



Soundscapes Writings

Listen Up: Opening Our Ears to Acoustic Ecology

by Jim Cummings, Acoustic Ecology Institute founder

Published in Zoogoer (magazine of the US National Zoo), July/August 2001

As technological civilization diminishes the biotic diversity of the earth, language itself is diminished. . . For when we no longer hear the voices of warbler and wren, our own speaking can no longer be nourished by their cadences. As the splashing speech of the rivers is silenced by more and more dams, as we drive more and more of the land's wild voices into the oblivion of extinction, our own languages become increasingly impoverished and weightless, progressively emptied of their earthly resonance.

David Abram, The Spell of the Sensuous

WRITINGS LINKS

- » [Poetry](#)
- » [Interviews](#)
- » [Essays](#)
- » [Articles](#)
- » [Short Quotes](#)

In the forest or on a city street, sounds bring the world alive. Whatever beauty or complexity, pattern or structure we might see around us, the world would be stark beyond recognition if we could not hear all that lies beyond our sight, hidden around corners or behind the screens of people or trees. The subtle voices of birds quietly chirping their territorial presence can fill a hillside, with an occasional outbursts from the middle distance letting us know that crow, or chipmunk, is also nearby. These sounds can call us out of ourselves, so our awareness expands to know the valley a little more fully, more intimately. As our world becomes ever more dominated by the sounds of humans and our machines, the subtle beauty of nature's voices becomes ever more precious. A fascination with the voices of nature, as well as the soundings of humanity, fuels the emerging field of "acoustic ecology." This umbrella term encompasses work being done by academics, city planners, sociologists, activists, and sound artists, each in their own way encouraging a deeper appreciation for sound and its role in our lives.

Acoustic ecology looks at the relationships that creatures develop through sound, and at the ways that humans and other animals are affected by their sonic environments. Some of this work is research-oriented, such as that pursued in the field of bioacoustics. Others turn to more subjective pursuits, such as teaching "deep listening" or forging new kinds of compositions created from field recordings. And some have taken up the cause of sound, championing the acoustic right of nature to be free of human noise. A small item appeared on the wire services last year. According to the Royal Society for the Protection of Birds, the population of finches, warblers, and orioles in London is in rapid decline. City noise seems to be interfering with learning their mating calls; rather than a melodious song, some youngsters can only manage a generic sort of chirp. Is this a sign of things to come?

Opening our ears: learning to listen

Pause for a moment, and listen. What is the dominant sound? Explore the components of the background ambience you are immersed in. Listen a bit longer—let a minute or two pass. Has there been a change? Did any fleeting soundmakers come by?

You are hearing the voice of the planet, as it is manifest in your immediate surroundings. In this hour, as Earth spins in the sun, each place is contributing its share of this great sounding whole. A twilight chorus of peepers and poor-wills; mid-morning breezes in forests of fir; seals under arctic ice calling out like otherworldly sirens; the whine of a semi cresting a mountain pass; a desert marketplace alive with the calls of children, donkeys, and music; a waterfall roaring in the forest, witnessed by no human ear; and the voice you hear now—all live together in the eternal, ever-changing moment of a sounding planet.

It can sometimes seem that the urban cacophony, combined with the near omnipresence of radio and TV chatter, has led us to "close down" our ears, or to selectively filter what we allow into our awareness. If so, when we turn our ears once again outward to the world, we may be starting with diminished sensitivity, and have difficulty at first "tuning in" to the sounds and patterns of the natural world's voice. Certainly our auditory acuity and conceptual subtlety lags

far behind that of most primal cultures. In books and audio CDs, NYU anthropologist Steven Feld has explored the rich variety of ways in which the Bosavi people of Papua New Guinea experience the sounds of the rainforest that is their home. "It's an interlocking soundscape," says Feld. "Sounds tell the time of day, season of the year, conditions of the trails. Songs reflects all these interlocking sound clocks; they are maps of the forest." In hunting, music, ceremony, and language, nature's voice makes its mark on human culture. Perhaps the most ineffable sonic lesson learned from primal cultures, one that has seemingly been discarded by industrial society, is that human language, music, and communal soundmaking are but one part of a larger, ongoing "song" of our home places. Listened to with this awareness, it is remarkable to hear the "natural" quality of the individual and social human voice in such a context.

