CHAPTER 5

Re-naturing the Psyche

Applying the Nature Principle to Our Mental Health

As director of the Golden Gate Raptor Observatory, Allen Fish teaches raptor migration study and wildlife monitoring. Ninety percent of his work is with adults, the hundreds of volunteers who count, band, and track hawks.

"Many of our volunteers hang on for five or more years. Their raptor work becomes deeply therapeutic in their urban lives," he says. "I have heard stories of self-healing here that would make a therapist tear up: of manic depression, of abuse, of chemical dependency. The strength that these people bring to their resolve to connect with nature is utterly stirring. And I have heard this line dozens of times: 'I thought I had to give up nature to become an adult.'"

Nothing could be further from the truth. To find hope, meaning, and relief from emotional pain, our species embraces meditation, medication, merlot, and more. These methods work for a time, some longer than others, some quite well, and some to our detriment. But the restorative power of nature is there, always. "We gain life by looking at life." Those are the words of Dr. Mardie Townsend, an associate professor in the School of Health and Social Development at Deakin University in Victoria, Australia. "If we see living things, we don't feel as if we're living in a vacuum."[1] Spending time in natural settings is

no panacea; it's not a total replacement for other forms of professional therapy or self-healing, but it can be a powerful tool in maintaining or improving mental health.

Nancy Herron, of Austin, Texas, has been married thirty-one years, and has two grown sons. She has worked as a volunteer director for a hospice and currently for Texas Parks and Wildlife. She describes herself as a type A overachiever. When her children were born, she took a break from full-time employment. When she returned to the workforce, she was eager to build her credibility and career. "But like any working mother, I still wanted to do the best for my children, my husband, my friends, family, and neighbors. I would work myself into a frenzy, not knowing how to stop. I lost sleep, worried way too much—we all know the drill."

That's when she started going camping again. As therapy, it worked. "You plan for just your most basic needs. You see wildlife taking care of its most basic needs. It reminded me that life asks very little of us. Eat, sleep, procreate—there really aren't too many actual demands on us. So what the heck was I doing? All those details that were worrying me, raising my blood pressure, choking the life out of me, had nothing to do with life, really. Being outside made it all crystal clear to me. Just live. When we're dead and gone, most of it really doesn't matter. We just made it up. Nature reminds me how simple and achievable life really is. When I start sweating the small stuff, I get back outdoors and remind myself about what really matters." And perfection, by the standard definition, does not matter.

As one father, who had been through a painful divorce, told me: "Sometimes I get out in nature to get a little exercise and loosen up the muscles, especially after having spent an inordinate amount of time in front of the computer or in meetings. But, more frequently, it is the need for psychological restoration that draws me to nature. It never fails, literally, to make me feel better—about myself, my life, my work, my family. It makes me a more creative and generous person."

The exercise itself helps ward off mental fatigue, of course. But he also recognizes that nature offers added value to his exercise. He turns to nature to heal the "emotional wounds that life can inflict." Shortly after moving to San Diego, he received a phone call from his first wife, "in which she told me she would probably not be following me back to California after all and, moreover, she wasn't really sure if she still loved me." Within minutes of hanging up the phone, he was in his car on the way to the nearest park, Torrey Pines State Park, which he had never visited. "After hiking through the coastal sage scrub in full spring bloom," he recalls, "I found myself at the edge of some impressive, storm-eroded cliffs overlooking the Pacific Ocean. I admit that at the moment I felt like hurtling myself off those cliffs, but the desire to keep returning to places like this was partly responsible for keeping my boots on terra firma." Nature always moves on, and life usually finds a way.

People who work in jobs associated with nature are, unsurprisingly, predisposed to appreciate nature's tonic, and also are more likely to make use of it, particularly during times of crisis. "Nature is the ultimate antidepressant," says Dianne Thomas, director of a county fitness program in North Carolina, who has seen the impact of nature on people in her outdoor programs. Some mental health organizations are beginning to agree—to a degree. Natural environments do seem to offer something extra for mental health, a tonic that goes beyond the benefits of physical exercise alone.

Nature's Tonic for Mental Health

As with general health issues, the application of nature to mental health takes three basic forms: self-applied or professionally prescribed therapy; the impact of environmental degradation on human psyche and spirit; and the restoration of nature where we live, work, and play.

