

nature.com

[Jump to main content](#)

[Jump to navigation](#)

news @ nature.com
The best in science journalism

[REGISTER](#)
[SUBSCRIBE](#)

[E-A](#)

[PUBLICATIONS A-Z INDEX](#)

[BROWSE BY SUBJECT](#)

[SEARCH](#)

This site

[go](#)

[ADV/](#)

nature
CLINICAL
PRACTICE

Now available:

Advanced Online Publication



[Home](#) > [News](#)

Home

News

Features

Columns & blogs

Archive

11

Specials

In focus

- [Antibiotics](#)
- [Bird flu](#)
- [Cancer](#)
- [Climate change](#)
- [Dark side of the Universe](#)
- [Dinosaurs](#)
- [Future computing](#)
- [Stem cells](#)
- [Tsunami](#)

Stories by subject

NEWS CHANNELS

My news

Biotechnology

Careers

Drug discovery

Earth and environment

Medical Research

Physical Sciences

NEWS

Published online: 11 July 2007; | doi:10.1038/news070709-4

Chernobyl birds are better off drab and lazy

Species able to invest in cell defence suffer less from radiation.

Louis Buckley

Birds with bright plumage have suffered most from radiation around the Chernobyl nuclear plant, scientists have discovered. Species that lay large eggs or travel long distances are also more susceptible to radiation.

All of these traits require large quantities of the antioxidant molecules that protect cells. Investing in them leaves birds with fewer to counter the effects of radiation, say the researchers behind the discovery.



Migratory birds such as swallows seem more vulnerable to radiation.

Tim Mousseau

Timothy Mousseau, of the University of South Carolina in Columbia, and his colleague Anders Møller, from the University of Pierre and Marie Curie in Paris, counted more than 1,500 birds from 57 species in the woods around the reactor, comparing areas of high radioactivity with nearby uncontaminated sites.

[Send to](#)

[Printer f](#)

[e-alerts](#)

[Recomm library](#)

[live new](#)

RELATED STC

[Hungry fungi c radiation](#)
23 May 2007

[Chernobyl and soon for a final](#)
19 April 2006

[Nuclear power: the future: wh right](#)
19 April 2006

[Chernobyl ecos 'remarkably he](#)
09 August 200

EXTERNAL LI

[University of S Chernobyl Res](#)
[British Ecologic Journal of Appl](#)

[ADVERT](#)

naturejobs

PhD Studentship
Funded by EU Marie
Curie Action

Physics
University of Lyon
Lyon, France

Professor

Geology
Stockholm University
Stockholm, Sweden

[More science jobs](#)

Feedback

About this site

About us

For librarians

TOP STORIES

[HIV trial doomed by design, say critics](#)
11 July 2007

[See new galaxies — without leaving your chair](#)
11 July 2007

[A healthy world needs lots of species](#)
11 July 2007

[Libyan court upholds death sentences](#)
11 July 2007

[Underground lab set for South Dakota](#)
11 July 2007

[Chernobyl birds are better off drab and lazy](#)
11 July 2007

[Divers dismantle artificial reef](#)
10 July 2007

They found that birds with colourful red, yellow or orange plumage based on organic pigments called carotenoids, such as orioles and blue tits, were much less abundant in contaminated areas than their more dowdy relatives, such as tree pipits, coal tits and chaffinches. Species laying large eggs and those that migrate over large distances were also particularly scarce.

Antioxidants mop up free radicals — reactive molecules produced as a byproduct of metabolism and in response to exposure to radiation — which can damage DNA and proteins. The study is published in the *Journal of Applied Ecology*¹.

Dangerous radicals

Carotenoid pigments are powerful antioxidants. As well as using them in plumage, birds cram them into their eggs to protect the developing embryo from free radicals — this is what makes yolk yellow.

Migrating birds, meanwhile, burn a lot of fuel, and produce lots of free radicals in the process.

Mousseau believes his results show that conserving antioxidants is the key to surviving in an area such as Chernobyl. Animals that splurge most of their supply on, for instance, producing colourful feathers might not have enough left over to protect their DNA from radiation damage. That can result in higher mutation rates and, ultimately, population decline, says Mousseau.

"Overall we found that population size and abundance decreased," says Mousseau. "However, a few species actually increased in contaminated areas — we don't know why, but it could be due to decreased competition in these areas. The take-home message is that there is tremendous variability in the way that different species cope with radiation."

But more research will be needed to determine conclusively whether the radiation levels around Chernobyl are strong enough to affect birds, says geneticist Yuri Dubrova of the University of Leicester, UK.

"This is very interesting data,"

ADVERTISEMENT



Naturejo
biotechn
positions
levels.

Click her
your dre

CLIC
TO
BIOTECHN

NEWS FROM:
SCIENTIFIC AMERICAN

[Soil May Cour Buckyball Dar](#)

[100-Year Fore Climate Zones Never Seen](#)

[Beyond IQ: Y Can Focus on Hand Do Bett](#)

[Battling Bacte Protein](#)

► [more science](#)

he says. "If correct, it potentially indicates that low-level radiation is more harmful than previously assumed."

Visit our [newsblog](#) to read and post comments about this story.

[▲ Top](#)

References

1. Møller, A. P. & Mousseau, T. A. *Journal of Applied Ecology* doi: 10.1111/j.1365-2664.2007.01353.x

[▲ Top](#)

 For full access to the site and the archive, [subscribe](#) here:

[Subscribe](#)

 To receive all the daily news in your inbox each week, [sign up for our email alert](#) here:

[E-alert](#)

 To see the latest news visit our [homepage](#):

[Homepage](#)

[▲ Top](#)

news@nature.com

ISSN: 1744-7933

[Home](#) | [News](#) | [Features](#) | [Columns and blogs](#) | [Archive news](#) | [Specials](#) | [In focus](#) | [Stories by subject](#) | [My news](#) | [Biotechnology news](#) | [Careers news](#) | [Drug discovery news](#) | [Earth and environment](#) | [Research news](#) | [Physical sciences news](#) | [Feedback](#) | [About this site](#) | [About us](#) | [For librarians](#) | [Help](#)



©2007 Nature Publishing Group | [Privacy policy](#)