

BIG TENT Home construction on riverbanks not only threatens fish and wildlife habitat but also the structures themselves. River valleys may look safe and scenic when water is low, but raging spring floods are inevitable in a mountainous state like Montana. One University of Montana professor compares building in the floodplain to “setting up your tent on the highway when no cars are coming.”





Too Close for Comfort?

As more people build homes along Montana's cherished rivers, citizens and communities debate how near the water those structures should be.

BY MARY VANDENBOSCH AND JEFF ERICKSON

In spring 1997, people who had built their dream homes on the banks of the Yellowstone River were having second thoughts. The river surged with torrents of mountain runoff that spilled over the banks. Expensive ranchland and home lots eroded into the brown cascade, which toppled mature cottonwoods and blew out famous spring creeks. "A barbeque, lawn furniture, and giant cottonwoods swept past, and then the house's deck fell into the river," recalls Mike Gurnett, Montana Fish, Wildlife & Parks film production supervisor, who took footage of the flood while one home's beleaguered owner watched helplessly nearby. "You think that changes in nature move at a glacial pace. But when you witness something like that, you can see how quickly it can change—in this case, literally overnight." >>

CHRISTOPHER BOYER/KESTRELAERIAL.COM

That devastating flood and a similar one on the Yellowstone River in 1996 focused public attention on homes and other development along Montana's cherished rivers. Citizens and communities began discussing whether structures should be built near the water—and, if so, how close. The issue has come before the Montana Legislature several times in recent years. During the 2007 legislative session, lawmakers argued the merits of statewide setback restrictions, eventually killing a bill that would have required new construction to be at least 250 feet from the high-water mark of a major river and provide a vegetative buffer at least 100 feet wide. Proponents, including some real estate agents and developers, said the setbacks would help protect riparian environments while enhancing property values by protecting scenery. Opponents argued the bill would erode private property rights and overrule counties with setbacks different from those in the bill.

The stream setbacks controversy sometimes pits the rights of individual landowners against those of the public. But the issue is often more complex, such as when the action of one property owner affects property owners downstream. Some of the most effective approaches to river setbacks have moved beyond the “us versus them” perspective. In these cases, citizens find commonly held values, such as maintaining a healthy river, and

then work on finding specific actions that preserve those values.

For sale: streamside lots

Riparian (streamside) development is growing fast, as more and more people move into Montana looking for property along a scenic trout river. According to the nonprofit Sonoran Institute, the number of homes built on quarter-sections of land next to the Yellowstone River in Park County (Paradise Valley) increased 32 percent between 1980 and 2005. In 2006 the conservation group American Rivers named the upper Yel-

“I’ve talked to people who said, ‘Jeez, if we had known, we wouldn’t have put the house there.’”

lowstone the second-most endangered river in the United States. Other western Montana rivers—including the Bitterroot, Clark Fork, Gallatin, Madison, and Missouri—also are seeing housing booms along their banks. A legislative analysis of development in 17 counties found that more than 400 homes have been built in floodplains since 1990, and that 3,800 structures valued at more than \$250 million now exist in floodplains

in those counties. Ron Spoon, FWP fisheries biologist for the Jefferson River, says real estate brokers frequently call him looking for tips on streamside property that have opportunities for fishing, wildlife viewing, and hunting. “They almost always speak at length about how their client ‘wants to do the right thing,’” says Spoon. Unfortunately, the plans often include building a home right on the water’s edge.

The problem has attracted the attention of state officials. In a 2006 letter to his agency directors, Governor Brian Schweitzer wrote, “Development along rivers and streams that

destroys protective riparian areas is possibly the single most urgent ecosystem threat facing Montana today. Not only do these water-

ways and riparian areas provide fish and wildlife habitat, they also provide jobs and recreation.”

Why all the concern about streamside habitat? After all, as FWP’s Native Species Program coordinator Kristi DuBois points out, riparian areas are a “tiny portion of our landscape,” comprising less than 5 percent of the state’s total acreage. Yet DuBois explains that despite their relatively small size, ripari-



BOB MARTINVA

DOING THE WRONG THING Spring floods are natural processes that keep floodplains healthy and ecologically functional. The high, muddy water recharges floodplain wetlands used by shore birds and other wildlife, and it adds sediment that cottonwood seeds need to germinate. Unfortunately, many homeowners build along rivers not knowing how the natural systems function. Though they want to “do the right thing,” says one biologist, their homes can damage the natural resources they want to live near.