Answering the need for some re-tuning of our ears, several programs have emerged in recent years to encourage closer attention to listening. At the Olympic Institute in Washington State, Gordon Hempton runs annual workshops that aim to make the act of listening come alive in wild landscapes. As Hempton says, "listening is a creative act with an audience of one." He encourages active exploration of the soundscape, urging participants move about in a given place, exploring different "mixes" of sound, seeking spots that come alive, where the balance of sounds is especially vivid, or where a sound is obscured and so transformed in interesting ways. Leaves, trees, or our own hands and bodies can all become elements used to affect the soundscape we experience. Hempton is fascinated by ways that sound is changed in nature, such as when a resonance added to the sound of surf when heard from within huge driftwood logs on a beach. To those who find joy in listening, nature offers a ceaseless symphony of sound, with infinite possibilities for engagement and exploration.

This active, engaged approach to listening is echoed by the practice of "soundwalking." In workshops and classroom settings, soundwalks offer a first reminder of listening. At its simplest, a soundwalk is just what its name implies: a walk during which you simply pay attention to each sound you encounter. More complex variations can include seeking out the most distant sound audible, or the faintest. Soundwalks are just as interesting in cities as in nature, and indeed, urban acoustic ecology offers many points for reflection and even aesthetic appreciation. "During a soundwalk," says Andra McCartney, professor at Concordia University in Montréal, "I pay attention to the sounds in my environment with the same focus and awareness that I use to listen to music, or to the sound of my lover's voice. Like many simple experiences, soundwalking is often profound as well. The act of focusing on that moment, that place and time, leads me to hear that place differently, to understand it in new ways."

A soundwalk can take place through time, as well. Last year, radio producer Darren Copeland solicited recordings, testimony, and archival research in order to create the Toronto Sound Mosaic. This twenty minute sound collage paints a sonic portrait of the city from its early history through today; the mix of recollections and recordings tells a story that is likely similar to that of most European and North American cities.

Acoustic Activism

Acoustic Ecology emerged as a defined field during the 1970's, at Simon Fraser University in British Columbia. There, a cross-disciplinary mix of philosophy, sociology, and art gave rise to the World Soundscape Project. Led by writer and composer R. Murray Schafer, WSP participants collected recordings of urban "soundmarks" such as noon whistles, harbor horns, and train station ambiances, documented natural soundscapes and tribal history, and conducted interviews to discover how people react to various sorts of sounds encountered in their daily lives. Perhaps the most influential (and controversial) idea to come out of this early work in acoustic ecology was the idea that natural soundscapes can be characterized as "hi-fi" acoustic environments, while most human sounds, by contrast, are "lo-fi." The analogy to audiophile terms is quite direct: lo-fi soundscapes are characterized by distortion, broad-band noise, and discomfort, while hi-fi natural soundscapes tend to sound balanced, aesthetically rich, and pleasing to the ear.

As ideas such as these spread, one of the first places they had concrete impact was in city planning. While to a large degree, city sound ordinances were developed to limit dangerously loud sounds and block housing areas from highway noise, the value of open space and parks as sonic refuges has become part of the urban planning mainstream.

In wildland areas, acoustic activism has increased as the ability to retreat from human sounds has diminished. Gordon Hempton is one of many natural sound recordists who have experienced a dramatic decrease in the amount of time he can record without having a human noise (most commonly an engine) intrude. Between 1984 and 1989, the number of locations in Washington State where he could record for fifteen daytime minutes without interruptions by human noise intrusions dropped from twenty-one to just three. Walking with Hempton in his beloved Olympic National Park, a companion might be startled by a sudden grimace: his sensitive ears have picked up a distant airplane, breaking the spell of the wild and initiating a gentle torrent of policy prescriptions from this devotee of listening. "Earth is a musical planet, spinning in silent space," he says. "However, the acoustic environment has not received adequate protection. The music of nature and the quiet opportunity to enjoy it are threatened by the noise of man."

