



Michael Soulé (1936–2020) on spirituality, ethics, and conservation biology

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Abstract: Michael Soulé is best known for his scientific contributions and central role in founding the Society for Conservation Biology and its flagship journal. Less well known are his childhood experiences, his affinity for Zen Buddhism and Arne Naess' deep ecology philosophy, and his contributions as an environmental activist to efforts to protect biodiversity and rewild ecosystems. Also less well known is the extent to which he was an interdisciplinary environmental studies scholar, struggling to understand what promotes and hinders proenvironmental behaviors. In this regard, his life and that of many other conservation scientists provide important clues, but no easy answers. By attempting to integrate the humanities, with its quest for a meaningful and fulfilling human existence, with naturalistic nature spirituality and ecocentric values, as well as the social and natural sciences, Soulé sought to solve the riddle as to why human beings seemed unable to understand, slow, and halt negative anthropogenic environmental change. He thus modeled what interdisciplinary environmental studies is at its best. Those advocating the conservation of biological diversity have much to learn from Michael Soulé, not only from his scientific findings but also from his way of seeing, the questions he asked, and his love of the living world.

Keywords: biodiversity, biophilia, deep ecology, ecocentrism, kinship, religion, Society for Conservation Biology, worldviews

Michael Soulé (1936-2020) y Su Visión de la Espiritualidad, la Ética y la Biología de la Conservación

Resumen: Michael Soulé es más conocido por sus contribuciones científicas y su papel central en la fundación de la Sociedad para la Biología de la Conservación y su publicación estandarte. Pocos conocen sus experiencias durante la niñez, su afinidad por el budismo Zen y la filosofía de ecología profunda de Arne Naess y sus contribuciones como activista ambiental para la protección de la biodiversidad y la refaunación de los ecosistemas. También es poco conocido el nivel que alcanzó como académico en estudios ambientales interdisciplinarios, siempre luchando por entender qué promueve y qué obstaculiza los comportamientos proambientales. Es en este aspecto que su vida y la de muchos otros científicos de la conservación proporcionan indicios importantes, pero no respuestas fáciles. Cuando intentó integrar a las humanidades, siempre en búsqueda de una existencia humana significativa y gratificante, con una espiritualidad naturalista de la naturaleza y los valores ecocéntricos, así como con las ciencias sociales y naturales, Soulé buscaba resolver el acertijo de por qué los humanos parecen incapaces de entender, disminuir y detener el cambio ambiental antropogénico. Fue así como modeló lo que son los estudios ambientales interdisciplinarios en su mejor expresión. Quienes defienden la conservación de la biodiversidad tienen mucho que aprender de Michael Soulé, no sólo a partir de sus descubrimientos científicos sino también de su manera de ver el mundo, las preguntas que hacía y su amor por el mundo viviente.

Palabras Clave: afinidad, biodiversidad, biofilia, ecocentrismo, ecología profunda, formas de ver el mundo, religión, Sociedad para la Biología de la Conservación

Introduction

Michael Soulé, who served as founding president of the Society for Conservation Biology (SCB), died on 17 June

2020 at the age of 84, a few days after suffering a brain hemorrhage. An eminent scientist, Soulé is widely considered the preeminent founding figure in the development of the field of conservation biology. Less well

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known is the role his naturalistic (i.e., science and experience based) nature spirituality played in shaping both his science and life as passionate defender of Earth's biological diversity.

I interviewed Soulé in person in 1993 (Taylor 1993) and subsequently had periodic communications with him by email and telephone, and I interviewed his wife, June Soulé, shortly after his death (on 17 July 2020). I drew on these conversations and other sources (Takacs 1996; Jones 2003; Taylor 2005; Meine et al. 2006; Taylor 2010; Fisher 2020; McNulty 2020) and examined his contributions to the biological sciences as well as to interdisciplinary environmental studies. I cite these sources only when quoting them directly or when I learned something only from them rather than through my own archival or field research. Herein, I have sought to illuminate the role that his affective and spiritual perceptions played in his personal and professional life.

