

The ecology of grief

For one species to mourn the death of another is a new thing under the sun.
—Aldo Leopold (1949, p. 110)

[One] who remains passive when overwhelmed with grief loses [the] best chance of recovering elasticity of mind.
—Charles Darwin (1872, p. 366)

Henry Mitchell titled his gardening column in the *Sunday*, 8 April 1990, *Washington Post*, "The demise of the dogwood." He wrote the column shortly after the dogwood anthracnose (*Discula destructiva*) was first detected in the Washington area. It had been killing trees in New England and on the West Coast since the late 1970s and was already widespread in the Great Smoky Mountains. Mitchell interviewed Jay Stipes, an extension pathologist at Virginia Polytechnic Institute and State University in Blacksburg, who feared the disease could "annihilate the species."

Mitchell's column stunned me. Memories of dogwoods came flooding back. Nonbotanists think botanists identify trees in winter by magic. But distinctive flower buds are part of the secret. Surely many plant taxonomy students, facing their first test in winter botany, remember dogwoods' readily identifiable buds with a fondness like my own. Other University of Georgia graduates, I am sure, remember Athens adrift in pink and white flowers in the spring. A fellow graduate student, a Californian, referred to "dogwood clouds," and I remember her image every year when the dogwoods bloom in Washington. Also, I remember my first wild dogwoods. Across a southern Illinois field, a few gloriously white-blooming trees stood against a backdrop of

dark pines. I was doing field work with the man I loved, and those wild trees blossomed in my heart, too.

Now, I have been following news of dogwood anthracnose for several years. Why, I wonder, did this bad news for the environment hit me so hard? Why do I want to commemorate the dying trees? I am an ecologist. Also, I am a trained hospital chaplain and chaplains are experts on death, dying, and grief. Finally, I realize: I am in mourning for these beautiful trees.

My realization was slow in coming because almost all of the literature on grief regards human death. However, a significant number of professional veterinary societies and veterinary schools now research pet loss and counsel grief-stricken pet owners. Their work shows the similarity between grieving for the human members of our families and for the animals to which we are attached (Rosenberg 1986). Additional research indicates that other types of loss also cause grief. Reactions to the loss of an arm or leg and the loss of a home show similarities to the loss of someone we love (Parkes 1974). Reactions to job loss are much the same (Borgen and Amundsen 1984, cited in Herr 1989).

Generally, mourning has certain recognized (if disorderly and chaotic) phases. Davidson (1984) put it in terms even a scientist could love: graphs showing the progression, over a two-year period, from the shock and numbness of the initial weeks of bereavement, to the months in which yearning, then disorientation predominate, to the longest period in which people reorganize their lives, internally and externally. At first, acceptance of death is intellectual. The later steps are often more difficult but just as critical to recovery. These include emotional acceptance and the reshaping of oneself and the outer world to reflect the new reality (Parkes and Weiss 1983).

During this period, feelings of sadness, anger, depression, and despair are common. Dogwood anthracnose stirs all these feelings in me. This disease also reminds me that no one becomes an environmental biologist for money: this science is a labor of love.

For the love of species and places

Biologists often love their organisms. Ecologists often love their field sites. Does anyone really doubt it? Read E. O. Wilson's work and speculate how he feels toward ants. Watch Jane Goodall interact with chimpanzees and ask what she feels for them. Read some of George Woodwell's essays, or Rachel Carson's, and gauge the depth of their passion. Listen to graduate students when they return from the Organization for Tropical Studies' field sites in Costa Rica and hear their awe, delight, and tenderness for the land. Probably others feel the same about Hubbard Brook and Coweeta; the mountain research stations in Crested Butte and Nederland, Colorado; Warren Woods and the biological station at Douglas Lake in Michigan; and all the other beautiful places we have studied, done research, and taught.

Personally, this attachment sometimes still embarrasses me. I was recently asked, in a television interview, how I felt about melaleuca (*Melaleuca quinquenervia*), the nonindigenous tree that is displacing native vegetation in and around Everglades National Park. Colleagues and I had been examining melaleuca-caused problems, and I had already answered the predictable questions on the nature and severity of the trees' effects and what should be done. But how did I feel about the tree? I answered laughingly that, as a botanist, I had to admire a tree that was so successful. I

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could hear the enthusiasm in my voice. Later, I repented my candor and prayed the editor would not make me look like an insensitive fool.

