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OPINION

Floods are coming, plan now to cope with the deluge

By Tim Palmer Published 3:39 pm, Friday, January 23, 2015

Even though Californians remain gripped in a brutal drought, high waters will inevitably come again. The past is prelude to the future, and exactly 50 years ago, residents of towns and homes along every stream and river in Northern California were reeling from the most damaging flood we've ever seen. The suffering, disruption of lives and costly rebuilding continued for weeks, months and years.

The Christmas Day Flood of 1964 obliterated entire towns, severed scores of bridges, put sawmills out of business, killed 19 people and filled the stream beds of the Eel, Klamath and other rivers with so much sediment that their precious fisheries are only now beginning to recover. Today, in the cathedral groves of Humboldt Redwoods State Park along Highway 101, you have to crane your neck to see painted lines, far up the tree trunks, reminding us how high the muddy water rose.

As unlikely as those flood-flows seem today, no one can afford to say they won't come again. Meteorologists and hydrologists warn us that comparable floods will reoccur. In fact, they're going to get worse.

Drawing on tree-ring records, **Michael D. Dettinger** and **B. Lynn Ingram** reported in the January 2013 Scientific American that "atmospheric rivers" of drenching precipitation can be expected to deliver floods surpassing everything else our civilization's brief history on this continent has seen. And now, virtually every model of climate change indicates that intensified weather events are going radical. Northern California's golden-anniversary of catastrophe, combined with an ominous forecast, compels us to learn from what happened and to take precautionary steps.

Aerial photographs from 1964 show that much of Northern California's acreage receiving the soil-pounding deluge had been recently logged. Badly logged. The camera's images graphically portray a moonscape of bare-soil clear cuts that awaited only saturation to dissolve entire mountainsides. Maps show logging roads so dense that they look like a plate of spaghetti thrown against a wall. Those roads bled water away from its patient seeping route through the soil and, instead, channeled it into eroding deluges that triggered landslides by the hundreds.

Equally important, controls on floodplain development were nonexistent in that year. Homes and entire towns had been built in lowlands without land-use regulation or voluntary restraint and commonsense calculations of flood risks — including those that one landowner might inflict upon his neighbors.

Only the foolhardy would ignore these two unmistakable lessons of the past: First, intact and carefully managed forests are our first defense against the ravages of extreme rainstorms. Forests prevent erosion with soils that absorb runoff, recharge groundwater and allow percolation that avoids the channelized torrents and aggravated floods exacerbated by clear cuts and loggers' roads.

Even so, high water is inevitable. Rivers need room to spill, and the first rule for surviving an irresistible force is to get out of the way. Floodplain zoning must direct new development to higher ground. This is eminently possible; only 7 percent of the American landscape is flood-prone, including both river and coastal areas, according to the [U.S. Water Resources Council](#).

These two crucial needs have not fully been met. State rules for logging on timber-industry land mandate better practices than we saw in the '60s, but they still allow clear cuts to denude the soil on steep slopes prone to landslides. Meanwhile, floodplain zoning mandated by hopeful goals of the [Federal Emergency Management Agency](#) in the post-1964 era became so riddled with loopholes that the aim of limiting flood damage caused by new development could only be considered a sham. Developers simply dumped fill onto floodplains to get their subdivisions approved. This pushes water onto neighbors' property.

Within the Sacramento and San Joaquin river basins, regulations are tighter under the [Central Valley Flood Protection Board](#), but even there, most of the \$1.1 billion remaining to be spent on flooding under Proposition 1E of 2006 will go to levee improvements. Money is needed — not just to strengthen and raise levees — but to move them back and give rivers room to roam. Better zoning throughout the state is also needed to prevent new development in harm's way.

Our memories of California's apocalyptic flood should not end with nostalgia and mere amazement as we gaze up the trunk of that Humboldt redwood to the painted line where the flood finally crested. We need to protect our forests from watershed damage, and we need to ban development in flood zones.

A lot of mistakes were made in the half-century running up to the 1964 flood. What we do in the next 50 years will show if we can learn from the pains of the past.

Tim Palmer is the author of "Rivers of California" (Heyday Books, 2010). www.timpalmer.org. To comment, submit your letter to the editor at www.sfgate.com/submissions/#1.

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