

Mammals

in the

MIST

Catherine McNicol spends her field seasons in the Welsh rain, trying to understand the relationship between two of the UK's mammals, one of which does not belong here.

It's not even lunchtime, I've fallen over about six times already and the weather would suggest I'm inside a cloud. But the less-than-graceful show goes on and I won't be stopping until I have checked all of my squirrel traps and collared their slightly irritated occupants. This is fieldwork in the Welsh woods in a nutshell. Sometimes I wonder how on earth I found myself here.

"I'm never working in the UK," a past version of myself would say, "no way am I doing another degree." Now with two degrees under my belt I find myself commencing a 3 year PhD working with a native species in the UK. Didn't see that coming.

My work focuses on the impact of reintroducing the native European pine marten (*Martes martes*) on a species that doesn't naturally belong here: the grey squirrel (*Sciurus carolinensis*). Introduced in the late 1800's by Victorians who thought they looked nice, this invasive species thrived in the absence of natural predators and within 30 years was found in almost every corner of the UK. By the 1920's, people realised these pesky Greys shouldn't be introduced anymore and eventually strategies to control and eradicate their populations were implemented. These still continue today. But the trapping and dispatching of squirrels is highly labour intensive and draws parallels to painting the Forth Road Bridge. Once

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you've finished, you have to start all over again. The ability of this species to colonise and repopulate areas is phenomenal, and culling efforts can be thwarted when juveniles from nearby areas quickly replace the squirrels that have been removed.

This is where the pine marten comes in. Now, the pine marten is not a bird, nor is it a tree. I'm talking about the large cat-meets-ferret-meets-stoat-meets-fur-stole. With me? Good.

These beautiful and elusive creatures, once common across the UK, have suffered huge population declines as a result of persecution, hunting for the fur industry and loss of their woodland habitat. As a result, their distribution is sparse and pretty patchy with the exception of Scotland, and remaining individuals are struggling to re-establish self-sustaining populations. Enter the Vincent Wildlife Trust. By boosting the residual and highly elusive population in mid-Wales, the Trust aims to restore pine marten numbers to healthy levels.

These two species come together due to the results from a study in Ireland that found there were less grey squirrels in areas that pine martens existed. In the fashion of true science, we needed to find out if this was a one off occurrence or a UK-wide trend - this meant replication, improvement and investigation. The project is now underway - with 17 Scottish martens roaming the Welsh woods since their introduction in September 2015, and 20 more due to arrive this summer. Summer, that small window of the year where it doesn't rain, for about one week.

Welsh rain is the kind of rain that doesn't look so bad, but soaks you through. It's the "I wish I'd brought a coat," rain, the "it's too warm for a coat but too wet for anything else," rain, the "not heavy enough to stop the midges" rain. In Wales you can't wait for the rain to stop, so here I am, slipping down muddy banks trying to catch and put radio collars on unsuspecting grey squirrels.

Having never worked with squirrels before, or pine martens, or any wild mammal for that matter, the whole experience has been a steep learning curve. With my last rodent-related incident involving being bitten by my pet rabbit at the age of 12, I knew I had multiple hurdles in my way. But after some expert training by Mark Ferryman from the Forestry Commission (my funding organisation), I knew how to trap, collar and tag even the most unwilling of squirrels.

So with 53 telemetry collars, fitted with GPS loggers, I was launched into the back of beyond to live in some unpronounceable village in mid Wales. Goodbye social life, goodbye civilisation, goodbye sanity.

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Nature: Apparently squirrels will not go into your traps for food if there is food elsewhere. In hind-sight this is obvious, but at the time I was positive I'd failed before I'd even seen a single squirrel. Lesson: make sure the timings of your fieldwork are appropriate for the species you are working with. And buy lots of cobnuts. Squirrels love cobnuts.

Issue number two raised its ugly face very soon after: **Nature.** Apparently there are other animals in the woods apart from squirrels. After a week of being positively terrified and confused about why my traps were being uncovered and disturbed every night (visions of a creepy man in an anorak filled my mind) I discovered a nosey fox was to blame. Lesson: think about the ecosystem in which you are working and the other animals that live there. Foxes are very smart; some may even say





fantastic.

After nut-gate and fox-gate my collaring picked up and I became the pied piper of Pont-rhyd-y-groes. I developed a reputation as the 'squirrel lady' after chance encounters with dog-walkers, farmers and foresters in random patches of woodland. I drove around the valleys with a box of peanuts, maize and sunflower seeds in my boot and squirrel traps in my back seat. Even the staff in Screw-Fix knew about my squirreling after I explained to them why I needed so many zip-ties.

But then...issue number three appeared like a slap in the face: Technology. Nature had done its worst and now it was time for man-made devices to stamp on my optimism. Two months after I began collaring, I started to re-trap the squirrels to get the data from the GPS units I had applied to them. The six weeks worth of data I expected from them turned out to be two at best due to battery and signal issues. Insert emotional breakdown at the prospect of another two months alone in the woods with some crazy rodents. However, after the time and effort I had already sacrificed, I refused to be beaten and replaced the GPS units to collect another 2 weeks of data. Lesson: check your technology, check it again, check it in the field, then half your expectations.

By this point I was teetering on the edge of insanity. My weekly food shopping was the only activity that reminded me what day it was and that it was socially unacceptable to only wear waterproofs or pyjamas. When winter storms began to arrive and I was banned from the woods due to risk of death-by-falling-tree I would spend my days worrying about my sites and the time that was running out. Trapping in stormy weather is risky and unadvisable, the animals can die of exposure to the elements if they are left in traps for too long. Sudden changes in the forecast would send me into a panic and result in frantic driving along country-lanes to close traps

at my sites.

If this wasn't the PhD for me I think I would have sacked it in after one month. It truly is a labour of love, mixed with fear of failure, or simply fear. Some days, on the very rare occasions when the rain has stopped and the sun is shining, I do have those 'I'm so fortunate' moments. I spend every day outside surrounded by the sights and sounds of true British nature, something we overlook every day. The ancient beech woodland, the unexpected waterfalls, the red kites soaring above the valleys, the noisy jays squabbling in the undergrowth and the curious blue tits following me from trap to trap. I will admit, I don't feel this way when it's dark and raining and one leg has just sunk into a

bog up to my thigh. But as biologists we often forget how much we know and how lucky we are to work with wildlife. The random encounters with dog-walkers or rambles in the woods, and the resulting conversations always surprise me. In my mind, for conservation projects to be successful, they need to be understood and supported by surrounding communities and affected individuals. These simple conversations about what a pine marten is or why grey squirrels are detrimental are really important for the lifespan of the project. When there is a common understanding and a vested interest in supporting a conservation project, its continuation and success is more likely. Word-of-mouth is a great tool, and if I can get someone excited about the pine marten project, the positive attitude is contagious.

Yes, the science is important, that's why I spend countless days ploughing through data at my desk while the sun shines outside. It's not all wandering through woodland with an aerial, chasing the blips coming from a radio collar. But fundamentally, if the work on the ground is not supported and sustained then what we are doing is bound to fail. So my wellies and waterproofs are always in my car boot, awaiting their next call of duty in the valleys.

Catherine McNichol is a PhD researcher at the University of Exeter. Her research is in collaboration with the Vincent Wildlife Trust and Forestry Commission. Check out her blog: <http://walkingwithallens.blogspot.co.uk>