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Tear down the wall between us and nature

By Tom Beal

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Editor's note: This is the first in an occasional series on Tucson's big thinkers and their ideas.

Forget global warming.

The real threat to species diversity is not the temperature rise caused by our overproduction of carbon dioxide, but our theft of habitat, says Michael Rosenzweig.

And don't expect national parks and wilderness areas to save the birds and bees and pygmy owls, Rosenzweig says: Species need far more room to roam and evolve than we've set aside.

Rosenzweig, who founded the University of Arizona's department of ecology and evolutionary biology in 1975 and is director of the UA's Desert Laboratory on Tumamoc Hill, is a voice crying for some aspect of wildness in our more civilized settings.

We've erected a wall between ourselves and nature, he says, and we need to tear it down to invite more species to co-exist with our urbanized and suburbanized settings.

If not, he says, we will create the biggest mass extinction in Earth's history.

It's simple math, he says. There is a direct mathematical relationship between habitat area and number of species. The relationship works regardless of climate and for every species.

"Size really does matter," says Rosenzweig. Restrict the range of any plant or animal species, and two things happen: The rate of species evolution slows, and species extinction quickens.

Habitat is shrinking. "The land is still there," Rosenzweig told an audience at a recent installment of the UA's Distinguished Lecture Series, "but we use most of it for ourselves. We use it for our farms and timberlands, for our ranches, for our homes, our businesses, our schools. So our real problem is not that the Earth shrank. It is that we have built a wall to defend nature and paid no attention to what goes on our side of the wall."

Rosenzweig wants us to focus on our side of the wall, beginning with our own backyards.

We can invite nature back into our lives by designing our landscape with species in mind — plant native trees, shrubs, ground cover and flowers that provide food, nesting sites and perches. And stop trimming plants so neatly. Leave that litter where it lies.

Eastern Pima County is crowded and degraded enough to need this approach, he says, but still "so beautiful and so diverse that it hasn't robbed us of our devotion to it."

He envisions our region as the vanguard of a "Reconciliation Ecology"

For more information

• Learn more about Reconciliation Ecology at winwinecology.com

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how it works in real worlD

Adam Ussishkin and Andy Wedel transformed their Armory Park yard into a restoration ecology project three years ago — before they had even heard the term.

They ripped out the oleander and African sumac and planted a variety of plants and wildflowers in their front yard, most of them native to the Sonoran Desert.

They diverted their bath- and shower-water to the side yard, where the closeness of the homes on their Downtown block creates a shaded "canyon," that is now riparian habitat.

Ussishkin calls it a "nice, realistic compromise — promoting species diversity without forcing people to make dramatic alterations to the way they live."

The payoff, said Wedel, comes along with their morning tea and a new daily ritual of trying to name the array of bird, bee and butterfly species that visit.

They have identified a Harris' hawk, Gila woodpecker, vermilion

movement. He coined the term and wrote the book on the concept, which he titled "Win-Win Ecology." When he was named in 2007 to head the Desert Lab, he also established it as the base for the Alliance for Reconciliation Ecology.

If we all join in, he says, "One day, we Tucsonans will wake up every day as if we were on vacation in a great nature reserve."

The rest of the world, envious, will copy us and end the march toward what he predicts will be the eventual extinction of 90 percent of the world's species of plants and animals — not tomorrow, maybe not in 10,000 years, but inevitably if we don't mend our ways.

It's easy to see why some scientists say Rosenzweig's glasses are more than a bit rose-tinted.

Kierán Suckling, who spends his days forcing people to confront the decline of species as director of the Southwest Center for Biological Diversity, doesn't fault Rosenzweig's premise but contests its workability.

"He, in a very unusual manner, is combining a traditional scientific outlook with what might be considered a much more philosophical sensibility. It's interesting and quite unusual in that arena — technically oriented and specific."

The problem, says Suckling, is that the Rosenzweig philosophy downplays the very real need for creating preserves. "He's trying to envision this world where human development and infrastructure seamlessly integrates with the needs of a species, and for some species you can kind of see how you can do that — the habitat generalists, Harris' hawks, javelinas, coyotes."

Many species, though, need to be left alone, said Suckling — pygmy owls, wolves, jaguars, grizzly bears. "He's avoiding the difficult questions."

Rosenzweig readily admits that some species don't co-exist well with humans. "I don't want mountain lions in my backyard. They eat people," he says.