Childhood Wanderings, Professional Biology, and Zen Buddhism

Soulé was born in 1936 and grew up in San Diego, California. With a number of other nature fanatics, as he described his childhood friends, he wandered and reveled in the region's biologically rich chaparral and marine ecosystems. Pursuing this passion in college, he earned a degree in zoology in 1959 from San Diego State University, followed by a PhD in biology in 1964 from Stanford University, under the famed ecologist Paul Ehrlich.

As a young man, Soulé became a student and practitioner of Zen Buddhism. One day while still in graduate school, after a dozen years of sitting meditation in which he had no profound spiritual experiences, he had what may be the most archetypal of mystical moments: an oceanic experience through which his ego evaporated and he felt he had become a part of everything. Interestingly, the message he received during the experience, that "we're all one," was communicated to him through trees. This was an experience that I have called naturalistic animism, namely, a conviction "that beings or entities in nature have their own integrity, ways of being, personhood, and even intelligence"; sometimes, this includes a perception that "communication and/or even communion with such intelligences or lifeforces" is possible (Taylor 2010).

After graduating from Stanford, Soulé taught in Malawi from 1965–1967, before assuming a position at the University of California, San Diego where, between 1967 and 1979, he rose to full professor. While there, in 1978, Soulé organized the ambitiously titled First International Conference on Conservation Biology. The conference and subsequently published book signaled the emergence of the new field (Soulé & Wilcox 1980).

Although his career was highly successful, Soulé was not content. He was distressed over the nearly 5-fold increase in human numbers in his home bioregion and the concomitant and devastating impact this was having on the region's ecosystems, which threatened many species with extinction. He was also fed up with the values and conflicts endemic to academia, so he resigned and moved to the Zen Center in Los Angeles, California. There, between 1979 and 1983, he served the director of the Kuroda Institute for the Study of Buddhism and Human Values.

Soulé had been drawn to Buddhism for a number of reasons, in part to cope with the stress of his hard-driving academic career; in part because of its emphasis on interconnection, compassion, and overcoming ego; and also due to his understanding that Buddhism rejected simplistic, dualistic, black-and-white thinking. These notions cohered with his scientific approach to the world, his rejection of anthropocentrism and feelings of belonging to nature, and his empathetic nature (a virtue commonly noted by those who knew him).

While at the center, in 1981, he orchestrated another conference, this one focused on religion and ecology. Soulé was convinced, as many environmental studies scholars have been, that religions deeply condition attitudes and behaviors (Glacken 1967; White 1967; Taylor et al. 2016). Consequently, Soulé remained interested in this area of enquiry his entire life. He tried to puzzle out the riddle of whether, and if so how, human cultures might evolve in ways that respect the entire biotic community. Indeed, when interviewed in December 1992, Soulé asserted that biophilia (Wilson 1984; Kellert & Wilson 1993) was necessary for biodiversity conservation. He added that for biophilia to grow strong enough to succeed, "it must become a religion-like movement. Only a new religion of nature ... can create the political momentum to overcome" the anthropocentrism and greed that underlies the destruction of nature (Takacs 1996). In this, Soulé echoed his mentor Paul Ehrlich, who had earlier asserted that a new, "quasi-religious movement," that fused ecological principles and a deep ecological empathy for all life, was needed for both conservation and even for "the persistence of our civilization" (Ehrlich 1986).

Despite his view about the importance of affect and religion to conservation, Soulé was not content at the Zen Center. He told me that he had no significant spiritual experiences while meditating during those years and grew frustrated with the religious fundamentalism and social dysfunction that he encountered there. It was also a wrenching time for him because during those years he and his wife were drifting in different directions, she more deeply into Buddhism, eventually becoming an abbot of a Zen Monastery (Jones 2003), while he, always the scientist, returned to academia, assuming a position at the University of Michigan between 1984 and 1989.

Founding the Society for Conservation Biology and Its Journal

While at the University of Michigan, in 1985, Soulé orchestrated the Second International Conference on Conservation Biology. For it, he invited the Norwegian philosopher Arne Naess to give the keynote address. Beginning in the early 1970s, Naess advanced a spiritually eclectic, ecocentric philosophy, which he termed deep ecology (Naess 1973; Naess & Rothenberg 1989).