"There is growing . . . empirical evidence to show that exposure to nature brings substantial mental health benefits," according to "Green Exercise and Green Care," a 2009 report by researchers at the Centre for Environment and Society at the University of Essex. "Our findings suggest that priority should be given to developing the use of green exercise as a therapeutic intervention (green care)."[2] In a study of more than 1,850 participants, these researchers reported three broad health outcomes from green exercise: improvement of psychological well-being (by enhancing mood and self-esteem, while reducing feelings of anger, confusion, depression, and tension); generation of physical health benefits (by reducing blood pressure and burning calories); and (as we'll discuss in later chapters) the building of social networks.

The researchers also examined people who took part in two walks, one in a country park around woodlands, grasslands, and lakes, and one in an indoor shopping center; both groups walked for the same amount of time. "Improvements in self-esteem and mood were significantly greater following the green outdoor walk in comparison to the equivalent indoor walk, especially for feelings of anger, depression and tension. After the green outdoor walk, 92 percent of participants felt less depressed; 86 percent less tense; 81 percent less angry; 80 percent less fatigued; 79 percent less confused and 56 percent more vigorous." Meanwhile, "depression increased for 22 percent of people and 33 percent expressed no change in their level of depression following the indoor shopping center walk."[3]

Similarly, researchers in Sweden have found that joggers who exercise in a natural green setting with trees, foliage, and landscape views, feel more restored and less anxious, angry, or depressed than people who burn the same amount of calories jogging in a built urban setting.[4] In other words, the benefits to mood can be attributed to exercise, which generally helps, but also to vitamin N. And the lack of it may well contribute to our susceptibility to depression.

How much nature is enough to make a difference in mental health? One study suggests that the benefits are felt almost immediately. Recent results published by Jules Pretty and Jo Barton of the University

of Essex in the journal *Environmental Science and Technology* suggest a proper minimum dosage of vitamin N. "For the first time in the scientific literature, we have been able to show dose-response relationships for the positive effects of nature on human mental health," Pretty wrote. Mood and self-esteem improved after a five-minute dose. Blue-green exercise is even better; the study found that a walk in a natural area adjacent to water offered people the most improvement. Which is not to say five minutes a day is all we need of nature. The analysis of 1,252 people of different ages, gender, and mental health status was drawn from ten existing studies in the UK, and it found that people of all ages and social background benefited, but the greatest health changes occurred in the young and the mentally ill. "Exposure to nature via green exercise can thus be conceived of as a readily available therapy with no obvious side effects," according to the report.[5]

Even exposure to dirt may boost mood, along with the immune system. The research noting the positive effect of *Mycobacterium vaccae* on the ability of mice to run a maze also noted a reduction in anxiety. A separate study, conducted at Bristol University and reported in the journal *Neuroscience*, found that mice exposed to *M. vaccae*, the "friendly" bacteria normally found in soil, produced more serotonin.[6] A lack of serotonin is linked to depression in people, and common antidepressants work by increasing the production of this brain chemical. While the influence of serotonin has been questioned by some scientists, studies on the impact of *M. vaccae* "help us understand how the body communicates with the brain and why a healthy immune system is important for maintaining mental health," according to lead researcher Chris Lowry. "They also leave us wondering if we shouldn't all spend more time playing in the dirt."[7]

Our fellow animals can help, too. The majority of research about the impact of animals on human mental health has been conducted on domestic pets. The results are positive. Scientists have found, for example, that levels of neurochemicals and hormones associated with

social bonding are elevated during animal-human interactions. A study of institutionalized middle-aged schizophrenia patients found that the presence of animals helped during therapeutic sessions and everyday life. And a Purdue University School of Nursing study found that people with Alzheimer's disease who were exposed to brightly colored fish in aquariums had improved behavior and eating habits. This knowledge has been put to good use.[8] Therapists have long used animal visits as therapy for loneliness among the elderly, and, more recently, to reduce anxiety in psychiatric patients. The formal use of animals for mental health treatment even has its own acronym: animal assisted therapy (AAT).

In 2008, results were announced from the first randomized controlled study of the therapeutic benefits of farm animals. The study, by researchers at the University of Oslo, in Norway, found that farm animals may be able to assist with therapy for such mental disorders as schizophrenia, affective disorders, anxiety, and personality disorders.[9] But what about wild animals? A 2005 study suggests that direct interaction with at least one wild species—dolphins—can reduce symptoms of mild to moderate depression.[10] As reported in the *British Medical Journal*, swimming with dolphins "was effective in alleviating symptoms of depression after two weeks of treatment." The researchers suggested that patients with mild or moderate depression might be able to reduce their use of antidepressants or conventional psychotherapy. Dolphin-assisted therapy has its critics—including those who question some of the research and those who object to what they consider the exploitation of dolphins. But the research, if it holds up over time, does link our mental health to our relationship with members of other species.[11]

So, while much of the existing research is specific to exercise in nature, accumulating evidence indicates how simply living and working in a natural or re-natured environment—whether our houses, hospitals, neighborhoods, or cities—can have a profound impact on our

mental health. I'll return to this theme in later chapters, and the news here is hopeful. However, we need to address another link to mental health: the negative, sometimes devastating impact that comes from how humans damage or deny the natural world.

