps a certain distance behind the trapping front line. We will now pay particular attention to this relatively small minority of mink, seeking more information about where they came from. Meanwhile, these genetic maps become more accurate with every mink sampled; all trappers reading this newsletter have a part to play in this ground-breaking research. Even if you can't freeze your animals for later examination and sampling, you can take a small skin sample and send it to Bill. Instructions on our website.



News from around the WRE region

Great strides have been made in **Lincolnshire** in recent months, with new WRE partners establishing traps in the north of the county, especially. Catches have been substantial here, simply because trapping effort has been very limited until now. Meanwhile, Internal Drainage Boards in the very south of the county have clearly removed the vast majority of their mink over the past two years, and those a little further north and east are still in the first flush of youth - catching mink at a steady pace. Lincs makes a really interesting case study because, in contrast to neighbouring Norfolk, its mink population was probably at carrying capacity until two years ago, so we are steadily learning how many mink existed here at the start, and how much time, and how many traps, are required to knock the population down to Norfolk-esque levels.



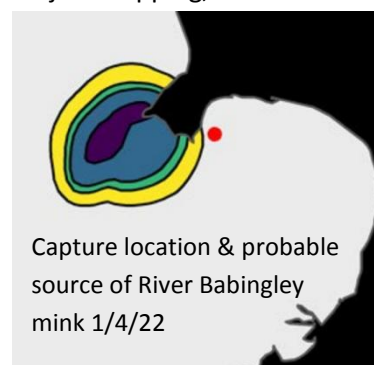
Where's the entrance? Mink on the tunnel of an old-style wooden raft, as seen by the nearby trailcam.

Talking of which, **Norfolk** has ended the year with two significant changes, **Simon Baker** writes; mink numbers in the county are now at very low levels indeed and the Norfolk Mink Project (NMP) has ceased to exist, with mink control in Norfolk passing seamlessly to Waterlife Recovery East (WRE). The change to WRE is, in practice, mink control carrying on largely as before, with the same people and partners involved but now as part of a larger organisation where we can 'raise the bar' on what we are able to achieve. This is not to lessen NMP 's achievements, which are really something to celebrate. Mink are now scarce because of all that the project, its volunteer trappers and partners have achieved over the years. Since trapping started on the River Wensum back in 2003, we have

together removed 1690 mink from the county and saved the lives of countless native animals. It is a record that we can all be proud of, and it has now allowed us to think about removing them completely; WRE is able to build on the foundations laid by the NMP.

In the first 3 months of 2022, 32 mink were caught in Norfolk, and then none until a female near the Waveney just before Christmas. Nearly 9 months without a mink being caught in the county despite 377 smart traps active – unheard of. However, we know from public reports that a few remain and Stephen, Karl and two fantastic volunteers (Joe and Tony) have started adding lure to all these traps ready for the mink mating season – a frisky mink just can't resist a whiff of anal gland! Two females have so far been caught this year, one at Denver Sluice in the west, and the other near Aylsham a few days after Stephen Mace re-lured the trap. As we caught no dispersing young in 2022, we have been wondering if the males have been removed completely and the few remaining females were unable to breed. We anticipate a few more captures before the end of the mating season (late March) and await the trapping results with great interest! The implications are huge; if it is possible to remove virtually all mink with just trapping, over an area the size of Norfolk, it makes nationwide eradication a real possibility.

As numbers of mink in Norfolk near zero we need to give more support to preventing immigration and that is another reason for moving away from purely county based control. WRE is also well placed to foster research that needs to draw on a large geographic area to help us answer questions like, 'where on earth did that one come from?'. One such was a female caught rather unexpectedly on the R. Babingley on 1 April 2022. Tony has already enthused about the exciting genetics results that Bill Amos has started to develop. They indicate that this animal was probably born in the western corner of the Wash, probably in the River

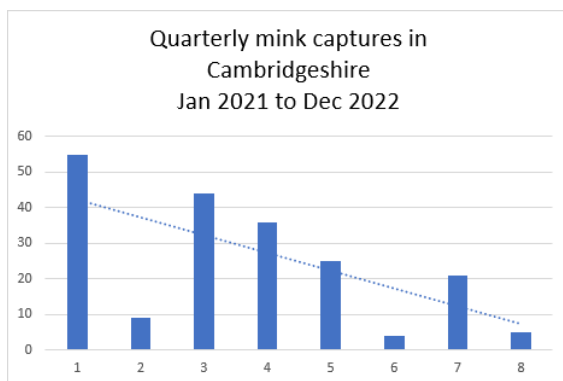


Capture location & probable source of River Babingley mink 1/4/22

Welland catchment, and in all probability moved round the Wash until she reached the mouth of the Great Ouse, then into the Babingley and finally into one of our traps and a meeting with Project Officer Karl Charters.

We are now entering an exciting new phase, with Norfolk an exemplar of what can be achieved by 'Citizen Scientist' volunteers and great partners. Thank you one and all for what we have achieved so far, but there is still more to be done and these Newsletters will keep you in touch with all the mink news in Norfolk and beyond as we move forward.

