Village bird study highlights loss of wildlife knowledge from one

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Our ability to conserve and protect wildlife is at risk because we are unable to accurately gauge how our environment is changing over time, says new research out today in *Conservation Letters*.

The study shows that people may not realise species are declining all around them, or that their local environment may have changed dramatically since their parents' and grandparents' days, and even in their own lifetime.

This could be bad news for conservation projects, because if people do not perceive there to be any degradation of the world around them, they may be less willing to engage in activities to conserve and protect the environment.

The new study provides the first evidence of so-called 'shifting baseline syndrome' - a conservation theory which says that people's perception of the environment is determined by what they see now, with their own eyes, and does not take into account what things were like in the past.

To test the theory scientists carried out a survey in the village of Cherry Burton, Yorkshire, to examine whether people were aware of changes in local bird populations over the last two decades. The researchers asked 50 village residents what they thought the three most common birds in the village were 20 years ago, and more recently, in 2006. Their answers were rated according to how close they came to getting the three most common birds correct for both dates, which were the wood pigeon, feral

pigeon and starling in the earlier period, and in 2006 were the wood pigeon, blackbird and starling.

In addition, villagers were asked to say whether they thought populations of four easily recognisable birds - sparrows, starlings, bluetits and wood pigeons - had increased or declined in the village in the last 20 years. In reality, numbers of sparrows and starlings have declined in the area over this period, whilst wood pigeons and blue tits have increased.

The results showed that older people could more accurately name the three most common species in the past, whereas young and old residents were equally accurate when it came to naming the current common species. This indicates that all villagers are equally knowledgeable about the current state of bird populations, but that younger members of the community are less aware of past changes. Additionally, people who thought that there had been no change in bird populations were more likely to name birds that are common now, rather than those which were more common in the past.

For three of the four species, the house sparrow, starling and wood pigeon, the accuracy with which villagers were able to judge whether numbers of these birds had gone up or down increased with age, showing again that younger people were less able to accurately recognise how populations had changed over time.

These results suggest that wildlife knowledge is not being passed on from older to younger people, resulting in 'generational amnesia' where what is perceived as 'normal' by younger residents may in fact be quite different from circumstances a couple of decades ago. The study also provides evidence for the potential importance of 'personal amnesia' where people assume that what they see now is how the world has always been.

Sarah Papworth, a PhD student in Imperial College London's Department of Life Sciences, lead author of the paper, explains: "Our survey results indicate that the baseline has shifted in this village: in the course of a generation, changes in bird populations have been collectively 'forgotten' by the community. If this trend continues, this knowledge will be lost altogether in a couple more generations, and people will have little idea that their local wildlife was ever any different to what they see today with their own eyes."

Ms Papworth and her colleagues say that if shifting baseline syndrome is occurring in relation to bird populations in this Yorkshire village, then it is likely to be occurring in other areas, and in relation to other species and ecosystems too. This is a worry because it means people will more readily accept a degraded environment, if they do not know things were any better in the past.

Professor E.J. Milner-Gulland, also from Imperial's Department of Life Sciences, co-author of the paper, says that action should be taken to now to ensure that community members keep themselves up to date with changes in their environments:

"This could involve encouraging younger members to talk to their elders about what their local area was like only a few years ago, or using historical accounts or old photographs to demonstrate changes visually. If we don't do this, then we risk sleepwalking through the degradation of our natural world, without realising what we are losing," she said.

In the meantime, she adds, conservationists may have to take shifting baseline syndrome into account when planning activities:

"It is more and more common for people to use local residents' recollections alongside traditional scientific methods when compiling data on changes in biodiversity over the years. This is a great way to

engage local people with conservation and use their valuable knowledge. It's particularly useful in many parts of the world where there has been no previous scientific monitoring.

"However we do need to be careful to bear in mind that individual and collective memories of previous environmental conditions can be warped by time. Nothing can replace long-term independent monitoring of biodiversity trends in providing us with a baseline for conservation action," she concludes.

Source: Imperial College London