

Michael E. Soulé (1936–2020)

Founder of conservation biology, expansive thinker and inspiring mentor.

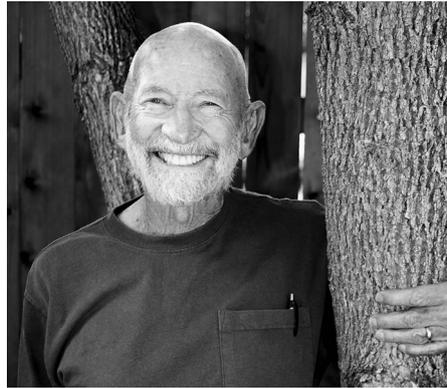
Michael Soulé once made dollars rain from the sky. Of the many stories told about him, this one we swear, is true. It happened in 2000, in Missoula, Montana, at the Society for Conservation Biology (SCB) annual meeting — a society he had co-founded and presided over more than a decade earlier. These were the doldrums years for the field, where initial exuberance had given way to navel gazing and circular arguments about the role of science in advocacy. Michael, a scientist by training but an activist at heart, thought of conservation biology as a discipline with a deadline. He wanted the SCB to set up a policy-focused office in Washington DC to advocate for conservation.

At the packed closing session, Michael gave an impassioned speech. Then he asked everyone who agreed to seed the DC office by reaching into their pockets for a dollar bill. As we three ran down the aisle collecting fists full of dollars, more bills started fluttering down, flung by an exuberant audience in the balconies. Michael, on stage, stood immaculate, with a small smile on his face — a lion back on familiar ground.

Michael Ellman Soulé, the last name he took from his adopted father, was born in 1938 in San Diego, California. His playgrounds were the arid chaparral canyons that defined the area. He watched this landscape become surrounded and fragmented by housing development; habitat islands that lost their biological diversity first slowly, then suddenly. These lessons stayed with him as he developed new fields of research into fragmentation, minimum viable populations, connectivity and carnivores as keystone species.

Michael completed his PhD, in 1964 at Stanford University, studying the side-blotched lizard with Paul Ehrlich. When Paul visited Michael in Africa, where Michael had just helped found the first university in Malawi, they were nearly thrown in jail for being critical of the apartheid government of Rhodesia (now Zimbabwe) where they had gone on safari. It was an early sign of Michael's forward-thinking boldness.

In 1979, as a professor of biology at the University of California San Diego, and midstream of a promising academic career studying genetics and evolution,



Michael E. Soulé (1936–2020). Credit: image courtesy of Rita Hines Claggett

Michael quit. Dismayed at what he saw happening to nature, to his beloved canyons, he pursued Buddhism, becoming the Director of the Kuroda Institute for the Study of Buddhism in Los Angeles for five years. Buddhism and meditation would remain a touchstone throughout his life.

But leaving earthly problems behind was never going to fit Michael, and he soon returned to academia as a professor at the University of Michigan, and in 1985 he co-founded the Society for Conservation Biology. The publication of four books edited by Michael in that decade firmly defined the ambition and scope of the new field: *Conservation Biology: An Evolutionary-Ecological Perspective* (1980), co-edited with Bruce Wilcox; *Conservation and Evolution* (1981), co-edited with Sir Otto Frankel; *Conservation Biology: The Science of Scarcity and Diversity* (1986); and *Viable Populations for Conservation* (1987). In these volumes, he captured the work of the giants of the new field, including novel applications for population genetics, ecological modelling and species distribution modelling, as well as philosophical and ethical discussions on topics such as the value of nature. Here we see Michael's genius — ahead of his time, inclusive, expansive and unafraid in his thinking.

One of us (L.S.M.) began his PhD with Michael during this period at the University of Michigan. His favourite places to meet were in Ann Arbor pubs. Over tequila Michael would propose audacious

questions across the boundaries of distinct fields: “How could studies of gene flow, demography, and island biogeography guide continental-scale conservation?”; “How do we unravel the vortex of causes that drive extinctions?”. Across it all was the radical idea of conservation biology itself, that Michael insisted must bring together separate (at that time) disciplines: evolution, physiology, ecology, biogeography, veterinary medicine, social sciences, wildlife biology and eco-philosophy¹.

