ECOLOGY

Coexistence at the crossroads

Ideology meets infrastructure for road ecologists helping flora and fauna live well in the presence of motorways

Crossings: How Road Ecology Is Shaping the Future of Our Planet
Ben Goldfarb
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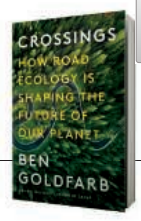


By **Sarah Boon**

When we think of "road ecology," most of us think of wildlife crossings—the overpasses, underpasses, and fences, designed by engineers and biologists to connect fragmented habitats, into which animals are funneled. But road ecology, a relatively new field of science, is about so much more than just wildlife crossings.

In *Crossings: How Road Ecology Is Shaping the Future of Our Planet*, Ben Goldfarb explores the science of road ecology and its impacts on our world. "It's really interesting to meet someone in college who says, 'I'm a road ecologist,'" Washington State biologist Paul Wagner tells Goldfarb. "[I]t's like, huh, I remember when we made that term up [in the 1990s]."

Since that time, the field of road ecology has expanded exponentially, as evidenced by the sheer number of experts Goldfarb interviews. The scientists, engineers, policymakers, and First Nations representatives he talks to are working to help all manner of flora and fauna—from mammals, to reptiles, to fish, to plants, to insects, and even humans—better coexist with roads. Goldfarb's many field excursions with these experts help readers experience road ecology firsthand, revealing how it started and where it is headed.

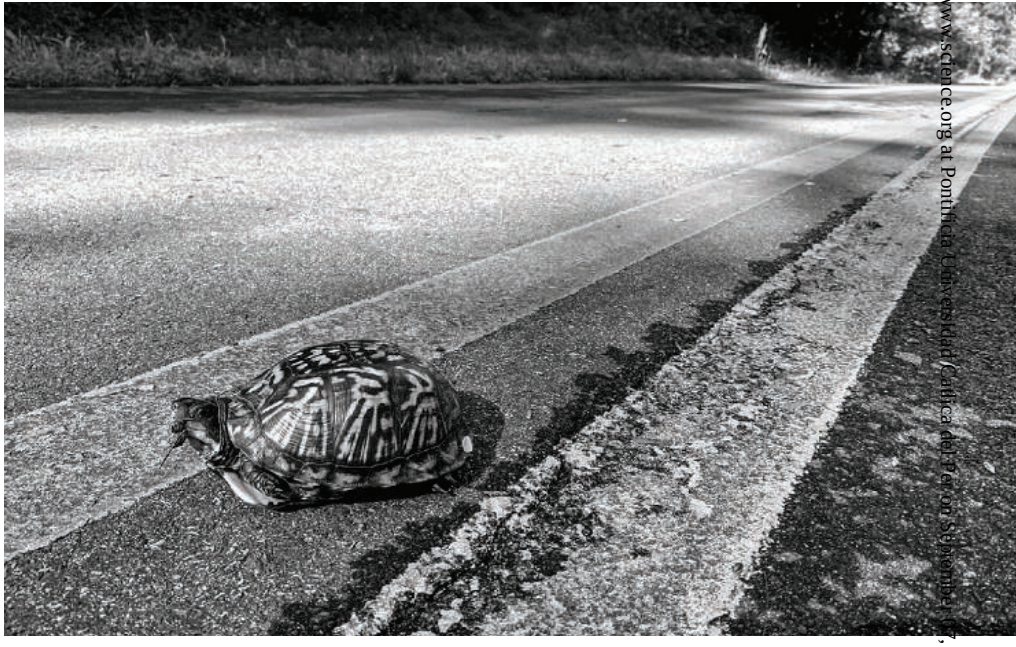
Goldfarb contends that roads are more than mere infrastructure, they are an ideology that promotes sprawl, champions car traffic, and—when they are built in the backcountry—encourages human–animal interactions. "Like abortion or critical race theory, roads [have] become shibboleths, entrenched cultural markers that [distinguish] warring factions," he writes. "The practice of road ecology is not merely a set of engineering principles but a moral mandate." Road ecologists and everyday people who rehabilitate injured wildlife found on roads and shepherd migrating animals across roads answer this mandate.

Roads are problematic in many ways: The number of cars they can support and the driving speeds they enable lead to wildlife deaths, and the noise pollution that often accompanies them changes animal activity such as birdsong. Roads can lead to habitat fragmentation, which isolates individual animals from the rest of their population. Contaminants released from tires and exhaust also affect the near-road environment. Meanwhile, remote wilderness roads enable hunting access, and the increased contact between humans and animals when new roads are built into untracked wilderness can enhance the spread of zoonotic diseases.

"For all of human history, roads have been instruments of conquest," writes Goldfarb, but the Confederated Salish and Kootenai Tribes believe that "the road is a visitor" that should "respond to and be respectful of the land and the Spirit of Place." Culverts that prevent salmon from spawning upstream affect Indigenous people for whom salmon is part of their creation story. New roads built in the Amazon connect "undiscovered" Indigenous groups with the outside world, often without their consent.

Many roads, notes Goldfarb, were ostensibly built to combat "urban blight" in areas that were, in reality, vibrant minority communities. "Freeways were the erasers with which cities rubbed out Black communities and the walls with which they partitioned them from white ones," he writes. Meanwhile, road noise and pollutants disproportionately affect low-income communities and racial minorities.

But not everything about roads is bad. Goldfarb finds that road verges—vegetation next to roads—can help preserve endangered habitats, such as prairies. Verges can also provide insect habitats and are less of a barrier, as they provide habitat that is parallel, rather than perpendicular, to roads. This reduces the likelihood of insects being killed by vehicle traffic.



A box turtle undertakes a perilous road crossing in the state of Georgia.

PHOTO: DAVID STEEN

Roads are growing faster than any other human infrastructure, and although road ecologists cannot stop road building, they can push to be involved in road design. Some strategies that would help mitigate the damaging effects of roads include designing some to be driven on more slowly, closing some at night, and incorporating wildlife overpasses and underpasses as needed.

Crossings is a deeply researched and compelling read, enlivened with interviews and on-the-ground fieldwork. The book offers readers a look behind the scenes of a rich but underappreciated field of study that has the potential to affect our everyday lives. ■

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