



nature

scienceupdate

updated at midnight GMT today is saturday, february 9

search nature science update

go

advanced search

news

home

Feathers track migrants' flight

content

Chemistry reveals birds' differing tastes in Caribbean islands.  
08 February 2002

- news
- features
- by subject
- conferences

JOHN WHITFIELD

services

Chemicals in feathers have shown that one migratory bird species splits into two groups that have separate summer and winter homes. Similar analysis could decode other birds' movements and aid their conservation.



Black-throated blue warblers are in decline in the southern US  
© Nicholas Rodenhouse

- send to a friend
- printable version
- e-alert
- search
- help
- feedback

information

Black-throated blue warblers (*Dendroica caerulescens*) that breed in the northeastern United States winter in the western Caribbean, Dustin Rubenstein of Dartmouth College in Hanover, New Hampshire and his colleagues now report. Those that spend the summer in the southern states head for the eastern Caribbean when the weather turns cold.

- about the site
- about us

supported by

The finding could explain why the species is in decline in the southern United States. These birds migrate to the most heavily deforested islands in the Caribbean, such as Hispaniola.

"We're not sure why they do this - we never knew to look for it before," Rubenstein says. One possibility, he argues, is that northern birds leave first and fly over their southern counterparts to bag western locations in Jamaica and Cuba. Differences persist because "birds return to the same place year after year", he adds.

"It shows there are very different populations within the one species - nobody's been able to come up with this level of detail before," says ecologist Keith Hobson of the Canadian Wildlife Service in Saskatoon. Similar differences "are probably typical of a vast number of species", he says.

Knowing where animals go will help researchers to work out why they are under threat, and help to focus conservation efforts, Hobson adds. "Rather than just saying 'this bird goes to the tropics', we can concentrate our efforts in a more refined manner, geographically and politically."

related stories

- **The littlest lizard**  
3 December 2001
- **Birds fly best on a full tank**  
18 October 2001
- **Flycatchers caught on the hop**  
17 May 2001
- **The hazards of night flight**

linksout

- **Stable isotopes in migratory birds**
- **Migration of birds**

more news

- **Fastest ice on earth**  
8 February 2002
- **Sperm and eggs fall foul of fallout**  
8 February 2002
- **Feathers track migrants' flight**  
8 February 2002
- **Imaging and astronomy share new wave**  
8 February 2002
- **Max Perutz 1914-2002**  
7 February 2002

**Black box**

Banding is the traditional way to track bird movements, but the chances of recapturing a ringed bird are pretty slim. Satellite tags are expensive and too heavy to attach to small birds.

**Nobody's come up  
with this level of  
detail before**

**Keith Hobson  
Canadian Wildlife  
Service**

But every animal is a chemical album of its travels. Variations in geology and climate give each place a chemical signature. These signatures mark plants, and pass up the food chain into insects, birds and beyond.

So feathers can be the **black box** of bird flight.

Black-throated blue warblers replace their feathers on their breeding grounds, just before heading south. Plucking feathers at this point allowed Rubenstein's team to map the proportions of different forms of carbon and hydrogen in birds' migratory plumage to their nest sites.

This meant that later, when the researchers caught warblers in the Caribbean, they could tell where the birds had come from.

**References**

1. Rubenstein, D. R. et al. Linking breeding and wintering **ranges of a** migratory songbird using stable isotopes. *Science*, **295**, 1062 - 1065 (2002).

© Nature News Service / Macmillan Magazines Ltd 2002