Ecology begins at home

We cannot rail against those who destroy the rain forest or threaten the spotted owl when we have made our own backyards uninhabitable

By Sara Stein

When my husband, Marty, and I bought our land, it was in just that stage of regrowth from pasture to forest that is among the most productive ecosystems on earth. It was thicketed with brambles, bushes, vines and grasses that supported a large and varied animal population. Our footsteps stirred up flights of grouse, grasshoppers that rose on rattling wings, and panicky rabbits. Frogs of assorted size and voice croaked loudly by the pond. A woodchuck family lived below a large boulder; a fox had its den nearby.

But we are gardeners, and gardeners clear brush and brambles, plant beds of flowers and cut long grass to lawn. Within only a few summers of straightening up, we managed to degrade or destroy the habitat of most of the animals that previously had lived there.

The most dramatic sign that we were doing something wrong was the disappearance of pheasants. In those early days we had planted a hedge of currants whose brilliant berries were enjoyed by a mother and father pheasant and all their little chicks. The distance from hedge to unmowed, tall grass cover was about twenty feet—a critical distance it seems, for when we mowed a broader strip the pheasants no longer felt safe from predators. They were cut off from the berries as though by an invisible fence. The more we extended the lawn, the fewer pheasants we saw, and finally we realized that there were none.

Gradually we learned to see the land through the eyes of other animals. We had thought to make the place spacious by clearing it. But remove a ground bird's cover or a butterfly's flower and you have erased *its* space. The less variety of habitat the landscape offers, the less space there is for the creatures that once lived there. When all is simplified, even the expanse the size of a golf course becomes just a hole in the world.

Suburbia already has more holes than a slice of imported Swiss, and the routes along solid ground are becoming more and more difficult for animals to negotiate. America's clean, spare landscaping has devastated our ecology. The relentless spread of suburbia's neat yards and gardens has caused local extinctions of such important predators as foxes and has dangerously reduced the habitat of many birds. Our landscape tradition threatens fragile species with total extinction—orchids that rely on a single pollinator, butter- flies that require a specific host plant, songbirds that inhabit deep woods, and turtles whose routes to breeding sites are interrupted by roads or obliterated by drainage projects. Entire communities of plants and insects have been wiped out.

The extent of the loss became clear to me when I read *According to Season*, a collection of nature columns by Mrs. William Starr Dana that was first published in 1894. The farmland that Mrs. Dana saw on her forays from New York City to the surrounding countryside bore no resemblance to the land I see today. "The pink azalea," she wrote, "grows in great tangles in the wet meadows, where in June blue flags still lift their stately heads along the water courses, and the blossoms of the blue-eyed grass are now so large and abundant that they seem to float like a flood of color on the tops of the long grasses." Her walks took her along waysides "whitened with the large flowers of the lovely summer anemone." In spring she found the morning air "alive with the happy tinkle" of bobolinks. In summer she waded "knee-deep among the myriad erect stems of meadow lilies."

I became increasingly disturbed as she wound down the year by rhapsodizing about autumn, "when September lines the roadsides of New England with the purple of the aster, and flights it mantle of goldenrod over her hills, and fills her hollows with the pink drifts of the Joe-pye-weed or the intense red-purple of iron-weed."

This is not the way it is now in autumn. If I were to rhapsodize, I would have to sing a song of ugly mugwort. I have never seen a meadow lily or heard a bobolink. Where a hundred years ago Mrs. Dana might have found the former pond here "bright with the great blue lobelia," I found a single specimen of *Lobelia siphilitic*a. Vines draping thickets now are honeysuckle, not clematis. Blooms purpling damp hollows are loosestrife, not ironweed. Flowers whitening roadsides are Queen Anne's lace, not anemones. These replacements of our native flowers are all alien species and all weeds.

Already in my childhood, Mrs. Dana's floral tapestries of orchids, lilies, irises and gentians had grown threadbare beneath invasions of exotics. Since then I have watched as remnant meadows and incipient woods became overrun with *Rosa multiflora* , a pernicious thorn carelessly imported in this century as an ornamental, as too were Japanese honeysuckle, Oriental bittersweet, purple loosestrife and kudzu vine—all species that have rapidly stamped out our native vegetation. The richness of an ecosystem is reckoned in the coinage of diversity, and these aliens, by suppressing the total number of species, have drastically impoverished the land. Still, that wild mess of aliens that Marty and I cleared away was richer than the cultivated plantings which at first replaced it, for few ecosystems are quite as poor as a garden in the suburbs.

People don't think of the little land they tend as an ecosystem, perhaps because our properties are so remarkably poor in species that not even grasshoppers remain. Diversity of species is a form of safety in numbers—not numbers of individuals, but numbers of ways in which each individual's prodigious reproductive power is modulated by conflicts of interest among all the kinds of individuals with which it shares the land. The more species there are, the less likely it is that any one of them will get out of hand, and—just as true—the less likely that any one of them will suffer unduly.

But look down the block, peer along the rows of yards, drive the neighborhood. There are lawns (lots of individuals, but very few

species). There are foundation plantings (count the kinds—yew, yew again, more yew, a rhododendron). And ground covers (pachysandra, maybe juniper). Count the kinds of trees; ten fingers will do. Count the aphids on the roses; the digits of all the neighborhood's inhabitants are not enough. Look in vain for the ladybugs to eat them.

I am neither a romantic nor an altruist. I let grass grow for grouse, preserve dry-stone walls for toads, leave logs rotting in the woods for centipedes. I do this less because it's the decent thing to do than because it's the necessary thing to do. Each kind of microbe, animal and plant possesses some minute portion of the know-how that makes the whole earth work. The loss of a species deletes some portion of organic intelligence and leaves the land more stupid. Gardeners who clear a wild plot, as we did, can easily notice its diminishing IQ because immediately the land needs planting, feeding, watering, cultivating and pest control, whereas before it knew how to manage all these things itself.