When we consider Michael's 10 books and >170 published papers, we think that an essay² in the first volume, second issue, of the SCB's journal, *Conservation Biology*, may best represent his brilliance. It wrestles with an invitation from colleagues in South Africa to consult on maintaining viability of endangered wildlife. South Africa was under an apartheid regime and Nelson Mandela was still in prison. Confronting the ethical conflict between acting on behalf of endangered species versus promoting human rights, Michael describes how an exchange with Archbishop Desmond Tutu helped him make the difficult choice not to attend. When one of us (M.S.) was looking for a graduate advisor in 1990, it was this essay that convinced him, as a person of colour, that Michael would encourage independent thought and be welcoming to someone who many at the time, and depressingly some even today, would say did not ‘fit’.

Michael's final years in academia, starting in 1989, were spent as professor and Chair of the Environmental Studies Department at the University of California Santa Cruz, advising two cohorts of graduate students (including us) and running a productive lab.

These were the days that we remember most fondly. His workload as a scientist, author and administrator never cut into time devoted to us. Evening seminars at his home ran late into the night, his rule being that the evening could not end until we could describe at least one good thing about the assigned reading, even if the takeaway was how not to write a paper. He insisted upon logic, and the precise use of language. He taught, by example, that criticizing an idea was easy, but to build upon it was far more important. And he would take us on trips, often south of the border to Baja and the islands that dotted the Sea of Cortez, to collect lizards, snakes and small mammals,

to read indecipherable philosophical texts, and to talk.

Michael took great satisfaction in exposing us to new ways of seeing the world. When one of us (M.S.) had the opportunity to spend summers working for the World Bank in Washington DC, he encouraged it, understanding non-traditional experiences were gateways for a new field. When another (K.R.C.) was careful to call himself an 'ecologist', concerned that the label of 'conservation biologist' was too radical for a graduate student intent on pursuing an academic career, Michael, the father of conservation biology, exhibited paternal patience and understanding. Needless to say, by the end of the PhD programme, concerns had evaporated, and the moniker 'conservation biologist' was worn as a badge of honour. We can trace our passion, our dedication for conservation, our commitment to the next generation, directly to our years with Michael. Countless others would say the same.

In 1991, Michael helped launch his most ambitious project yet — The Wildlands Network — an effort to map and connect wild areas across North America. At a time

when conservation non-profits focused on saving individual species or protecting relatively discrete, small patches of biodiversity, Michael understood that scale and connectivity were needed. He knew that the sixth great extinction was upon us and was early to recognize the existential threat of climate change. Today, large-scale conservation is mainstream thinking and has gained support across the world.

Michael retired in 1994 to Western Colorado. He embraced the west in his own unique way. He was proud to show off his rifle but would cry when describing the deer and elk he killed for food. He travelled and river rafted, spoke at conferences, and worked on a manuscript describing conservation as an ethical pursuit, defined by a moral dilemma originating from the evolution of human sin and selfishness.

In this he left many of us, and sometimes himself, grasping at an idea that was not quite fully formed, that existed at the periphery of his logic. It evaded him in the end, as is sometimes the nature of big, bold ideas. Perhaps that is why he intensely felt the burden he placed on the next generation, and dedicated his classic 1986 *Conservation*

Biology book to “the students who will come after, who will witness the worst and accomplish the most”.

And the most, Michael made unapologetically clear, is what is now required of all of us, for our sakes, on behalf of all non-human life on Earth. □

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2. Soulé, M. E. *Conserv. Biol.* 1, 173–174 (1987).

Additional information We three were graduate students at the University of California Santa Cruz, with Michael E. Soulé as our PhD advisor and collaborator. Each of us owe the foundations of our career to him.