The Ecological Unconscious

The idea of an "ecological unconscious" now hovers above the crossroads of science, philosophy, and theology—the notion that all of nature is connected in ways that we do not fully understand. In his 1841 essay "The Over-Soul," Ralph Waldo Emerson wrote of "that great nature in which we rest, as the earth lies in the soft arms of the atmosphere; that Unity, that Over-soul, within which every man's particular being is contained and made one with all other; that common heart." The theory of an ecological unconsciousness, with antecedents in Transcendentalism, Buddhism, and Romanticism, is a stretch for science and even offensive to some religious folks. However, most people sense a rupture, as indicated by the many thousands of us still feeling a profound sense of loss because of environmental damage from the BP oil spill along the Gulf Coast of the United States, a disaster that reached across state lines and across species boundaries.

The American Psychiatric Association lists more than three hundred mental diseases in its *Diagnostic and Statistical Manual.* "Psychotherapists have exhaustively analyzed every form of dysfunctional family and social relations, but 'dysfunctional environmental relations' does not exist even as a concept," says social critic and author Theodore Roszak. As he notes, the *Diagnostic and Statistical Manual* "defines 'separation anxiety disorder' as 'excessive anxiety concerning separation from home and from those to whom the individual is attached.' But no separation is more pervasive in this Age of Anxiety than our disconnection from the natural world." It's time, he says, "for an environmentally based definition of mental health."

In *Last Child in the Woods,* I offered the hypothesis of nature-deficit

disorder, which describes the human costs of alienation from nature. Other observers have put forward other names. Australian professor Glenn Albrecht, director of the Institute of Sustainability and Technology Policy at Murdoch University in Perth, Australia, has coined a term specific to mental health: solastalgia.[12] He combined the Latin word *solacium* (comfort, as in solace) and the Greek root *algia* (pain) to form solastalgia, which he defines as "the pain experienced when there is recognition that the place where one resides and that one loves is under immediate assault." Albrecht formed his theory and invented his neologism as he worked with communities disrupted by strip mining in New South Wales's Upper Hunter Region and with farmers in eastern Australia suffering from a devastating six-year-long drought. During a visit to western Australia, I met Albrecht, a tall, kind, shambling man, who later sent me the words of Wendy Bowman, ninety-three, who resisted the stripping of her land, and who felt anguish, solastalgia, as the destruction moved closer. He described her clenching her fist and saying, "I lost a lot of weight. I'd wake up in the middle of the night with my stomach like that."

In one instance, man caused the environmental destruction. In the other, the long drought was a natural event—unless global warming is to blame. That possibility is very much on the minds of Australians now. Albrecht asks: Could people's mental health be harmed by an array of shifts, including subtle changes of climate?

By any name, we endure this loss at a primal level. Humans living in landscapes that lack trees or other natural features undergo patterns of social, psychological, and physical breakdown that are strikingly similar to those observed in animals that have been deprived of their natural habitat. "In animals, what you see is increased aggression, disrupted parenting patterns, and disrupted social hierarchies," says Frances Kuo, a professor at the University of Illinois, who, with her colleagues, has studied the negative impact of de-natured life on human health and well-being. Among them, they have noted decreased

civility, more aggression, more property crime, more loitering, more graffiti, and more litter, as well as less supervision of children outdoors. "We might call some of that 'soiling the nest,' which is not healthy," she says. "No organisms do that when they're in good shape. . . . In our studies, people with less access to nature show relatively poor attention or cognitive function, poor management of major life issues, poor impulse control."[13]

If Albrecht is right, and if climate change occurs at the rate that some scientists believe it will, and if human beings continue to crowd into de-natured cities, then solastalgia will contribute to a quickening spiral of mental illness.

