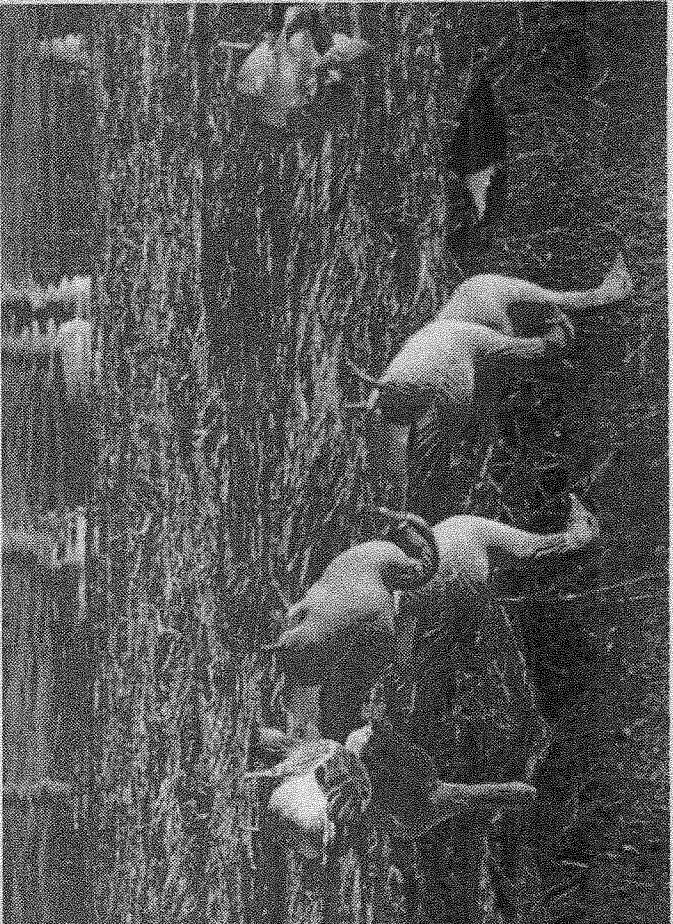


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(Cont.)



MICHAEL AMSLER

Wedding in the wetlands: Migratory geese forage at Chanslor Ranch, Bodega Bay.

Draining the swamps of Louisiana has left the state's estimated 80 remaining black bears stranded in carved-up patches of land too small to support significant numbers of Bruins, and is linked to the decline of at least 80 other threatened or endangered species, according to an EDF and World Wildlife Fund study. Residents took the unusual step of passing a constitutional amendment to start a wetlands conservation fund a decade ago, and other anecdotal successes can be pointed out. Still, the EDF claims, "The expectation that public funds will become available for drainage continues to encourage destruction of bottomland hardwoods today."

In the willow wetlands of the sky-high Rocky Mountains, where moose delight hikers and 51 percent of the Southwest's birds depend on plants for some meals, estimates place wetland loss at 90 to 95 percent.

The reasons: Cattle grazing, housing developments, ski resorts, and conversion to agriculture.

That's not good news for anglers in what may be the nation's best trout fishery. "These streamside wetlands play a vital role by trapping and detaining large quantities of sediment, keeping it out of streams where it could otherwise obstruct spawning," reports the EDF.

Plus, for the anglers to eat trout, the trout need to eat invertebrates, which need to eat leaves. And those leaves drop from the wetlands' alder and willow around this time of year.

The Clinton administration aims for a net increase of 100,000 acres of wetlands per year by encouraging the building of artificial wetlands. Yet, studies have shown that artificially created wetlands often dry up or die because scientists don't fully understand how to recreate the original soggy lands. In some cases, homeowners' associations or commercial developers are left to tend the puzzling marshes, with decidedly checkered results.

That hasn't stopped a new trend toward "mitigation banking," which allows developers to destroy wetlands if they, in turn, give money to a mitigation bank such as Fort Lauderdale-based Florida WetlandsBank. The banks use the money to restore wetlands elsewhere—measures like restoring drainage or killing invasive exotic plants. The banks promise to maintain

the restored wetlands forever. Their value is, instead of having postage-stamp-sized wetlands dotting the landscape, you'll end up with a bigger stand of wetlands in an ecologically sound place, such as at the edge of the Everglades. The problem is, original wetlands function better.

"We still understand wetland functions relatively poorly. This hampers our ability to properly restore wetlands or create new ones to replace those lost to developmental pressures or erosion," says Ed Proffitt, chief of the Wetland Ecology Branch of the U.S. Geological Survey in Lafayette, La.

Northwestern University civil engineering professor Kimberly Gray is creating wetlands in the unlikely industrial setting of Chicago's South Side, but she cautions that re-created marshes "aren't the same thing."

"It's important for us to try to restore them, but I don't think we have in our power yet to go destroy one and recreate one that is comparable in substance and structure. When we create wetlands, they're usually not as diverse or robust," Gray says.

The struggle to meet the needs of people while recovering diminished wetlands has set up a curious dichotomy: Every day, permission to build new homes, businesses, and farms in original wetlands continues to be granted by local or regional governments. Meanwhile, billions of tax dollars or private dollars are earmarked to restore other wetlands. Consider the ongoing restoration of Chesapeake Bay, where the fresh waters of 48 rivers mix with saltwater to produce the nation's largest estuary.

The splashing sound of fish breaking the watery surface and the harsh, noisy squawks of rails flying overhead make the Chesapeake's wetlands among Michael Weinstein's favorite spots. Weinstein, director of the Sea Grant Program in New Jersey and an expert on wetlands and marsh habitats, is optimistic about the makeover: Fish immediately began using previously off-limits areas after a dike was intentionally breached. Yet, years of draining and damming destroyed nearly 60 percent of the wetlands in the three main bay states, sparking a goal of not just maintaining what's left, but adding even more wetlands.

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