

By Kate Millpointer
with Preston J. Truman

Silent Sun

IT WAS QUIET. TOO QUIET. SOMETHING WAS TERRIBLY wrong with the birds.

For more than a decade David F. DeSante, a scientist at the Point Reyes Bird Observatory (PRBO) north of San Francisco, had studied the reproductive patterns of dozens of species of landbirds. But in late July 1986 he and his colleagues observed a disturbing phenomenon: an unprecedented number of birds were simply failing to reproduce. DeSante wanted to know why.

His search for an answer would lead him to a startling conclusion—one with implications far beyond his own field of ornithology. What DeSante determined about some birds in northern California may, in fact, offer insights into the fate of the Earth.

The roaring silence: Unlike most researchers, who typically concentrate on a single species, DeSante has monitored the reproductive success of 51 species of landbirds—which makes him a big-picture ornithologist.

"Usually," DeSante told *In These Times*, "when you walk down the net lanes in July there are flocks of punks [juvenile birds] and family groups of bushtits. Juvenile sparrows are collecting in little groups, and warblers are flying through the trees. The juveniles are squeaking and chirping, and some of the adults are singing."

But when he walked the net lanes on July 22, 1986, there was a striking change. Instead of the exhilarating breeding and feeding songs of adult birds and the squeaks and chirps of the young ones, he met an ominous silence.

"There were no young birds," he said. "And all the adults had stopped singing. I guess they had just given up."

From 1976 to 1985 the average daily capture for the month of July was more than 31 birds, and 60- and even 90-bird days were common, according to DeSante. In 1986 the breeding seasons started out in April auspiciously enough, and by May it promised to be better than usual.

Based on the higher-than-average rainfall California had received that winter, DeSante and his co-researchers expected a 10.4 percent increase in landbird productivity, or 110.4 percent of normal. Indeed, from May 10 to June 8—the first 30 days of the 100-day period, during which DeSante captured the juvenile birds that fledged three or four weeks earlier—the capture rate was 111.7 percent of normal.

But by mid-June, during the fourth of ten 10-day monitoring periods, the researchers noted that the number of netted birds was only 56 percent of the previous 10-year average. Such a decrease had never occurred before, but, according to DeSante, the researchers thought that the breeding season might have been delayed. Thus they dismissed this early indication that something was amiss, expecting to see a rapid improvement.

Instead, the numbers got worse—almost on a daily basis. By the eighth 10-day period in late July, productivity had dropped to only 24 percent of average. And this happened during a time when peak numbers of birds are usually captured.

Dismayed, DeSante and his co-workers conducted an arduous seven-week computer analysis of the captures of newly banded birds for the years 1976-86. They were immediately able to rule out pesticides, herbicides or other chemicals as probable causes of the low productivity, since no ap-



Sarah Shafer, a researcher at the Point Reyes Bird Observatory, removes a hummingbird from a mist-net.

plications were known to have occurred in the past 11 years within at least two kilometers of the area. And starvation evidently was not a factor, because the food supply appeared to be plentiful relative to recent productive years.

A deadly joke? "Nobody could think of anything to explain this," DeSante said. "So I said, as a joke, 'Well, it must have been Chernobyl,' and everyone just burst out laughing. Because when the Chernobyl fallout cloud passed over, and when it rained, the radio reports said that there was no reason to worry, and no reason even to wash the vegetables, because the amount of radiation was insignificant. So we didn't think about it anymore."

Acting on the hunch that he wasn't the only researcher witnessing the dwindling bird population, DeSante called Donald L. Dahlsten, who for more than two decades has conducted nesting-site, reproductive and life-span studies on Mountain and Chestnut-backed Chickadees at two study sites: Blodgett Forest in the western Sierras, and Modoc County, Calif., east of the Sierras.

When asked by DeSante about how his chickadees were doing, Dahlsten said he replied, "Funny you should ask, because this year Blodgett Forest has been a disaster, and we don't know why."

"We noticed something was wrong as soon as we saw the first nests," Dahlsten told *In These Times*. "There was a helluva mortality, and we could not figure it out.... It was the first time I had seen such a failure."

His data showed that Blodgett Forest nest failures were at a 15-year high, as were nest-

ling and egg mortality. Once again, pesticides and starvation were ruled out as factors in the unprecedented mortality spike.

Rain of terror: North of Eureka, Calif., at the Lamphere-Christiansen Nature Preserve, C.J. Ralph witnessed a 60-percent decrease in the White-crowned Sparrow, compared to the previous four years. An ornithologist and research scientist with the U.S. Forest Service, he has independently studied the breeding biology of White-crowned and Song Sparrows since 1982.

"We don't know if there was mortality, or lack of breeding success, but we didn't have as many juveniles to band in 1986," he told *In These Times*.

The reproductive failure may have affected western Oregon and Washington as well, since DeSante's preliminary data suggests that White-crowned Sparrows reproduced poorly in those states. And researchers at Harvey Monroe Hall Research Natural Area in the sub-alpine Sierras found flocks of up to only four juvenile juncos in 1986, compared to numerous flocks of from 30 to 150 during nine previous summers.

Yet curiously, Dahlsten's other study site—Modoc County in the far northeastern corner of California—showed reproductive numbers on the high side of normal, as did research data in the state's southern section. The only seeming variable was the heavy rain that had fallen on most of northern California on May 6, but had missed northeastern and southern California.

When DeSante re-examined his data in light of this weather report, some striking facts emerged.

The drastic reproductive decreases of

nearly every landbird species didn't start at the beginning of the breeding season; the capture rate for young birds early in the season was perfectly normal. But during the next 50 days, beginning on June 9, capture rates plummeted—from 56 percent of normal, to 42 percent, then 39 percent and, finally, in the eighth period of late July, to only 24 percent of normal.

Thus the researchers determined that the onset of the reproductive failure must have occurred around May 10-15, because the first decreases in young birds netted were noted three to four weeks later. Clearly, something unusual had happened in the early part of May—but what? DeSante and his co-researchers studied their data again.

According to DeSante, one of the researchers said, "That is when the Chernobyl cloud was passing over. So let's really take a look at this."

This time nobody laughed when Chernobyl was mentioned.

The food-war hypothesis: When they categorized the species according to migratory behavior, habitat preference and nest location, the researchers found that the decreases were independent of those factors. But when they classified the species according to foraging behavior, they discovered a puzzling anomaly: the only species *not* affected were woodpeckers and swallows.

At first they could not understand why these particular species were exempt. But knowledge of avian diets provided a clue. DeSante's team knew that woodpeckers feed their young on grubs and beetles, which, in turn, feed on dying, dead and decomposing wood. Swallows feed their young on flying

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