PHIL FARNES



CRAIG & LIZ LARCOM



JEFF HENRY

an areas are crucially important for biological diversity, providing habitat for 75 percent of the state's plant and animal species.

Montana's storied fisheries depend on healthy riparian areas. "From an aquatic standpoint, riparian habitat provides all sorts of benefits for trout and the other critters that live in streams," says Chris Clancy, FWP fisheries biologist in the rapidly developing Bitterroot watershed. Vegetation along waterways reduces streambank erosion. It also traps sediment that can wash in from the surrounding landscape and cover clean gravel that trout need for spawning. Streamside plants add vital nutrients from leaves, provide food sources such as insects, and shade the water, keeping it cool. "Riparian areas are essential for the river to function as it's supposed to," Spoon says. Rivers also supply birds with nesting areas, seeds, and flying insects. Furbearers such as otters and muskrats live along the banks, and the lush vegetation and clean water attract deer, pheasants, waterfowl, and other game animals.

Riprap: a "losing game"

"We all have dreams of a house by a stream," says Clancy. "But because of the impacts involved, we can love these resources to death and disrupt the natural processes that create the very things that draw us to these rivers." The most immediate and obvious effect of

riparian development is vegetation lost to bulldozers blading the building site and access road. Riparian development also disturbs soil, allowing noxious weeds such as knapweed and leafy spurge to thrive and crowd out native grasses and flowering plants.

Some of the worst damage to natural river systems comes from landowners trying to prevent their riverside property from being swept away during the high water that comes from spring runoff. Though flooding is a natural and essential river process, landowners attempt to protect their property by adding rocks that raise and fortify the banks. Called ripraping, this common practice may save some houses, but the tall, rock-lined banks provide little to no fish or wildlife habitat. Even worse, they constrain the river's flood energy and force it farther downstream, making things even worse for homeowners and communities there and encouraging them to riprap their own banks. "Riprap begets riprap, which begets more riprap," says Glenn Marx, a Jefferson River Valley resident active in the Jefferson River Watershed Council. "You don't de-energize water when you put in riprap; you just send more energy downstream. It's a losing game."

Another problem caused by ripraping is that floodplains "protected" from flooding by the boulder barriers are denied the essential influx of sediments and other natural re-

