

DEEP WOODS SERENADE
The Declining Wood Thrush
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A sudden burst of notes leaped into the dusk, a flute-like “ee-o-lay” followed by a slower, bell-like trill. The song echoed against a steep hill across the creek, then sank with ringing tones around thick trunks of oaks and yellow nods of bellwort. For a few moments, the song hung above the darkening stream, then the bird flitted through the twilight on low wingbeats. It rose at a stealthy angle and landed in a small cedar across the creek. I lifted my binoculars, and if the late May evening had allowed more light, I might have glimpsed the field marks of one of Henry David Thoreau’s most-praised birds. A cinnamon head. An olive tail and back. And the dark-spotted, white breast of the Wood Thrush.

But perched on a branch near the trunk of the little cedar, the Wood Thrush in my view was only a dark bird-shape with a gray shadow around its head and shoulders. I made the mistake of blinking, and the shape was gone.

In the late 1800s, Thoreau wrote that the “cool and liquid voice” of the Wood Thrush “declares the immortal wealth that is in the forest.... Whenever a man hears it, he is young, and nature is in her spring.” If Thoreau were alive today, I wonder if he would fear, as I do, that the bird laments how little life actually remains in our woods and how contemporary nature, even in its vernal state, shows alarming signs of aging.

According to recent Breeding Bird Survey (BBS) data, the Wood Thrush has declined 1.8 percent per year since 1966 throughout its entire breeding range. News from the wintering grounds is not better. John Rappole of the National Zoological Park in Front Royal, Virginia, and other scientists have estimated that since pre-settlement times the wood Thrush has declined 77 percent in northeastern Costa Rica and 95 percent in one region of the Tuxtla Mountains in Veracruz, Mexico. The declines are computer estimates derived from satellite imagery of remaining rainforests and are considered typical for the species’ winter range in southeastern Mexico and through Panama.

The Wood Thrush breeds in southern Canada, from Ontario to New Brunswick, and then south to the Gulf Coast and northern Florida. It nests in cool, damp forests, often near water, and in suburban parks and gardens. The Wood Thrush appears on its breeding range from late April to early May, and frequently returns to the same nesting site used the previous year. Early in the season, males sing their loudest and longest songs from the highest trees on their territories, especially at dawn. According to ornithologist Roland Roth, who has studied the Wood Thrush at the University of Delaware since 1973, males sing an average of 120 songs in the half-hour period before sunrise in May.

Wood Thrush nests can be found from three to forty-seven feet high in trees, both in well-concealed places and on conspicuous branches in spindly spicebushes. Most

ests have been found about five to fifteen feet off the ground. The female thrush builds the nest without help from her mate. She drapes white paper, plastic, string, or long stems of grass across a fork near the base of a branch of a deciduous tree or bush. She adds bits of grass, mud, dead leaf matter and rootlets, then uses her body to pack down the material. After constructing the walls, the female shuffles around, molding the nest into a cup-like shape with her breast. She brings more rootlets to line the nest, packing the rootlets in place with her feet. During this “foot molding,” the female’s head, tail and wings can be seen above the rim of the nest, her body quivering as though she might be “dog-paddling.”

While the female builds the nest, her mate may follow her closely, making an agitated “*pit-pit-pit*” sound. If a second male appears near the nest, he will be chased away immediately.

The finished nest is similar in shape to a robin’s nest, but its diameter from outer edge to outer edge is about an inch smaller—four to five and one-half inches. The female lays three to five pale blue eggs and incubates them about fourteen days. After hatching, the chicks remain in the nest about thirteen days, and both parents bring them food.

The Wood Thrush’s diet consists primarily of insects, although they also forage on the ground for millipedes, earthworms and spiders. They also eat spicebush berries, pokeberries, wild cherries, fox grapes and other wild fruits. To keep their hungry nestlings fed, the adults make as many as twelve feeding trips to the nest per hour.

After the young thrushes leave the nest, the adults continue to feed them until they are two or three weeks old. Frequently a Wood Thrush will attempt a second brood, sometimes building another while still feeding fledglings from the first brood.

Some Wood Thrushes reproduce magnificently well. Roth described a banded Wood Thrush that bred on his study plot for eight years, beginning in 1988, nearly three times as long as the average female. The bird produced thirty-three fledglings. In June of 1995, the nest was found destroyed, with a few Wood Thrush feathers and an owl feather nearby, suggesting a confrontation not in the best interest of the Wood Thrush.

Other Wood Thrushes, as BBS data suggests, fare poorly during the breeding season, especially in fragmented forests. In the Midwest, where large fields and isolated woodlots comprise much of the landscape, a familiar brood parasite is at least part of the problem.

“I think the Wood Thrush is better at raising cowbirds than any bird I know,” said Scott Robinson, an ornithologist at the Illinois Natural History Survey, Champaign, Illinois, who studied Wood Thrush populations in the Midwest 1989-1993. Robinson reported twelve Brown-headed Cowbird eggs in a single Wood Thrush nest, six cowbird eggs deposited in a nest in a single day, and four cowbird fledglings raised by a pair of Wood Thrushes in a single season. Robinson reported

that, in small Illinois woodlots, almost all Wood Thrush nests were parasitized by cowbirds, and there were nearly four times more cowbird eggs in nests than Wood Thrush eggs.