Naess's perspective was shaped by animistic experiences in childhood, where he perceived that he was in communication and communion with nonhuman organisms (Naess 1984). His philosophy was also influenced by his own idiosyncratic understanding of the Vedas. Soulé, who resonated with deep ecology, told me that he invited Naess to keynote the conference "because I felt he provided a better philosophical foundation for conservation and biodiversity than anybody since [Aldo] Leopold." Noting that he and Naess spent considerable time together exploring California's wildlands, Soulé mentioned that they had become good friends and he emphasized that Naess became a "major influence on my life" (Taylor 2005).

It is difficult to overstate how innovative it was for a meeting of biologists to have at its centerpiece Naess's ecocentric moral philosophy, nature spirituality, and activist inclinations. Indeed, introducing values, let alone those grounded in or expressed in spiritual tones, was controversial then and now, as Soulé well knew. When I interviewed him in 1993, aware of my interest in the affective and spiritual experiences that animate many conservation scientists, he worried that the kind of analysis I was undertaking "might be used by the enemies of conservation to discredit conservation biology as somehow pagan" (Taylor 2005).

A year after the Second International Conference on Conservation Biology, the Society for Conservation Biology was established. Soulé, who had led that effort, as well, was elected its first president. Society founders believed that it was possible to blend rigorous science with value-driven conservation that is willing to overtly care about preserving biological diversity (broadly understood to include ecosystems, species, and genetic diversity). David Ehrenfeld, who had helped kindle the discipline with the publication of *Biological Conservation* (1970), was appointed editor of the society's new journal, *Conservation Biology*. Its first issue was published in 1987.

Ehrenfeld's appointment was especially telling for what it said about the ethics common among the new society's leadership: Nearly a decade prior to the publication of the inaugural issue of *Conservation Biology*, Ehrenfeld had published a passionate attack on anthropocentrism titled *The Arrogance of Humanism* (1978).

In it, he argued that the notion of humanism itself, and the attitudes and hubris that typically accompanies it, has had devastating impacts on the natural world (Ehrenfeld 1978). Although Ehrenfeld demurred from calling himself a deep ecologist (he considered the term too amorphous to embrace), he understood why, given his anti-anthropocentrism, that he had become "sort of a hero to some of the deep ecologists" (Takacs 1996).

Despite the explicitly or implicitly ecocentric values animating many of the society's leaders, the inaugural issue *Conservation Biology* made clear its hybrid scientific and value-driven mission: "to help develop the scientific and technical means for the protection, maintenance, and restoration of life on this planet—its species, its ecological and evolutionary processes, and its particular and total environment" (Meine et al. 2006). Several prominent environmental groups endorsed this vision by provided funding for the fledgling society.

Soulé's accomplishments as a scientist and academic entrepreneur, as well as his interdisciplinary interests, help explain why in 1989 he was hired as chair of the Environmental Studies Department at the University of California, Santa Cruz (UCSC). For the next 5 years, he led an effort to launch a doctoral program in Environmental Studies, which was inaugurated in 1994. It was the first such program in the University of California System. His interests in the cultural dimensions of environmental behavior continued.

During those years, with his UCSC colleague Gary Lease (Soulé & Lease 1995), Soulé edited and contributed to a trenchant critique of arguments made by an influential group of postmodern theorists led by historian William Cronon (1995b). Cronon's own contribution to the volume he had orchestrated, "The Trouble with Wilderness" (1995a), became famous and influenced a generation of environmental humanities scholars. For his critics, the article was infamous, a straw-man assault on the idea and practice of wilderness conservation.

With regard to the overall approach of these so-called postmodern critics, Soulé argued that they failed to recognize the difference between imperfect scientists and the eventually self-corrective scientific method. Soulé was especially critical of Cronon's views about wilderness, which he considered a pernicious argument that eroded support for nature reserves (Soulé 1995). Debates about the idea and practice of wildlands conservation continued in the inaugural issue of *Environmental History*, which began with a reprint of the aforementioned article by Cronon, followed by critiques from prominent historians, philosophers, and conservationists, and concluded with Cronon's rejoinder (Cronon 1996). The highly contentious debates continued in several subsequently published books (Callicott & Nelson 1998; Butler 2002; Nelson & Callicott 2008).