This passion, this ability and willingness to admire and care about other species and places may be among biologists' most admirable features. Our attachments may even be necessary and important. Nobel Prize-winning geneticist Barbara McClintock speaks about her "feeling for the organism," how intimately she knows the individual corn plants that comprise her research projects, and how much she enjoys that close knowledge. "Good science cannot proceed without a deep emotional investment on the part of a scientist," concludes McClintock's biographer Evelyn Keller (1983, p. 198).

The factors that influence what work we choose and love are complex and psychological, as well as social, economic, and political (Herr 1989). These factors make biologists' attachments to nature complicated and deep. For example, I learned to be competitive at the knees of a much-older brother and sister. Now, I laugh that my dissertation was on plant competition, a topic on which I evidently felt some long-standing expertise. Washington is filled with agricultural policy analysts who, like me, found a professional way to remain connected to our rural roots.

Sometimes attachment to nature fills unmet by other people. Sylvia Earle, the oceanographer, found, among the plants and animals of the Gulf of Mexico, childhood consolation for an unhappy move (Cohen 1991). Not only did McClintock's "feeling for the organism" provide her with unusual insight, it also provided sustenance during times without much friendship or professional support (Keller 1983).

Certainly my love of plants and natural beauty is a gift from my father, a lifelong gardener. Like him, I am more proficient at loving plants than children. Illinois' woods and fields salved my childhood loneliness. As I grew up, wild and beautiful places quite naturally came to represent not just sanctuary from painful events, but also the deepest mysteries of life and that which transcends our individual experiences.

Although we rarely acknowledge

the nature and depth of our biological and ecological loves, outsiders have a clear radar for them. Notice how quickly developers accuse us of caring more for spotted owls, snail darters, and wildflowers than for people. Our guilty backpedaling suggests we know they are right, at least about our love for the organisms and places in which we invest our life's work, if not about how people rank in our affections. Certainly the reporter who asked me about melaleuca knew enough scientists to anticipate an interesting answer if he asked how a plant ecologist felt about a tree.

The importance of our relationships to the natural world should surprise ecologists less than others. Ours is a science of relationships. Usually, though, we do not consider our personal attachments to the organisms and systems we study. Perhaps the ideal of the dispassionate observer stands in our way. Or perhaps women scientists notice these connections more readily. Maybe we needed more female peers before we could speak of these matters openly.

I no longer doubt the importance or nature of my attachment to dogwoods. Nor do I feel alone in my grief for their loss.

The grief of ecologists

In all strict logic, the loss of a species of bird on some small remote island matters little to the future of the world. Even the irreversible loss of soil and vegetation from some eroded African hillside is a small thing. Yet people grieve.... These feelings can not be embodied in the hard and brittle logic of science, but they may have truth of another kind, for all that.

—Martin Holdgate (1990, p. 706)

David Norton (1991) writes about the loss of an endemic New Zealand mistletoe, subtitled his article "An obituary for a species." Aldo Leopold (1949) entitles an essay about a favorite place, "Marshland elegy." I ask a US Forest Service pathologist about his reaction to dogwood anthracnose, and he speaks of his own depression. "It's sad," *The Seattle Times* quotes Jim Litchatowitch, a biologist, when officials declare the lower Columbia coho salmon extinct (Gwinn 1991).

Ecologists are both blessed and cursed with seeing natural systems clearly. Thus, we see what is there and also know what is gone. I know that dogwoods formerly bloomed along Skyline Drive in Virginia and, for me, the forest understory will never look the same. Similarly, the loss of a forest system, not that of a single species, haunts Bill MicKibben (1989):

The end of nature probably also makes us reluctant to attach ourselves to its remnants, for the same reason that we usually don't choose friends from among the terminally ill. I love the mountain outside my back door.... But I know that some part of me resists getting to know it better—for fear, weak-kneed as it sounds, of getting hurt. If I knew as well as a forester what sick trees looked like, I fear I would see them everywhere. I find now that I like the woods best in winter, when it is harder to tell what might be dying. The winter woods might be perfectly healthy come spring, just as the sick friend, when she's sleeping peacefully, might wake up without the wheeze in her lungs (p. 211).