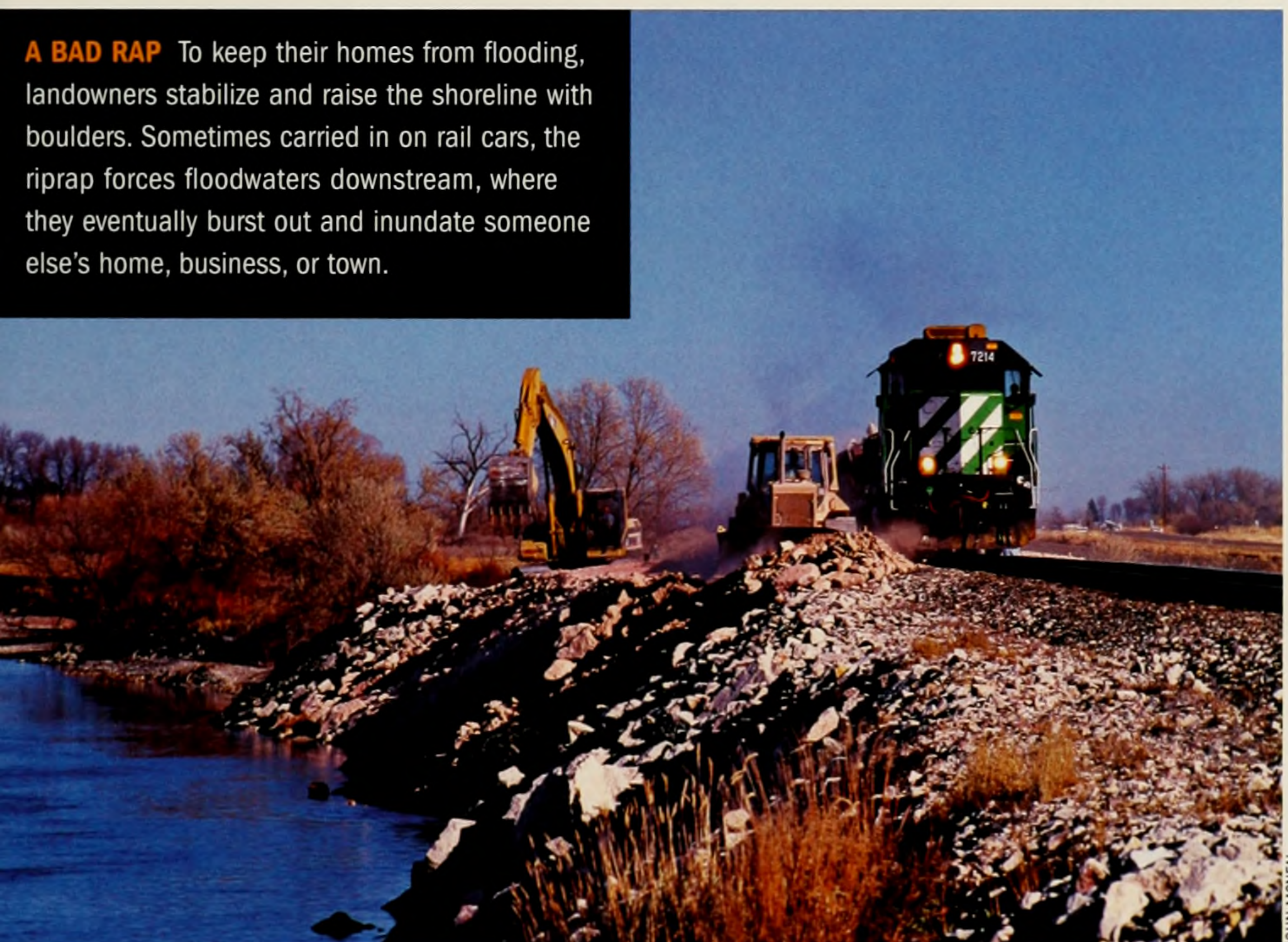
sources carried by high water. One of Montana's natural wonders, the cottonwood forests towering along many rivers depend on periodic floods that sweep across the floodplain and deposit fresh mud that cottonwood seeds need for germination. Due in part to flood control, cottonwood regeneration has declined in many areas, putting at risk the many wildlife species that rely on these forests.

Perhaps the biggest problem, say biologists, are the cumulative effects of riparian development. An individual house may not do much harm, but add up all the habitat loss, bank degradation, and other ecological disturbance caused by streamside construction up and down a river valley, and "it really has a negative effect," says DuBois.

Spoon says that after a subdivision or home is built on a river, it's next to impossible to mitigate its effects on the riparian ecosystem and the fish and wildlife living there. "Once you develop the banks, that damage will be there for a long, long time," he says. Unfortunately, says Clancy, many homeowners learn too late that their new residence is creating problems: "I've talked to people who said, 'Jeez, if we had known, we wouldn't have put the house there.'" To help builders and property owners better understand how their activities affect riparian areas, Governor Schweitzer's Task Force for Riparian Protection has published a brochure outlining voluntary steps people can take to make their developments more river-friendly. "You need to let the river be a river," says Marx. "It needs to be able to flow and meander, to do what a river does in a naturally functioning system. The more you can protect that, the better off everyone is in the long run."

Floodplain construction defies common economic sense. For thousands of years, rivers carrying the spring snowmelt from Montana's abundant mountains have periodically surged over their banks. In some years there is little flooding. In others, such as in the Paradise Valley during the mid-1990s, flooding can be historically severe. When the inevitable big floods hit, the costs to individuals and communities can be enormous. The 1997 floods caused over \$7.6 million in damage to Montana's public entities, including cities, counties, schools, and irrigation districts in 23 counties. "Building in the floodplain is like setting up your tent on the

A BAD RAP To keep their homes from flooding, landowners stabilize and raise the shoreline with boulders. Sometimes carried in on rail cars, the riprap forces floodwaters downstream, where they eventually burst out and inundate someone else's home, business, or town.



JOHN MCNEAL

highway when no cars are coming,” says Vicki Watson, a University of Montana professor of environmental sciences.