Connections with Environmental Activists and Rewilding Projects

I first heard about Soulé the year he moved to Santa Cruz when I began research into North America's radical environmental movement. I soon learned that the branch of that movement led by Dave Foreman had drawn deeply on the work of 2 conservation biologists, Soulé and Reed Noss. Noss was a rising star among the growing number of self-identified conservation biologists who, only 5 years after earning his PhD in wildlife ecology at the University of Florida, was appointed the second editor of *Conservation Biology*, a responsibility he held through 1997. Like Soulé, Noss found deep ecology compelling; and like both Naess and Soulé, Noss also perceived affinities between his moral sentiments and aspects of religions in Asia, in his case, especially Daoism. While Foreman was still in charge of the radical environmental journal *Earth First!*, which was between 1982 and 1989, and while still in graduate school, Noss published several articles in *Earth First!*; he also established and wrote for a regional, radical environmental newsletter (e.g., 1983, 1984, 1985, and 1988). In these articles, Noss introduced readers to conservation biology, defended science against those who blame it for fostering dualistic, antinature ideas and practices, criticized environmentalists for having insufficient ecological understanding and thus misguided strategic priorities, and argued that Daoism and deep ecology support biocentric values and even, sometimes, extralegal direct action in defense of biodiversity.

A schism in the radical environmental movement reached its climax at the end of the 1980s. It resulted, in part, from disputes about whether the movement should prioritize science in its strategies and tactics. At that point, Foreman and the more scientifically inclined participants in the movement, led by Noss, left *Earth First!* Soon afterward, they established a new journal, *Wild Earth*. Soulé, who knew Foreman but had not been involved with *Earth First!*, joined the new effort and then, with Noss and Foreman and several other activists and scientists, Soulé cofounded The Wildlands Project. This ambitious initiative drew on geographic information systems technologies, which were then newly invented, to map and propose wilderness core reserves, buffer zones surrounding them, and connecting corridors between them. Conservation based on such prioritization and mapping, the project's architects argued, is necessary to preserve biological diversity.

Soulé served as the project's initial science director and later, as the president of its board of directors. Noss served as science director from 1992 to 1996, wrote the seminal article explaining the project's vision (Foreman & Davis 1992; Noss 1992), and between 2002 and 2004 served as the project's chief scientist. The project was later renamed the Wildlands Network (Fisher 2020

[cf. <https://wildlandsnetwork.org/>]), which has kindled grassroots and legislative efforts to protect and connect wildlands. The project also inspired *Yellowstone to Yukon: The Wildlands Project*, a widely viewed documentary (Underwood 1997; Gatewood 2000). Another initiative led by Foreman and inspired by Soulé is the Rewilding Institute (<https://rewilding.org/about-tri/>).

Nature Spirituality and Kinship Ethics

Much more could be said about Soulé's contributions as a scientist and activist and the many honors he received. My priority, however, is to illuminate the affective and spiritual perceptions that gave rise to Soulé's scientific and ethical passions.

In my view, Soulé exemplifies a kind of spirituality that is deeply immersed in the sciences as well as the intuition central to deep ecology, that all life has intrinsic value. For Soulé, however, it is difficult to know where science ends and intuition begins because he seems to deduce his intrinsic value theory directly from science, as when he echoed Leopold: "There is now no question that all life on earth evolved from a common ancestor... every living kind of plant and animal owes its existence to a single-celled ancestor that evolved some three and a half billion years ago. All species are *kin*" (Soulé 1995).

