Chernobyl-based birds avoid radioactive nests

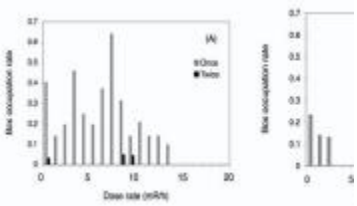
00:01 28 March 2007 by **Catherine Brahic**
For similar stories, visit the **The Nuclear Age** Topic Guide

Birds in Chernobyl choose to nest in sites with lower levels of background radioactivity, researchers discover, but how they can tell remains a mystery.

Anders Møller at Pierre and Marie Curie University in Paris, France, and Tim Mousseau at the University of South Carolina in Columbia, US, erected more than 200 nest boxes in the Red Forest, about 3 kilometres away from the nuclear reactor that exploded in 1986.

Using these artificial nests, they studied at the nesting habits of two species of birds - the great tit *Parus major* and the pied flycatcher *Ficedula hypoleuca* - between 2002 and 2003.

Moller and Mousseau wanted to see if either species would differentiate between nesting sites that had high and low levels of background radioactivity. The patchy distribution of background radioactivity in the area (due to the fact that radioactive material from the explosion did not settle uniformly) meant the nest boxes could be in very similar locations, with similar food supplies, but have widely varying levels of background radioactivity. Levels at some nest sites were as much as 2000 times natural levels elsewhere in the world.



.The nest boxes were all in the
kilometres from Chernobyl's rea
exploded in 1986 (black dots, b
Proc. Roy. Soc. B)

Enlarge image

2 more images

Deformed sperm

The researchers found that both species had a definite preference for nest boxes with low radioactivity, with the pied flycatcher seemingly more sensitive than the great tit (see chart, bottom right).

Previous research done by Mousseau and colleagues (*Trends in Ecology and Evolution*, DOI: 10.1016/j.tree.2006.01.008) showed that higher radioactivity

results in lower levels of antioxidants and also deformed sperm in barn swallows around Chernobyl. It therefore makes sense for birds to avoid more radioactive sites.

"It is not entirely clear exactly how the birds are able to tell which boxes are most contaminated", says Mousseau, adding that determining this will be very difficult without experimental manipulations.

Wildlife boom

A spokesperson for the Royal Society for the Protection of Birds told **New Scientist** that the study is interesting, but points out the unexpected benefits of the Chernobyl explosion. Reports show that the large human exclusion zone around the site has led to a boom in animal populations, including eagles, wolves and bears.

"Whatever effect the radioactivity is having, it seems to be less of a threat than human activities, such as agriculture," said the spokesperson.

"There have been few rigorous scientific analyses of background radiation and the natural abundance of species," responds Mousseau. "But every rock we turn over, every survey we do, we find some previously unreported effect of background radiation."

Immigrant influx

Mousseau believes that the reports of sustained animal populations around Chernobyl mask fluctuations within the populations.

He says studies he has carried out looking at where the barn swallow populations in Chernobyl come from suggest that "the populations are mostly sustained by immigrant birds", rather than birds returning to their nesting sites as they normally would.

So an overall picture showing constant population size could hide the fact that the local population is dwindling but being constantly replenished by neighbouring ones.

Journal reference: *Proceedings of the Royal Society: B* (DOI: 10.1098/rspb.2007.0005)

Endangered species *- Learn more about the conservation battle in our comprehensive special report.*

The Nuclear Age *- Learn more about all things nuclear in our explosive special report.*

More Latest news

Smoked jellyfish: The r Christmas future

13:00 24
Tomorrc be very today's, **Stefan** be no sh treats on offer

Jingle hells: How muza your mind

15:30 23
Sick of a tunes? T shopper loves se says acc **Cox**

The evolutionary burst oxygen-rich

14:30 23 December 2010
Gene families involved in resp photosynthesis arose in a sho burst which began around 3.3

2011 preview: Charge o

17:59 22
At long l compan cars as product

see all related stories

Have your say

Only subscribers may leave comments on this article. Please log in.

email:

password:

Remember me

Log in

Only personal subscribers may leave comments on this article

Subscribe now to comment.

All comments should respect the New Scientist House Rules. If you think a particular comment breaks these rules then please use the "Report" link in that comment to report it to us.

If you are having a technical problem posting a comment, please contact technical support.

Most read Most comm

Border collie takes recc vocabulary

2011 preview: Expect E planet

Robots learn to walk lik citizen

George Soros: Econom

Let's build Babbage's u mechanical computer