The degradation of our land is not someone else's problem. Our backyards are not far away, like the rain forest, or steeped in conflict like the spotted owl. We—you and I and everyone who has a yard of any size—own a big chunk of this country. Suburban development has wrought habitat destruction on a grand scale. As these tracts expand, they increasingly squeeze the remaining natural ecosystems, fragment them, sever corridors by which plants and animals might refill the voids we have created. To reverse this process—to reconnect as many plant and animal species as we can to rebuild lively and intelligent suburban ecosystems—requires a new kind of garden. But what kind? Benign neglect would not be restorative, not with the weeds we have let loose waiting to take over.

Certainly we cannot restore the land to its original state: hemlock forest, sand barren, cedar swamp or tallgrass prairie. We cannot advise Arizonans to plan their gardens around saguaro cacti that take thirty years to reach chest height, or insist that Kansans let their prairie yards be trampled annually by bison, or persuade Californians that canyon fires are ecologically refreshing.

Nor can we look to our own agricultural past for examples. Part of the predicament we are in was caused by rapacious farming practices that left the land denuded of its forests and prairies, and the soil dry, eroded and infertile.

Starting in the 1620s, European settlers systematically clear-cut the forest that had maintained the land in abundance and diversity for 10,000 years. The destruction of the northern conifer forest and prairie grassland was even more rapid and complete than had been the felling of New England.

We can, however, set aside a portion of our yards to plant, if not altogether naturally, then at least in a way not alien to the theoretical ecosystems we inhabit. We have a rare opportunity: Land that is now suburban is for the first time in centuries under no pressure to produce corn or cattle, and so it can recover. It can be encouraged to control its own pests, maintain its own soil, conserve its own water, support its own animals and altogether mind its business with minimal interference.

The first step Marty and I took was timid; we added fruiting shrubs in island beds close to the house. They were quickly noted by migrating birds, and we were emboldened. We joined these small gardens to one another with additional plantings, and brought them toward outlying woodland via thickets, groves and hedgerows. We improved the woods, replanted the pond, and finally wove the whole together with native grass and wildflowers. The project is by no means finished, but the changes we have made so far are working: Berries feed birds as surely as stone walls shelter chipmunks.

These changes are less apparent to the human eye than in the perception of other animals. The land is still landscaped, the gardens are intact, but less is mowed, the choice of plants is different, and thickets have replaced some previously open beds. Although there are fewer flower borders, there are flowers everywhere all year except in winter, when there are berries, holly red and inky black, and grasses, bronze ar gold. Meadowlarks and bluebirds have returned. I have not yet learned to identify all the butterflies.

Although our property is large, these plantings would fit anywhere, a hedgerow instead of a hedge, a meadow instead of a lawn, a wooded grove below a specimen shade tree. Our lots are really larger than we know. A friend of mine, who lives on an eighth-acre lot in a tract development, filled a rear corner with a pocket woods as richly tiered as a full-scale forest. He edged the woods with serviceberries and currants, hawthorns and hazelnuts—good foods for songbirds and small mammals—and combined many other fruitful shrubs into hedgerows that run along the side yards and front of the street. There are beds of native grasses and wildflowers, a meadow of sedges and rushes surrounding a small pool, and even a tiny bog complete with ferns and skunk cabbage. The moist areas are fed by a stream that flows across a tiny lawn. The entire landscape (see plan below) takes up half the lot, a sixteenth of an acre, yet includes three types of ecosystem: woodland, wetland, grassland.

Imagine if the suburban landscape were similarly returned to productivity, to sheltering chipmunks and feeding dragonflies. Take the rectangle of land; reproduce it twenty times; lay the reproductions out in rows; place the rows back to back. See the pattern that emerges: a mosaic of small woodlots edged with thickets, connected by hedgerows, and dotted with flowering meadows. Were the larger landscape of suburbia to be reshaped in this way, as much as half the acreage could be returned to former inhabitants.

It took at least fifty years to erase what Mrs. Dana saw. It will take another fifty years or more to create something again worth seeing. The ecological history of suburbia has yet to be written, and I would like to see it unfold toward a future worthy of another Mrs. Dana.

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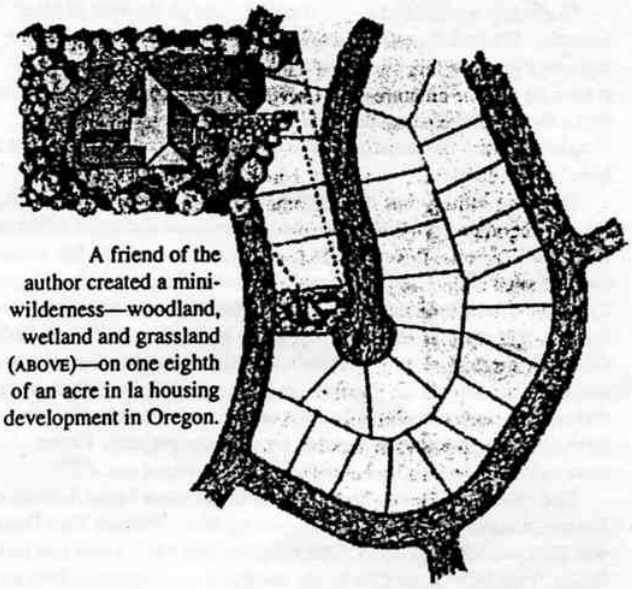

A friend of the author created a mini-wilderness—woodland, wetland and grassland (ABOVE)—on one eighth of an acre in la housing development in Oregon.