There is beginning to be more acknowledgement of the importance of the "sound resource" among park administrators. "Natural sounds are part of the special places we preserve. Rustling winds in the canyons and the rush of waters in the rivers are heartbeat and breath of some of our most valuable resources," says National Park Service Director Robert Stanton.

Airplane overflights of national parks is the most established issue being championed by environmental advocates of natural quiet. In Grand Canyon National Park and Rocky Mountain National Park, sound studies have contributed to the establishment of new, more limited flight patterns for tourist aircraft.

Biscayne National Park in Florida is the first park to take Hempton's call for system-wide acoustic inventories to heart. In 1999, they began working toward a comprehensive Soundscape Management Plan. Public comments were gathered, and the final plan is expected later this year. The purpose behind the plan is stated clearly by a park newsletter on the issue:

Preservation and restoration of diminishing natural sound environments or soundscapes has become a foremost challenge in the protection of park resources. Biscayne National Park offers some of the best places to hear the calls of wildlife and the melodies of wind and water. Today, these natural ambient sounds are threatened as the noises of civilization and technological conveniences increasingly intrude into even the most remote corners of the park.

A major source of human noise on public lands is personal recreational vehicles. "As snowmobiles, all-terrain vehicles, and jet skis expand into new areas and seasons of the year because of greater speeds and capabilities, they create new conflicts. They have more impacts on the natural world and the human enjoyment of it," says John Gatchell of the Montana Wilderness Association. Over the past two years, the National Park Service has introduced new regulations limiting, and in some cases, banning the use of such vehicles.

Personal watercraft have been the most severely regulated, with a full ban on jet skis taking effect last summer in most national parks (including Biscayne). In addition to nineteen National Parks, Seashores, and Scenic Rivers where personal watercraft are now banned, twenty-one National Recreation Areas, National Seashores, and similar sites managed by the Park Service are under a two-year grace period. After this, personal watercraft will be banned unless authorized by special regulations that include a full environmental impact and public comment process.

Meanwhile, snowmobile use is also facing increased regulation. During the past decade, a new generation of more powerful snowmobiles has been developed. These new machines can handle more rugged backcountry terrain than snowmobiles of old, leading to a marked increase in snowmobile noise in remote areas of national forests and parks. At Yellowstone, it is not uncommon for a thousand snowmobiles to be buzzing through the landscape; though they are confined to roads and trails, their sound is heard for miles. Last winter, Yellowstone and Grand Teton National Parks announced that snowmobiles would likely be totally banned by the winter of 2002-3. Though this plan is facing tough opposition from local businessmen and governments, the park service rejected an earlier plan of phasing in quieter, cleaner machines over ten years, saying that it did not meet the park's legal obligation to protect the environment. Similarly, Rocky Mountain National Park announced in December that its preferred management alternative is a total ban of snowmobiles; public comments are being accepted through March and a final rule is expected to be announced by early 2002.

A similar, though more modest, shift is taking place in the regulation of all terrain vehicles (ATVs). Here, the emphasis has been less on National Parks and more on BLM and state lands, many of which have become weekend hotspots of motorized recreation. The trend is toward corralling ATV use into prescribed, but still wide-ranging areas, leaving more land available for quiet forms of recreation.

It's not only off-road and motor-sports vehicles that are being banned from parks: Utah's Zion National Park is the first to completely ban private autos from most of its roadways. Other parks (including Acadia, Grand Canyon, and Yosemite) have instituted optional shuttles, but in Zion all visitors must park and ride. Responses from visitors has been overwhelmingly positive, with most citing the joys of experiencing the otherworldly beauty of Zion's cliffs without the all-too-familiar drone of engines. As one visitor enthused, "It's absolutely fantastic to be up in Zion Canyon again—you can actually hear the birds singing."

You may have noticed that most of the activity taking place in national parks and other public lands is inspired largely by the desire of other humans to enjoy the natural soundscape, rather than out of concern for the effects of human noises on wildlife. In the most recently emerging area of acoustic activism, the priorities are reversed: for activists focusing on sounds in the seas, the emphasis is squarely on the acoustic rights and needs of sea creatures.

