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El Niño linked to boom in bird babies Weather where flocks spend winter - not breeding grounds - appears to be key

By SARAH GOFORTH Staff Writer

Published August 5, 2002

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Songbirds that retreat to Mexico in winter enjoy especially deluxe accommodations during El Niño years - and come spring, they have the babies to show for it.

Birds that nest and breed in Oregon and Washington and winter in Mexico produce more young in El Niño years, researchers have found. Abnormally cool, wet El Niño winters, like the one expected this year, appear to enhance the birds' procreative abilities the following spring.

Philip Nott, a landscape ecologist at the Institute for Bird Populations, noticed the trend when he compared weather data with information - collected from 1992 until 2000 - about Pacific Northwest bird populations.

"I plotted it out one afternoon and couldn't believe that I got a straight line," Dr. Nott says. The picture he saw showed a consistent relationship between the amount of El Niño-related rainfall in the Mexican wintering grounds and the number of young birds in the spring.

Since El Niño's effects are much weaker in the Pacific Northwest, the link between El Niño years and high breeding success is probably driven by weather in the birds' winter habitats. The researchers aren't sure why cool, wet winters boost bird populations in the spring. But it may be that these conditions invite insects, and so the birds enjoy a season of hearty meals. As a result, the warblers, wrens and tanagers that flee to Mexico during the coldest months may be more robust and better able to survive the 2,000-mile trek back to their springtime abodes.

What's more, El Niño may also ease the birds' burden along the way by furnishing strong tail winds in the same direction as the birds' flight back north. In the end, more of the birds probably survive the journey. And those that do are likely to be healthier than they would have been after a normal winter.

"It's a hard thing to migrate. It's a big energetic deal," says Dr. Nott. In the spring, the birds "can hit the ground running" if they are in better physical condition after the winter, he says.

The new research, published last month in the journal *Global Ecology and Biogeography*, challenges the idea that the climate and health in the Pacific forests where the birds breed in spring are the only factors that affect their reproductive success.

"It has been the current dogma that somehow we could understand a species by studying where it breeds," says Tom Smith, director of UCLA's Center for Tropical Research. "If it's a migratory bird, you really need to understand what's going on in its wintering grounds."

Researchers and volunteers monitor birds' vital statistics at more than 500 stations established by the Institute for Bird Populations. These data-collection hubs are cores of the California-based institute's flagship program, called Monitoring Avian Productivity and Survivorship. Dr. Nott and his team used data from 36 stations in six national forests in Washington and Oregon.

Birds are particularly sensitive to human activity, and declines in bird populations are often considered a bellwether of environmental distress. But to fully understand how things such as urban growth and landscape development affect birds, Dr. Nott says, it is especially important to know how the animals respond to natural weather patterns. El Niño is part of a broader climate pattern called the Southern Oscillation, which drives much of the weather in western Mexico. During an El Niño year, warmer temperatures in the Pacific Ocean mingle with the atmosphere in a way that creates more rain and cooler temperatures throughout western Mexico.

But the El Niño Southern Oscillation is not alone. The less-understood North Atlantic Oscillation alternates between decade-long warm and cool phases, and its effects tend to crop up most prominently in Europe.

Dr. Nott and his team noticed that El Niño had less bearing on spring populations of

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temperate-wintering Pacific Northwest birds than on the birds that migrate to Mexico. Temperate wintering species such as the mountain chickadee and American robin spend winter along the western U.S. coast, where El Niño has subtler effects. But between November and April, a warm-phase North Oscillation creates a milder winter and earlier spring in the western United States. These conditions are ideal for the Western spruce budworm and Douglas fir tussock moth, insects that are favorite cuisine among many temperate wintering birds.

When Dr. Nott compared data from warm-phase North Oscillation years to cool-phase years, he found that, indeed, the temperate wintering birds fared better after warm-phase winters.

"We're trying to encourage birders and ecologists to start looking at these issues on the over-wintering grounds because, clearly, we now know that what happens there is extremely important," Dr. Nott says.

The same may be true for Texas bird species, and the Institute for Bird Populations has turned its attention to the state and its avian residents. It's too soon to say how birds that live in or migrate to Texas are influenced by weather, but just as more rain during El Niño years is a boon to Pacific Northwest species, Dr. Nott says, water is key for birds in Texas, too.

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