Some would label this kind of science-rooted worldview religious naturalism, in which experiences of awe and wonder, including that which comes through scientific enquiry, evoke reverence for Earth's living systems. I have termed such worldviews *Gaian naturalism* to emphasize that ecological understandings of interconnection and organicism are typically informed by the sciences (Taylor 2010). Whatever the terminology, such worldviews are rooted in sensory experience (including as enhanced by scientific methods and technologies), as well as in intuition. And such worldviews have affinities with some aspects of longstanding philosophical and religious traditions. This helps explain why many environmental scientists and advocates have been drawn to worldviews they come to believe are, or can be, ecologically beneficent, especially Buddhism, Daoism, and indigenous traditions. But for Soulé and Noss, whom I mention here because I see them as kindred spirits, their affinities with Buddhism or Daoism, respectively, are selective; many traditional beliefs and doctrines are simply left aside. Their interest in these traditions has been, to a significant extent if not foremost, as a way of seeing things, a way that is both sensory and thus scientific. And their sensory experiences, through direct engagement within ecosystems and with their inhabitants, have kindled their intuitions about the intrinsic value of the world. When reading a draft of this article in July 2020, Noss stated that he found this interpretation accurate.

Among other places, I found evidence for this interpretation in answers about their spiritual and ethical experiences, which Noss and Soulé expressed to David Takacs during their 1992 interviews with him. Although then, as well as in 2020, Noss readily acknowledged that, although he finds valuable certain ideas and practices rooted in Daoism and Zen Buddhism, he does not consider himself religious in any traditional sense. Rather, as he told Takacs, his views are rooted in the awe, joy, and connection he feels when in wildlands. Moreover, he surmised, based on his own experiences among biologists, what could be seen as a reasonable hypothesis: most biologists are motivated by similar experiences (Takacs 1996). When responding to a similar line of questioning, when Takacs directly asked Soulé whether he considered himself a Buddhist, Soulé answered, “I don’t know. It’s a fair question.” Soulé continued, explaining that he had affinity with “a lot of Buddhist ideas and ways of seeing things” but then noted that he does not believe in reincarnation. Of course, many consider belief in reincarnation to be the *sine qua non* of Buddhism, and such beliefs are also commonly found in other religions that originated on the Indian subcontinent. Then, Soulé stressed that for him, Buddhism was foremost a way to see the world more clearly, and he explained that his Zen practice helped him to trust his intuitions (Takacs 1996). One of these intuitions cohered with a statement that Naess memorably and often made, that every species should be “allowed to continue its evolution and to live out its destiny” (Takacs 1996).

Soulé’s recognition of biological kinship among all species was, in my view, directly related to his embrace of the idea that all species should be allowed to fulfill their evolutionary destiny and his life-long passion to prevent extinctions. It was not that he failed to recognize that extinctions are an inevitable part of Earth’s evolutionary processes. Rather, I think it was because he recognized that any species that evolution has endowed with a conscience and awareness of their impacts in the world ought not precipitate the extinction of other species. Here, I may be moving beyond where Soulé’s thinking had gone, but I think it flows quite naturally from it. As I have argued elsewhere, while we properly understand that our most profound obligations inhere to our closest human relatives, and some would say even to our own species, this does not mean we have no responsibilities to our distant relatives, human and not. We simply have to enact those responsibilities differently: “We properly care for our closest relatives personally and for distant ones through collective action including political engagements. There is no obstacle to kinship ethics as a basis for caring about the entire web of life” (Taylor 2017).

Meaning, Contentment, and Melancholy

In 1995, the same year Soulé and Lease (1995) published their book challenging postmodernism, Soulé retired from his faculty position and moved to Paonia, Colorado. He sought to be near wildlands that were more intact than those that remained in California. He continued, however, to do research, give lectures, and provide advice to those building academic programs and environmental organizations.

He also continued to criticize the growing chorus of voices charging conservationists with insensitivity to, if not also complicity, in colonialism, racism, and poverty. While applauding humanitarians, Soulé noted that only a tiny fraction of charitable giving (drawing on available data he estimated a mere 0.5%) went toward the conservation of biological diversity (Soulé 2014). Then, taking aim especially at the self-proclaimed new conservationists and ecomodernists, he noted that critics of wildlands conservation typically privilege human interests at the expense of wild nature, reflecting the overarching tendency of most humans to put their own interests first, even at the expense of widespread extinctions (Soulé 2014; Wuerthner et al. 2014).