Setbacks and buffers

Two of the most effective tools for protecting riparian areas are regulated setbacks (the minimum distance between a structure and a river) and vegetative buffers along the riverbank. Local governments have the authority through zoning, subdivision review, and other regulations to require setbacks and vegetative buffers. More than a dozen Montana cities and counties have now adopted riparian protection regulations.

Appropriate setback and buffer widths often depend on what people are trying to preserve. Maintaining a scenic vista, for instance, can require setbacks of a mile or more, while protecting a key piece of rare amphibian habitat might mean keeping development a shorter distance from the riverbank. As a result, setbacks and buffer widths vary markedly among Montana jurisdictions, depending on the nature of the stream, the specific resources being protected, the planning mechanisms, and political compromise.

“Communities don’t make conscious decisions to harm a river. But when they don’t take action, that’s in effect what they do.”

At one extreme, for example, are Chouteau County’s development permit regulations, which require that visible residences be set back a full 3 miles to protect the expansive “viewsheds,” or vistas along parts of the Wild and Scenic Missouri River. Upstream on the Missouri, Lewis and Clark County subdivision regulations apply a river setback of 250 feet and a natural vegetation buffer of 100 feet to preserve natural resources, views, and recreational uses. Other Montana communities have setbacks of 50 feet or less.

Mary Vandenbosch and Jeff Erickson of Helena are freelance writers and policy and planning consultants.

NESTLED IN Setbacks and vegetative buffers help homes blend in to the landscape, protecting privacy. They also allow the river to continue functioning naturally—which includes providing habitat for the fish and wildlife that attract people to rivers in the first place.



“There isn’t one generic buffer width that will keep the water clean, prevent flood damage, protect fish and wildlife, and satisfy demands on the land,” concludes a planning guide produced jointly by Montana Audubon, the Montana Watercourse, and the Montana Department of Environmental Quality. Accordingly, some local governments have eschewed fixed distances for a more flexible approach that takes into account varying conditions along rivers.

Clancy says fixed distance regulations “can be simpler to administer, but you lose the sophistication of a more site-specific approach.” Ultimately, communities need to determine what they most want to protect, and make choices based on those values.

Some Montanans such as Tim Davis, director of the Montana Smart Growth Coalition, advocate statewide setback standards. “It’s important to be consistent across jurisdictional boundaries, because the actions of people upstream can cause flooding downstream, putting people in harm’s way,” he says. Others oppose a statewide, one-size-fits-all approach. Glenn Oppel, government affairs director for the Montana Association of

Realtors, says his organization prefers that regulations arise through local planning and zoning, because “the landowner has a say and the opportunity to make a valid protest.”

Landowner-driven solutions

The Big Hole watershed offers one local success story, a hybrid approach combining both fixed and flexible distances. A grass-roots effort initiated by the volunteer Big Hole Watershed Committee resulted in standards covering the river’s entire 160-mile length through four counties. The standards generally require anyone planning to build within 500 feet of the river to apply for a development permit. A permit may be issued if the development meets six criteria relating to public health and safety, riparian protection, and natural resource functions. Though structures typically must be 150 feet from the river, the distance may be modified to satisfy all the criteria. For example, a structure proposed for a highly erodible streambank might need to be set back farther than 150 feet.

How could four southwestern Montana counties succeed in approving riparian regulations when others have failed? Garth Haugland, chairman of the Beaverhead County Commission, is unequivocal. “The standards were landowner-driven,” he says. “They didn’t come from the top down.” In numerous public meetings held throughout the Big Hole watershed, residents agreed that they wanted to preserve the essential floodplain and habitat functions of the river’s riparian areas.

The Big Hole story is encouraging, but it is also anomalous. Most Montana riverbanks remain unprotected by statewide setbacks and buffer zone requirements. And while state lawmakers and city councils argue over setback restrictions and buffer zones, riparian development continues. “Communities don’t make conscious decisions to harm a river,” says Spoon, “but when they don’t take action, that’s in effect what they do.” 🐻

Learn more about protecting Montana rivers by visiting <http://water.montana.edu/setback>. Get your free copy of the Governor’s Task Force for Riparian Protection brochure at rray@mt.gov or (406) 444-5319.