Likewise, Michael Soulé's (1990) anguish regards broad ecological losses:

As the number of exotics in most regions produces a cosmopolitanization of remnant wildlands, there will be an agonizing period of transition, especially for ecologists.... There are moments when the destruction of a favorite place, of entire biotas and ecosystems, seems unbearable and the future looks bleak indeed (p. 234, 238).

Scientists and resource managers usually do not speak freely about this aspect of our feelings for the places and organisms that are part of our work any more than of our love for nature. "The sadness discernible in some marshes arises, perhaps, from their having once harbored cranes. Now they stand humbled, adrift in history" (Leopold 1949, p. 97).

I treasure the poetry of Leopold's expression. I suspect, though, that it is on our faces, not the marsh's, that the sadness is discernible. Perhaps it is our discomfort with that sadness that sees a marsh in tears. Any chaplain would say that we do better by crying our

own tears.

But mourning for ecological losses has no simple or predictable path. I suspect that ecologists, like other scientists, are prone to inhibiting the pain of grief. We are solidly attached to the life of the mind and, of the several steps experts consider essential to recovery, only the first is intellectual.

I speak from experience. I am tempted to dismiss my feelings for dogwoods as irrational, inappropriate, anthropomorphic. My arguments go like this: another tree will take the dogwoods' place; death is part of productivity, too; evolution removes as well as adds species. These arguments are all true. Timing is the key issue, though. Premature reassurance and pressure to accept a loss just short-circuit the grieving and recovery process.

Our external, as well as our internal worlds, may make environmental losses difficult to grieve. We have almost no social support for expressing this grief. When I sit beside a hospital bed as a chaplain, I expect people to cry about the unwelcome changes they are experiencing. I expect and accept patients' feelings that are dark and intense—rage at life's unfairness and guilt for doing too little, for example—and anticipate despairing questions about life's meaning. Their tears (and sometimes my own) are a sign of work well done. Honest conversations about grief that come quite naturally at a bedside are far more difficult at a lab bench or conference table. Thus, it is harder for me to speak freely about my grief for dogwoods with ecological colleagues than with fellow chaplains.

Also, ambiguity and ambivalence make for a particularly difficult period of mourning. This factor is one that makes a person's recovery from marital divorce so formidable. Environmental problems often involve high doses of ambiguity. Where did dogwood anthracnose originate? Is acid rain partly responsible for its spread? Are some trees resistant or not? Now, experts fear less for the total demise of the species but more for the loss of trees above, say, 3,000 feet in elevation. Charles Fenyesi (1991), for *The Washington Post*, calls out: "Hope for the dogwood" and others add new qualifiers (e.g., Kaufman 1989).

So do I grieve for my lovely dogwoods? Or not? Reducing uncertainty and disbelief is an important part of getting grief off to a good start. For that reason, many hospitals and religious groups stress seeing the body. In fact, this step is considered so important to coping with grief that it is built into certain hospitals' sudden-death protocols. But, with the dogwoods, it is unclear if I should look for bodies or cultivate hope. Even if I decided to grieve, how would I go about doing it?

The usefulness of ritual

People have always used rituals to help themselves mourn and recover from grief. For example, funerals usually reinforce the awareness of loss, sanction remembering, enable feelings to be expressed, provide support, guide the needed reorganization of life, and affirm its meaning (Irion 1990a). Funerals and memorial services serve as a rite of passage between initial shock and the longer, more private phases of grieving. Not all mourning customs are religious, though. We give gifts, eat together, show group solidarity, and protect mourners—all ways to help the grief-stricken (Irion 1990b).

The NAMES quilt—that collection of more than 14,000 fabric panels memorializing those dead of AIDS—is a particularly effective nonreligious ritual commemorating private and public loss. Constructing individual panels heals the makers; viewing the assemblage links those touched by tragedy. It has also become a powerful means to educate people and to call for political action (see NAMES Project 1988).