After a quiet period in **Suffolk**, with no captures since April 2022, three mink were caught in the river Lark catchment in November and December, writes **Alice Wickman**. Sightings were reported over the summer, but traps in the area stayed empty. However, one month after a site check and a scent-lure refresh, the first mink was caught. The second and third soon followed. We have been increasing the number of traps in the river Lark catchment, in case there are more in the area, as well as filling other gaps in the Suffolk trap network. The Suffolk Wildlife Trust is passing most of its traps to the Waterlife Recovery Trust over the next few months, and WRT welcomes five new Project Officers for this task - Penny Hemphill, Nick Oliver, Alex Moore, Mark Thackstone and James Coleman. Penny is known to most Suffolk volunteers as the person who built and coordinated the county's trap network for many years, working closely with Nick.



Mink in **Cambridgeshire** are now few, and pretty much confined to the west of the county, adjacent to counties with little trapping effort. The graph shows the catch over the past two years; the downward trend is clear, despite seasonal differences.

Essex currently has poor trap coverage, so the abundance of mink here is not well understood, but traps in the northwest of the county have been busy recently, so we know there's work to be done. New funding should bring a welcome influx of smart

traps over much of Essex in 2023, thereby plugging an important gap in coverage across the region.

Help needed, please

The ground-breaking conservation work carried out by WRT and its many partners is evidence-led, which means that it's heavily dependent on information collected and uploaded to our central database. That's how we can quickly find out, say, how many female mink were caught in Sussex in December 2022, and how many trap-nights of effort were needed to catch those mink. And that's how we can instantly print out a map of all active traps in Norfolk, or Suffolk, or Lincs. As the operation expands, so does the need for accurate and reliable data entry, and we now need help with this. Can you, or someone you know, help?

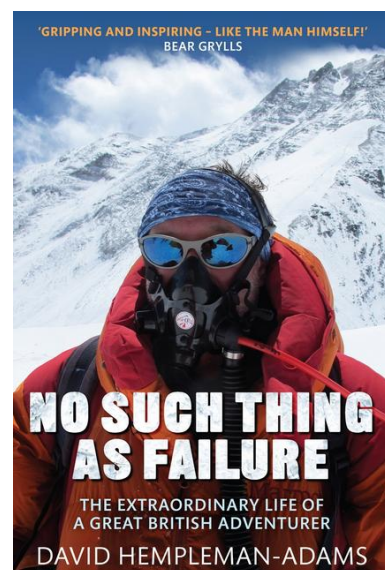
We're looking for one or more people who can spare time most weeks to take info from volunteers or staff and upload it using a laptop or desk-top at home. All necessary training will of course be provided. Hours can be very flexible and we can even pay! The main requirements are attention to detail, some basic familiarity with spreadsheets (eg Excel) and a half-decent internet connection. If you'd like to join the WRT team, or have any questions about what's involved, please contact the WRT Vice-Chair, Simon Baker: simonbakerecol@gmail.com.

WRT's first Patron

As a new charity in a field of conservation unfamiliar to most people in Britain, yet one in which public participation and support is key to success, WRT needs ambassadors who can raise its profile. The ideal ambassador would arguably be someone who is highly respected, passionate about the countryside, has an indomitable can-do attitude and enjoys taking on monumental challenges that most think are impossible (barking mad, even). Someone just like Sir David Hempleman-Adams KCVO, OBE, KStJ, DL, FRSGS - whose life was described in a book entitled '*No such thing as failure*'. For the first person in the world to climb the highest peaks on all seven continents and reach the geographic and magnetic poles at both ends of the globe, as well as fly across the Atlantic in an open basket under a balloon, removing mink from Great Britain ought to seem a walk in the park.

David has very kindly agreed to be the Waterlife Recovery Trust's founding Patron. He says '*I am delighted to become Patron of the Waterlife Recovery Trust as it now seeks to replicate recent success in East Anglia across the rest of the country. In a world of seemingly unrelenting bad news about human impacts on wildlife, WRT offers the prospect of reversing a century of mink damage in this country, and watching water voles and other native creatures bounce back on our waterways, as they are already in Norfolk and Suffolk.*'

David is an inspirational leader and motivator and, underneath all the glamour and fame, just a thoroughly decent, generous chap. We are privileged to have him on board from the start of WRT's exciting journey.



And, finally, it's worth reminding ourselves just how exceptional is the task, or perhaps more appropriately, the *vision* that we are collectively setting ourselves. England alone covers 130,280 sq km, and Wales a further 20,780. The largest successful invasive mammal eradication operation worldwide up to now removed coypu from some 20,000 sq km, and that was co-led by our own Simon Baker, so we have the right pedigree in our midst. As scary as this objective sounds, scale is no barrier to success. The crucial thing is to ensure that the fundamentals are right (e.g. that every target animal can be put at risk, and that removals exceed breeding output), and I'm confident that this is the case here. It's also worth remembering that both pine martens and polecats were driven to the brink of extinction in Britain without a coordinated campaign, so there are precedents for heavily depleting mink-sized mustelids by trapping in this country.

An exceptional challenge demands exceptional people with an exceptional dedication to succeed, and this will be key as the project expands into new areas; the David Hempleman-Adams philosophy.

With my best wishes,

Tony Martin

Chair of the Waterlife Recovery Trust Board
& WRE Steering Group