During the years following his retirement, in addition to enjoying time in relatively intact ecosystems, especially in Colorado and Baja California, Soulé became all the more interested in the riddle of why so few human beings seemed to notice and care about the extent to which they were destroying the world and precipitating extinctions. According to June Soulé, after his retirement, her husband spent a great deal of time, drawing on the latest evolutionary and cognitive science, trying to understand the role of the so-called 7 deadly sins in human behavior. Although he thought pride and envy might be more culturally than biologically rooted, based on the latest available science, he came to believe that greed, anger, lust, gluttony, and sloth are firmly in the human genome because they have helped our species adapt to their habitats, in different ways promoting survival and reproduction. Then, he sought to answer, in the light of growing human numbers, affluence, and technological power, and given those biological traits, whether humankind could create adaptive and resilient socioecological systems (Miller 2020). This was for him an area of intense interest, and largely new to him, so it is understandable that he eventually set aside this daunting project in favor of enjoying his remaining days with his wife and family.

Soulé especially liked a book by Stephen Batchelor titled *Buddhism without Beliefs* (Batchelor 1997), according to his wife, June. In it, Batchelor argued that before the Buddha’s teachings were combined with polytheistic

beliefs and before most Buddhist societies became preoccupied with reincarnation, Buddhism provided a humble and agnostic approach to life and truth seeking. Thus, the aboriginal Buddhism, according to Batchelor, was closer to godless secularism than the highly religious forms it typically, and subsequently, assumed. It is little wonder then that Soulé preferred Zen to Tibetan Buddhism, the latter of which is replete with deities and metaphysical convictions about reincarnation.

In 2003, Lisa Jones interviewed Soulé for a prominent Buddhist magazine. In it, he went deeper into his on-and-off Zen practice. After leaving the Zen Center, he told her, he did not meditate for 18 years. He also discussed what he most valued in Buddhism: its notions of interdependence and nondualism, its practices that can erode ego, its insight that “happiness comes from generosity and living simply,” its “precept of nonharming” (Jones 2003). But Soulé gave the no-harm precept an innovative ecological spin by becoming a hunter.

Generally speaking, Buddhists apply the precept about committing no unnecessary harm to individual, sentient, beings, which leads many Buddhists to vegetarianism and some to veganism. Soulé, however, argued that given the current extinction crisis, in which the widespread extermination of predators has led to “skyrocketing populations of herbivores, with disastrous ecological consequences,” hunting causes less harm than many other ways that humans acquire food. Hunting can, for example, reduce the suffering of starving ungulates when they have exceeded the carrying capacity of their habitats, while simultaneously reducing the ways such populations degrade those habitats and sometimes even threaten species. Moreover, for meat eaters, consuming such animals is better than supporting the ecologically devastating industrial food system.

Like all religionists with regard to their traditions, at least to some extent, Soulé was cherry picking Buddhism. Soulé especially liked Ashoka, “the first Buddhist king of India” who, he said, issued rules to stop nature-damaging behaviors. These rules were called “Pillar Edicts ... because they were written on pillars and put around the countryside” (Quammen 1996). This is but one example in which Soulé emphasized an aspect of Buddhism that he liked because it fit his evolutionary and ecological worldview.

Although Soulé did this in an innovative way, however, he was far from the only one whose worldview has been a bricolage, an amalgamation of scientific understandings and insights borrowed from Earth’s diverse philosophical and spiritual traditions. These bits and pieces Soulé assembled during his life-long quest to construct a meaningful and holistic understanding of the beauty and value of the living world.

During the last decade of his life, Soulé was dealing with the health problems that eventually led to his death. According to his wife, however, he was happy and did

not fear, nor did he persevere, on death because he considered it to be an inexorable part of Earth’s marvelous evolutionary processes. Rather, throughout his life, what Soulé was distressed by was the extinction of species. He put it in an aphorism for which he became well known among his friends and colleagues: He was not worried about deaths but the lack of births.

The melancholy that Soulé expressed through this aphorism provides a poignant way to sum up the concerns that animated his remarkable life.

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