But cowbirds were not everywhere. In landscapes in Missouri, Wisconsin and Indiana where forests covered more half the area, so few cowbird eggs were found that Robinson and his colleagues, Frank Thompson, Therese Donovan, Donald Whitehead and John Faaborg, doubted nest parasitism could cause reproductive failure.

Instead, predation curtails breeding. Some predators are numerous around fragmented forests because they forage easily at the forest edge and in adjacent field habitat. The smaller the woodlot, the higher the density of raccoons, said Robinson. Two other nest robbers, Blue Jays and American Crows, also concentrate more densely around fragmented forests than in other habitats.

Edges of forests and open agricultural habitats are also prime foraging areas for cowbirds. Robinson reported that in small forests the population of cowbirds may not be limited by feeding opportunities, but by the saturation of host nests available in the woods.

Due to the combined pressure of predation and brood parasitism, any fragmented forest under 500 acres is probably a “population sink,” where Wood Thrushes do not raise enough fledglings each year to compensate for adult mortalities, according to Robinson.

Although information on the subject is inconclusive, Robinson says that most Wood Thrushes that reproduce successfully in the Midwest are probably nesting in large forests.

The farther east the Wood Thrush breeds, the less cowbird parasitism it encounters. Jeffrey Hoover and Margaret Brittingham surveyed 896 nesting records from the Cornell Laboratory of Ornithology and found 42 percent of Wood Thrush nests were parasitized in the Midwest, 29 percent in the mid-Atlantic states, and 14 percent in the Northeast. Yet BBS data suggest the Wood Thrush is declining equally in all three regions.

Roth believes that predation in fragmented forests—without significant cowbird pressure—is probably the primary obstacle for the Wood Thrush in its eastern range. During intensive nest monitoring that began in 1974, Roth reported a population fluctuation of Wood Thrushes in a thirty-five acre woodlot in Delaware. An average of twenty-six nesting females were found from 1974 to 1978, and an average of seventeen were found 1979 to 1988, reflecting a 4 percent decline that matched the overall decline of the Wood Thrush across its entire range. The population rebounded to 30 in 1990, leveled off to 24 in 1994, and was reported at 25 in 1995.

Since no environmental pollutants were evident, and cowbird parasitism was low or absent during some years of the 1979-1988 decline, the reduced population was attributed to predation. Roth and coworkers frequently found intact nests empty of eggs, nests destroyed, and nests pulled down out of their sites, probably by raccoons. Gray squirrels, American Crows and Common Grackles were plentiful on the plot. Blue jays were seen approaching nests even though chased by Wood Thrushes. Great Horned Owls were also suspected predators.

Fledgling production and the annual return of experienced nesters were crucial to the Wood Thrush population on Roth's plot. During 1974-1978, while the population and breeding success were high, as many as 70 percent of nesting females returned to the plot the following years, and as many as sixty-six fledglings were produced in a single season.

While the Wood Thrushes were in decline during 1979-1988, as few as 20 percent of nesting females returned to Roth's plot the following, and as few as twenty fledglings were produced in a single season. Roth suspects that a rash of predation from 1979-1988 caused nesters to fail on his plot, so birds may have chosen different breeding locations the following seasons. He believes predation diminished around 1988 when the thrushes produced fledglings again, with numbers reaching 119 in 1990. Thrushes returned to "successful" territories the following year and produced more young.

Roth warns that even though the Wood Thrush rebounded on his plot, his study does not discount concerns for the species in its eastern region. The study indicates that predators caused a local, nine-year decline of the Wood Thrush and reinforces Robinson's findings that the Wood Thrush is susceptible to predation in fragmented forests.

Through mist-netting, banding, field observations and radio tracking, Rappole and colleagues found that Wood Thrushes apparently belong to the ever-growing list of Neotropical migrants known to use territorial systems during the winter. They inhabit an area of about one acre, often returning to the same location year after year, defending their established territory inside the rainforest.

Wood Thrush caught by predators, such as Pygmy Owls and Forest Falcons, may indicate the Wood Thrush is failing to adapt to rainforest depletion. As more rainforests disappear, fewer Wood Thrushes can hold established territories, and more will face risks of unfamiliar habitats.

There are many ways to help the Wood Thrush. We can remind local governments and wildlife agencies that forest fragmentation issues are essential for local conservation strategies. Land owners and managers can minimize low-grass habitat and reduce foraging opportunities for cowbirds. Grass at campgrounds, wayside rests, historic landmarks, etc., can be kept above six inches high. Horse stables, visitor centers or other buildings should not be built in the middle of forests. Understory vegetation should be left to grow, so the fruits of spicebush, holly,

pokeberries, fox grapes and other plants can provide valuable nutrition tot thrushes migrating in the fall.

“Listening to the Wood Thrush sing at dusk is a good way to say goodnight to the day,” said Roth. If birders continue to hear the song hundreds of years from now, what tender, sweet music it will be.