He admits that Reconciliation Ecology creates a form of "unnatural selection" where we humans pick and choose the species we want to see every day.

In fact, the biggest practitioners of his theories sell the concept as a way to attract hummingbirds and butterflies. The Audubon Society of Tucson is on a crusade to create bird habitats by teaching people to use available water sources to create multitiered landscapes in which quail can nest, hummingbirds can suck nectar, and cardinals can perch.

The goal is a city that isn't just populated solely by more adaptable species, such as pigeons and doves.

Other groups in town are creating butterfly gardens or channeling rainwater runoff to denuded city plots that have been replanted with desert species.

Rosenzweig's goal is to involve the entire community in re-creating a more natural environment. Many species live in that sort of landscape, says Rosenzweig. Attract birds and you're sure to get bees and spiders and a host of other species, he said.

Don't get him wrong, Rosenzweig is not opposed to national parks and wilderness areas. He is a firm believer in the threat posed by global warming. He simply delights in raising contrarian notions as a way of dramatically illustrating the need to "tear down the wall" between ourselves and our environment.

He does the same thing with invasive species, those plants and animals brought from a continent that developed them to one in which they have no niche. We tend to get "a little hysterical" about such things, he says.

The tamarisk tree of North African origin, for example, "is not the water-draining horror it's made out to be."

flycatcher, verdin, phainopepla and lots of wrens and warblers.

Wedel said he realizes their yard is an artificial re-creation.

"There is a sense in which this isn't 'natural.' Give up on that word," he said.

"The insistence that a place has to actually be pure and pristine in order to be valuable is actually doing more harm than good. There are so many people on this planet and our footprint is so large that the whole thing is going to turn into a kind of park. Better to make it a habitat and preserve diversity than to let it all turn into oleander, concrete, robins and pigeons," Wedel said.

Wedel concedes that they may just be looking more closely these days, but he is certain many of the species of birds, bees and butterflies they now see did not visit before their new landscaping.

Their native milkweed plants host the caterpillars that become queen butterflies, and a native passionflower hosts the Gulf fritillary. Those join the sulfurs and checkerspots and other species to form "clouds" of butterflies at the peak of the summer monsoon.

They were delighted when a naturalist friend introduced them to Michael Rosenzweig's ideas and the term "Reconciliation Ecology." They now have a name to attach to their project and are spreading the word in the neighborhood, along with seeds harvested from their yard. They have posted explanatory placards on their garden fence.

"One of the nice ideas about Reconciliation Ecology and urban habitat is, if a large enough number of people in a given neighborhood start planting, you start building a larger ecosystem. Then the species that need more than a postage-stamp-sized yard start moving in," said Wedel. "I'd love to see more people do this," he added. "Then, we'll have more fun, too."

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Buffelgrass, another African native and the current public enemy among ecologists and land managers in the Sonoran Desert, is something we should stop fighting, he suggests.

He doesn't like having buffelgrass in our fragile environment, but he says its eradication is a losing battle. It's too established and too difficult to remove from the landscape, he says.

"I'm very upset about it, too," he says. "I'd be thrilled to devote my life to it, if we could eradicate it. But if you fight it and lose, you drain all the conservation energy from an area," he says.

There is, however, one place where Rosenzweig intends to continue waging the buffelgrass fight. Tumamoc Hill, the 860-acre reserve he now directs, will continue its spraying program.

"This (place) is very special," he said on a recent mini-tour of the site. "It is the world's first and oldest restoration ecology project."

The site, in the near-Downtown foothills of the Tucson Mountains, has been continuously studied since the Carnegie Foundation first created it and fenced it off to stop grazing and browsing by burros, sheep and cattle.

"Here we are, 103 years later, still going strong," Rosenzweig said.

Rosenzweig is a newcomer to the Desert Lab. When he was first offered the directorship, he thought it might be a great place to perform some studies in Reconciliation Ecology but quickly absorbed the zeitgeist. This was not a place for experimentation. It is a place for desert species to find safe harbor and evolve, under careful and continuous scientific study.

Someday, if the land around it has been depopulated of species by our lack of action on their behalf, perhaps it will be the reserve from which the desert can be repopulated.

"We get used to stuff," he says. "Unfortunately, we will get used to not having the wildflowers that buffelgrass killed.

"The idea is that, through Reconciliation Ecology, people will become used to better environments and will demand them and protect them."

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