As with nature-deficit disorder, solastalgia remains a hypothesis, theoretical, not an official diagnosis. But anecdotally, these and other hypotheses offer a way to identify the dissonance, this psychological and even physical pain that so many of us feel as we see the natural landscapes that we love replaced by strip mines and strip malls. The heartsickness is real. That reality does not mean that urban life is, by itself, intrinsically bad for human health. But the *kind* of life many of us are living, even in rural areas, is not supportive of optimal health and well-being.

"Therapy as If Nature Mattered"

In Santa Barbara, California, psychotherapist Linda Buzzell-Saltzman asks her adult patients to keep a daily journal. She reports that some of her clients realize that, other than walking to and from their cars, they spend less than fifteen to thirty minutes a day outside, in any setting, natural or not. She tells them they need to get out more, and in her care, they do. But first they have to recognize that spending time outdoors, while fun, is serious business. Buzzell-Saltzman, founder of the International Association for Ecotherapy, offers perhaps the most succinct current description of nature-based therapy. She describes ecotherapy as "the reinvention of psychotherapy as if nature mattered."[14] By whatever name, nature-guided therapy is entering mainstream psychology as the combination of urban pressures and loss of natural habitat create psychological problems that other forms of treatment seem inadequate to fully address.

As with nature therapy for physical illness, the therapeutic use of the natural world for mental health began centuries ago. The American mental health pioneer Dr. Benjamin Rush, whose signature appears on the Declaration of Independence, believed that "digging in the soil has a curative effect on the mentally ill." Beginning in the 1870s, the Quakers' Friends Hospital in Pennsylvania treated mental illness, in part, by providing patients with a greenhouse and acres of natural landscape. During World War II, psychiatry pioneer Karl Menninger launched a horticulture therapy movement in the Veterans Administration Hospital System.[15]

Today, Mind, the leading mental health charity for England and Wales, describes ecotherapy "as an important part of the future for mental health," according to Paul Farmer, Mind's chief executive. "It's a credible, clinically valid treatment option and needs to be prescribed by GPs, especially when for many people access to treatments other than antidepressants is extremely limited." Mind is not claiming that ecotherapy can replace drugs, but does suggest that the range of treatment approaches must be broadened. If ecotherapy were part of mainstream practice, "it could potentially help the millions of people across the country who are affected by mental distress," he added.[16] In a major report, Mind recommended what it called a new agenda for mental health services: "With a mass of new and growing evidence, Mind calls for ecotherapy to be recognized as a clinically valid frontline treatment for mental health problems."

The approach is not universally endorsed. Alan Kazdin, a former president of the American Psychological Association and a Yale

professor of psychology and child psychiatry, has said, "Modern psychology is about what can be studied scientifically and verified. . . . There's a real spiritual looseness to what I'm seeing here."[17]

Nonetheless, professionals who use nature therapy in their practices generally report good results.

Marnie Burkman, MD, board-certified in both psychiatry and holistic medicine, who works as an outpatient adult psychiatrist for the Department of Veterans Affairs in Colorado, treats veterans of all ages. She says she is "awed at the powerful effect that nature has to promote healing." She tells the story of one patient, Al (name changed), a Vietnam vet, and a very angry man—angry at the government, angry at life, angry with himself. Al struggles with how to cope on a daily basis. Burkman describes one session when Al was ranting and venting his anger at everything, sitting forward with clenched fists, practically yelling. "To redirect him, I asked him, 'How do you cope? What helps you relax?' He paused, then started sharing about how he loves to ride his motorcycle alone into the mountains, and go camping." Al told Burkman about sitting under the stars, no one around, outside a mountain cabin, and how he would love to spend the rest of his days in such a setting. "What was striking to me as I watched him, is that within *seconds* of starting to share about riding into the mountains to be in nature, a total bodily transformation occurred in front of my eyes, unconscious to him," says Burkman. "A posture of clenched fists and sitting angrily forward, waving his arms as he talked at loud volume, transformed to him leaning back in his seat, stretching his legs out, arms clasped behind his head, smiling face—a posture of ease and relaxation. I have not seen any antianxiety medication work this quickly! Within seconds, from simply *imagining* nature, this profound change was catalyzed in his nervous system."

Burkman has seen this effect in other patients as well, particularly in those who had established a tender relationship with nature earlier in life. And she has noticed a stark contrast with those who have not

had a relationship with nature, usually her younger patients: "When I have asked young veterans [often vets of the Iraq and Afghanistan conflicts] how they cope, many say, 'I don't know.' Or, they cope through alcohol, or television, or sometimes by exercising at the gym. However, even in people who cope through exercise at a gym, when they share of these modalities, I have never witnessed the distinct healing bodily change that is obvious in people who share their deep connection with nature."