By far the most dramatic issue being addressed in the oceans is the development of a new generation of underwater surveillance technology. The U.S. Navy, in collaboration with allies, is in the testing phase of the Low Frequency Active Sonar (LFAS) system. Using powerful sound waves, LFAS is designed to monitor undersea activity by enemy submarines. With sound as loud as 240 decibels, these systems are planned to permeate 80 percent of the world's oceans. At peak output, the sound would still be at 120 dB as far as 250 miles away from the source;

many fish and whales start avoiding sound when they reach 120 dB. During tests over the past several years (using source output levels much lower than those planned when the system is implemented), the Navy and its contractors have been looking at the effects of the tests on local marine life, most notably cetaceans. In the view of LFAS supporters, the results show minimal behavioral disturbance, but acoustic activists following the issue disagree strongly.

In Hawaii during studies in 1998 and 1999, independent monitors reported that migration patterns of grey whales shifted away from testing areas, while vocalizations of several whale species diminished significantly. More alarming, in the spring of 1998, observers with the Ocean Mammal Institute discovered two abandoned whale calves and a baby dolphin in the testing area. "We have never heard of anyone observing an abandoned cetacean calf in nine years of research," states a report by the OMI's Marsha Green.

In March of 2000, a dramatic beaching incident in the Bahamas provided further fuel for LFAS opponents. While testing of a lower power mid-frequency active sonar system was going on nearby, seven whales beached and died. Autopsies reported by the National Oceanic and Atmospheric Administration revealed that six of the dead whales had experienced "injuries consistent with an intense acoustic or pressure event," including hemorrhages in or around the ears.

In the wake of these and other questions, including objections from two federal agencies, tests scheduled for May 2000 in the waters off New Jersey were cancelled, pending further study, while the Canadian Navy committed to conduct tests only when there were no cetaceans in the testing area.

At the end of this article you will find contact information for several organizations that can help you stay up to date with these and other acoustic activism issues.

Soundscape Art

In the 1970's, environmental sound recordings first made a splash in popular culture, spearheaded by Irv Teibel's *Environments* series. These LPs featured rich, un-narrated ambiances of specific habitats, recorded and reproduced with state-of-the-art stereo technology, creating a compelling listening experience. When *Songs of the Humpback Whale* became a best-seller, the doors were opened for a wave of natural sound releases, most of which were close variations on the *Environments* formula.

During the 1990's, a new generation of soundscape producers emerged which is stretching the bounds of the genre in exciting new ways. Some have built on the foundations of traditional nature sounds pioneers, presenting portraits of specific habitats, while developing highly individual approaches. For example, Lang Elliott is known for stunning close-up recordings of birds, as well as his series of habitat titles that feature similarly amazing close-up recordings of rich sound communities; Jonathon Storm, by contrast, specializes in the subtle variations in water's voices and the soft natural quiet of forest landscapes.

Meanwhile, other producers have emerged from acoustic ecology circles. Their CDs are more apt to include sonic essays that explicitly raise questions about humanity's relationship to natural and urban landscapes. Hildegard Westerkamp is perhaps the best-known of these producers, creating works for radio, public performance, and CD that range from sparsely narrated "soundwalks" to multi-layered productions composed purely of field recordings that pull the listener deeper into the world of sound.

And, several producers, such as Germany's Michael Rösenberg and America's Douglas Quin, have built on John Cage's notion that all sounds can be considered elements for composition. Not surprisingly, the works emerging from this diverse community vary widely, from portraits of specific cities (Lisbon, Rome, Vancouver) to finely-honed compositions that utilize nature's voices as a central element (such as Quin's CD-length work *Forests: A Book of Hours*).