There are scientists among us who also think in terms of rituals, even funerals, for the species and places we are losing. The Wisconsin Society for Ornithology dedicated a monument to the passenger pigeon in a state park in 1947 (Leopold 1949). King and Dudley (1991, p. 249) note that ecologists will gather, on 12 October 1992, where Columbus may have landed in the Bahamas to "conduct a funeral ceremony for the natural environment of the Western hemisphere. They will mourn the demise of the New World's natural heritage and the eradication of entire groups of indigenous Caribbean people."

This is dramatic stuff, perhaps too outrageous for many ecologists' tastes. The importance of rituals in helping mourners cope is undisputed, however, and I see no reason why ecologists should not tap this resource in these difficult times. We could create a quilt of our own, with panels to celebrate the species we have loved and lost. We could hold a wake for a precious piece of land—gathering to tell stories of the field trips, research, and academic degrees that one particular place provided. We could create a family album, filled with the recollections of our professional grandparents, writing about the natural areas they have loved and lost in their lifetimes. We could create a special memorial fund to invest meaning in our losses. Our mourning rituals could celebrate, too, and affirm our faith in the processes of ecology and evolution. We could note the remaining beauty of the earth, the birth of new species or subspecies, and the grand rhythms of the biogeochemical cycles.

Most of our contemporary mourning customs are important in the first weeks and months of the grieving process (Irion 1990b). I suspect that ecologists are more likely to need support in a longer, continuing way. Environmental losses are intermittent, chronic, cumulative, and without obvious beginnings and endings. Thus, we may have to devise our own, unique customs. But they might be customs much needed by a society facing many kinds of transitions.

The benefits of grieving well

Experts urge us to grieve not only for its benefits but also because failure to grieve can have such far-reaching consequences. Generally, problems originate in two ways. Mourning can become excessive and prolonged, leading to chronic grief from which recovery never seems to come. Alternately, we can inhibit the process. Then it becomes distorted, and grief emerges in different forms (Parkes 1974). The results are not trivial. Unresolved grief is the underlying cause of problems for as many as 20% of the people treated at some substance abuse centers (Davidson 1984).

Grief is not pleasant, as anyone knows who has mourned a child, a parent, a close friend, or a spouse. At

the same time, it has its own bitter-sweet richness and intensity. Charles Darwin (1872) concluded that grieving serves us well in the long term. Colin Murray Parkes' 1974 landmark elaborates this idea:

Willingness to look at the problems of grief and grieving instead of turning away from them is the key to successful grief work in the sufferer, the helper, the planner, and the research worker.... We may choose to deal with our fear by turning away from its source.... But each time we do this we only add to the fear, perpetuate the problems, and miss an opportunity to prepare ourselves for the changes that are inevitable in a changing world (p. 195).

Times of transition are times of opportunity and any confrontation with an unfamiliar world is both an opportunity for autonomous mastery and a threat to one's established adjustment to life.... But there are some life changes which, because of their magnitude or because of a particular characteristic, carry a special risk of producing, not maturation, but dislocation (p. 194).

Perhaps the transition ahead for ecologists is just such a risky one. This makes it especially urgent that we do our grief work.

What might we get from tackling this seemingly unpleasant task? People emerge from grief with new insights about their relationship to the deceased and renewed energy for loving again. The benefits might extend far beyond our individual recovery. Aldo Leopold's work is a case study. Robert Finch (1987) describes Leopold's evolution, with the themes of environmental loss as a way station, as "a necessary, important sojourn in the wilderness of loss, ignorance, and self-education from which Leopold will finally wrest his holistic 'land ethic'" (p. xxvii).

As ethicists and others explore the underpinnings necessary for our care-filled treatment of the earth, they often return to this same idea: the importance of the nature and depth of our relationships to other organisms and to the earth. Kellert (1987) suggests that, for an environmental ethic to succeed, nature would need to be meaningful to us on a variety of levels,

including the emotional. Here again, it is ecologists' deep attachment to organisms and systems that is our strength—a potential model for others to emulate.

What might we need to model this process? "Fortitude," says Soulé (1990, p. 238), "when the temptation to turn and walk away is almost overpowering." Also, we shall need passion, commitment, creativity, energy, and concentration. We shall have none of these if we fail to grieve (alone and with each other) for the magnificent trees, the lovely animals, and the beautiful places that we are losing.

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