Yusuf Burgess (he prefers "Brother Yusuf," after his conversion to Islam) saw his first combat at age seventeen. Twenty years went by before he was diagnosed with posttraumatic stress disorder. "Two decades of isolation, separation, substance abuse, incarceration, and almost a mastery of avoidance techniques that left me very lonely and alienated even in a crowd and especially within a family," he says. "It was the combination of a 12-step program and being prescribed kayaking by a clinical psychologist that put me back on the road to recovery and back into the mainstream of life." Today, Brother Yusuf is known throughout the United States for his pioneering work taking young inner-city men into the Adirondacks for their own reformation. In that occupation, he finds restoration, and peace. Several initiatives, including the Sierra Club's Military Family Outdoor Initiative, provide returning veterans and their families with healing outdoor experiences.

Peter H. Khan Jr., associate professor of psychology at the University of Washington and a leading researcher on ecopsychology, and Patricia Hansen Hasbach, a psychologist in private practice who teaches ecotherapy at Lewis and Clark College, in Portland, Oregon, are currently working together to better define the connection between mental health and the natural world. Khan is focusing his work on the human relationship with the "greater than human world"; Hasbach is exploring nature as metaphor, what she calls "mapping the internal landscape." She views the emergence of ecotherapy as part of a natural progression of mental health care: psychological therapy began

with the intrapsychic work of Sigmund Freud—the emphasis was on the individual's early experience—then broadened to the interpersonal, and then to the whole family. "In the 1970s, we took a huge leap into family systems and then in the late '80s, early '90s, we moved into social systems," Hasbach told me over coffee in a little café in Chautauqua, New York, where I had also met the sculptor David Eisenhour. "Ecopsychology or ecotherapy is taking us to the next round: the context in which we live our lives, the natural world," she added.

She explained how she uses nature as metaphor, to open patients up, and also as direct treatment. During the intake phase, she asks her patients questions about family, work, and other parts of their lives. She also asks them about their relationship to nature and how much time they spend outside. "Some will tell me, 'I haven't done it in years.'" She asks them if they had a special place as a child in nature. "And that is an icebreaker. It often gives me more information than when they tell me about their families." She also takes her patients outside.

"I was sitting in the park with a patient, when somebody went by on a bicycle. There was a cockatiel perched on the handlebars, and we both noticed it. Its wings were outspread, and it was clear that the bird's wings had been clipped, which is why it wasn't flying, and it was very moving to the woman. She broke into tears and talked about how she lived her life, with clipped wings." In another case, a woman was able to talk about the twists and turns of her life, "by observing the river from where we sat."

And Hasbach told the story of a seventeen-year-old patient. "This boy was doing serious self-damaging things. The parents were in the midst of a divorce and weren't really addressing him directly. He had been to two other therapists. Went once, didn't go back. But he and I made a connection when he started telling me about fishing. I said, 'I'm going to give you homework. I want you to go fishing three times this week.' He came back the next week and said 'sometimes I just go to the ponds and I just sit there.' He began telling me about the turtles—and

how they draw into their shell. In our third session, he trusted me enough to say 'I thought of killing myself.'" Hasbach prescribed short-term medication, and more time outdoors. "I brought in his dad, with whom he was living, to reconnect that bond. This week they are in Alaska fishing together."

Later, as Hasbach and I walked outside, rain began to fall on Chautauqua's town square and the Victorian homes that surrounded it. The conversation paused.

I told her how I had seen my father disengage from nature, which had been an early source of his joy, as well as of the bonding that had occurred among my parents, my brother, and myself. This was long before the psychiatrists or the mental hospitals he frequented saw such illness as part of a whole family system. So his condition, probably bipolar disorder combined with the effects of alcoholism, was treated in isolation from his family, the society beyond, and the natural world.

I wondered if nature therapy could have helped my father. Surely, it would have helped our family.

Hasbach agreed. "So often when we have this kind of severe challenge, frightened family members lose hope," she said. "Through glimpses of a happier time, familiarity of place, a hope for the possibility of wholeness in a familiar shared activity, your father may have been able to connect with a deeper place of knowing and healing, one that is rooted in our biophilic connection to nature. The interior-mapping that we talked about might have been useful in touching that depth of experience," she said. "Nature therapy for your father might not have helped him turn the corner, but it might well have helped ease his pain, and given your family solace, and more good memories of him, and maybe it would have kept him with you a little longer."