The individual voices of today's soundscape artists reflects the genre's emergence as a full-fledged creative medium, much as photography blossomed in the early 1900's. In both fields, a documentary medium was enlivened by artists who explored new perspectives, subject matter, social content, and innovative studio techniques. As with photography's birth as a creative art, which began in Europe's avant garde communities, soundscape art has been a growing presence in experimental gallery circles since the 1960's, and today stands poised for widespread attention and appreciation. A new record label-cum-catalog company, EarthEar, has begun championing the full range of creative soundscape styles. Based in Santa Fe, EarthEar is a collaborative project involving many of the world's leading soundscape producers.

The Voice of the Planet

Underlying the work of all the people mentioned here is a passion for listening deeply to the voice of the planet. Our awareness of—and engagement with—this sounding whole is yet another of the nurturing connections that we've gradually forsaken over the past decades and centuries. As with all the others (our place in a natural community, winter story-telling from the elders, time to work outdoors or simply soak in the beauty), it slipped only slowly away, so slowly that we've hardly noticed its passing. As we've forgotten our place as one voice in a

community of sound, we've also borne witness to the eclipsing of nature's communal voice by the increasingly dense web of human machine-made noise.

As acoustic activists raise a voice for the sanctity of natural quiet, and sound artists act as sonic shamens, re-tuning our collective ears to listen more consciously to the world around, we are offered opportunities to re-connect with the ceaseless symphony that awaits just outside our doors.

Of course, in the real world, it's not all that dramatic. . . it's simply about letting sound expand our awareness, both in the practical sense of revealing actions and beings that are not visible from where we are, and in the more ineffable way that attention to sound can seem to make us more present in a place. Let me share a bit of what I mean.

I live in a small canyon. In the span of about five miles, it connects a mixed conifer forest in the lower reaches of the Rocky Mountains with the high desert of the Galisteo Basin. This afternoon, I strolled up a side drainage behind our house. We're in the last vestiges of winter, the night-time frosts getting less frequent and harsh. Soon the nights will blossom with sound.

But today, the sounds of the meadow and its surrounding hills are subtle. The voice of the planet, as expressed in this here and now, includes a handful of birds scattered around the periphery, the occasional close encounter with a fly, an airplane several miles off, and some neighborhood dogs carousing down the canyon. Meanwhile, the clouds roll silently into sight above a ridge to the west. Ah, but not so silent, as nearby eddies of earth's breath sing gently in the piñons that grace the slopes embracing this meadow. Now the trees of the eastern ridge come alive, roaring in the leading edge of a strong gust of wind. For thirty seconds, I follow the sound up the ridge, as it surges and wanes, adding layer upon layer of subtly varying tones while the trees roll and shimmer, until at last the gramma grass around my silent feet bursts into dance and I, too, am immersed in the rush of air passing by.

The longer I stay, the more my ears and eyes open, the more the place draws me out of myself. Swirling clouds of grass and weed seed, mixed with a few small insects, are swept along in the waves of wind. The grasses whisper, occasionally eclipsed by the roaring of a breeze caught swirling in my ears. Peripheral sounds shift subtly, yet dramatically, as wind, birds, and a train come and go. Kids play a hundred yards away. And still the clouds soar past, distant contacts with the great currents of the sky, whose edges whisper through my hair.

These moments of sonic, visual, and tactile presence inspire me with a more expansive sense of self, one that encompasses the valley as a whole. Relationships of interaction, exchange, and co-evolution become palpable, and I feel my place in this greater context. It is from this ground that I occasionally catch a glimpse an ancient and ever-new story, told in the original language.
...

Contacts

World Forum for Acoustic Ecology. Extensive collection of writings and links to organizations around the world. Publishes a quarterly journal and hosts email listserv. [\[WEBPAGE\]](#)

EarthEar. Catalog, available online or in printed form, features titles from over 50 producers, while new releases on the EarthEar label introduce a wide array of styles. [\[WEBSITE\]](#)

Noise Pollution Clearinghouse. A national organization that works to reduce urban noise pollution and to protect natural quiet. Maintains extensive online resources on health and policy issue. [\[WEBSITE\]](#) or call 888-200-8332.

Jim Cummings is a father, writer, and founder of EarthEar. He lives in the upper Rio Grande watershed among the foothills of the southern Rockies.