

wonder that the domestic market for phytoremediation is expected to grow from well under \$100 million in 2000 to between \$235 million and \$400 million by 2005.

The downside to phytoremediation is that it takes time for the plants to do their work. Such

techniques, says Kirkwood, “will make sense only if there are appropriate growing conditions, contaminant densities, and aeration of the soil.” But phytoremediation can also allow contaminated sites to be partially inhabited even while the cleanup is going on.

The Daughterless Gene

“The Plot to Kill the Carp” by Todd Woody, in *Wired* (Oct. 2002), 520 Third St., 3rd Fl., San Francisco, Calif. 94107-1815.

Eight years ago, Australian wildlife officials were alarmed to discover environmentally destructive European carp—which are already dominant in mainland Australia’s waterways—swimming among the rare native fish in Tasmania’s Lake Crescent. Carp, writes Woody, a Sydney-based journalist, are “the Borg of the fish world.” Uprooting aquatic vegetation, they turn clear-running water muddy, depriving native fish of food, light, and oxygen.

Authorities held the rapidly multiplying Lake Crescent invaders in check by lowering the lake’s water levels and denying them space to spawn. But Australian scientists now believe they have a better solution: “daughterless” genes.

“Biologists have long known that female fish develop when an enzyme called aromatase transforms androgen into estrogen,” notes Woody. If aromatase were chemically blocked, fish could be made to produce only males. Biologist Ron Thresher and his colleagues developed a gene to do exactly that. As carp injected with daughterless genes produce single-sex offspring, “the population of each targeted river or lake will eventually drive itself to extinction.”

That’s the idea, at least. The scientists have

already proved they can develop a daughterless gene for the zebra fish, a two-inch cousin of the carp. Next comes the destructive, fast-breeding mosquito fish. If that effort is successful, work on the daughterless carp will begin.

Skeptics such as Bob Phelps, director of the Australian Gene Ethics Network, worry about the unknowable consequences of releasing “millions of genetically engineered fish into complex ecological systems.” Woody describes “the nightmare scenario: Daughterless carp somehow escape to other parts of the world and breed with dozens of closely related species. Or they evolve in unforeseen ways into superpests.” Thresher, however, says the daughterless carp would be introduced to a target population only gradually over many years, so there would be plenty of time to halt the process if something went awry.

With the continuing spread of destructive alien species around the world, defensive genetic technologies are also likely to spread, says Woody. Scientists and regulators who are dealing with the influx of alien species in North America’s Great Lakes, for example, are interested in the new technologies as a way of dealing with invaders such as the big head carp, a 50-pound monster from China.

ARTS & LETTERS

How Blue Can You Get?

“A Distinctly Bluesy Condition” by Carlo Rotella, in *The American Scholar* (Autumn 2002), 1785 Massachusetts Ave., N.W., 4th Fl., Washington, D.C. 20036.

Buddy Guy’s blues guitar playing, “as instantly recognizable as his voice, can be shrewdly pent up, but when he lets himself go—which is most of the time—it soars

wildly over the top in a torrent of fast, loud, often distorted notes that regain their purity when sustained on a bent string pinned to the fingerboard.” That’s one of the characteristics

that have put the 62-year-old Guy squarely in the middle of an argument over the state of Chicago blues, writes Rotella, an English professor at Boston College.

Guy grew up in Lettsworth, Louisiana, and followed the well-worn track to Chicago in 1957, just in time to play a part in the golden age of Chicago-style electric blues. His name easily sidles in among those of the greats, now mostly departed: Muddy Waters, Junior Wells, Magic Sam, and others. But the city's blues scene started to break up during the mid-1960s. Shaking off the initial shock of urban life, black audiences increasingly found the music's "down home" sounds antique, while teenagers in thrall to the rock and soul music that borrowed so freely from the blues couldn't relate to the adult perspective of most blues songs. And the landscape of Chicago itself changed, as the South Side Bronzeville neighborhood that had long sustained the music disintegrated.

Today, the Chicago blues scene has shifted to a very different kind of neighborhood, including the affluent North Side lakefront, and a very different kind of audience. A white audience. That's roughly where the arguments start.

Critics such as Bill Dahl see the story of Chicago blues as a long slide since the '50s. They "see a once-vital genre reduced to a hot-licks subset of guitar rock, a new Dixieland (with 'Sweet Home Chicago' in the role of 'When the Saints Come Marching In') designed to satisfy tourists seeking the rock aesthetic's equivalent of the source of the Nile," writes Rotella.

The critics smell the stink of inauthenticity, with black musicians "playing white" and white musicians straining to "sound black" in pursuit of the new blues audience.

And then there's Buddy Guy, wailing away like some white "abstractionist guitar hero," an Eric Clapton or Jimmy Page. In classic Chicago blues, notes Rotella, hot guitar playing advertised itself as "an extension of the

human voice raised in song." In the new "postindustrial" blues, the guitar rules. And Guy is the case in point.

He is the dominant figure on the Chicago blues scene. He has an international reputation, his own successful South Loop blues bar, and, at long last, a solid recording contract. He's even appeared in a Gap ad. Guy is among those—such as Chicago's commissioner of cultural affairs, Lois Weisberg—who see the new Chicago blues as a triumph for the musicians (who, after all, didn't have to make up all those old songs about hard times), the city, and the



Chicago guitarist Buddy Guy hits a satisfyingly blue note during a concert in Ohio in the 1990s.

paces. The blues belongs to everybody, they proclaim.

Rotella himself comes down squarely on both sides. Yes, Guy acts like a rock guitar wizard, but you could hear that in his music in the 1950s, too. "His music reposes in a bed of changes and contradictions—a complicated situation, both decline and renaissance and also neither."