

SOIL SENSE

A PRACTICAL GUIDE TO LOW-IMPACT RIDING

BY GARY SPRUNG

MOUNTAIN BICYCLISTS HAVE AN IMAGE problem that's not completely deserved. We're treated worse than traditional trail users, particularly when it comes to our perceived part in creating soil erosion.

"A waffle print may mean nothing," says Michael Kelley, a director of the Bicycle Trails Council of the East Bay in Northern California. "It may be no damage at all, but other trail users get upset just seeing it."

Scientific studies have concluded that mountain bikes cause about the same erosion as hikers and significantly less than natural forces. Sometimes bicycle traffic has a positive effect on the land, such as when it smooths a trail. Nevertheless, any cyclist who rides off road must exercise respect for the soil. Here are 4 suggestions on how to do it.

DIRT DEXTERITY

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Ride only on established routes.

Trails exist to facilitate travel and to keep everyone within the same corridor so they don't trample a wide swath of vegetation. You don't have to be a scientist to figure that riding over an alpine forget-me-not, or a lousewort, or a sapling pine that is 6 years old and 6 inches tall will harm that plant and the natural environment. Plants can withstand a degree of trampling, but it's difficult to know how much.

If we stick to existing routes, however, we'll never find new ones. So when pathfinding, we need to exercise judgment and restraint. Pay attention to the turf beneath your wheels and look behind you to see what impact you're causing.

Wet meadows, where trails are often indefinite, overgrown or muddy, may be an exception. Joseph Seney, a soils scientist from Montana who analyzes erosion created by trail users, suggests that it may be appropriate for people to fan out and start different tracks across wet meadows.

"Meadows have tendencies to grow back fairly quickly," Seney says. "If we keep riding on muddy or wet sections, the mud will get deeper and deeper. Then no one will ride it anyway, and people will have to relocate the trail." This technique may only apply to wetlands. Plants living in dry soils are more sensitive

to destruction by mechanical trampling. And Seney cautions that the wisdom of the fan approach has not yet been verified by any scientific experiments.



Walking your bike along a muddy trail minimizes traction-induced rutting, but sometimes a better solution is not to ride during wet periods.

Another situation where a cyclist may want to try a different path is when an obstacle, such as a fallen tree trunk, blocks the trail. Often you'll see side paths cut around it. But Joe Murray, the many-time national champion from Crested Butte, Colorado, advises that when a section of a trail is unridable, it's best to stay off the alternate trail, because it will just damage more soil and plants. "Some people *have* to ride everything," says Murray. "I think it's sometimes better to get off and walk over the log, instead of riding around it. Better yet, bring a saw and cut the log, or move it out of the way." Again, good judgment is required. The rule is not hard and fast. Perhaps, if conditions are right, the new path around the obstruction may be a better route, and someday, the recognized trail.

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Avoid muddy trails.

When you ride through mud, you get dirty. You also churn the mud and make it deeper. If the muddy section is sloped, the churning will cause more soil erosion, which may produce more runoff and even more mud. Eventually, the trail may flow away.

Some soils, particularly those with a high percentage of clay, become thoroughly muddy during a heavy rain. Instead of mud puddles, you're faced with an endless ribbon of muddy trail. What to do? If you ride it, your bike may quickly gunk up to the point that the wheels won't turn. Even if you push your bike the gunk still accumulates. One approach is straddling the trail. Walk along one edge while pushing your bike along the other. But if

doing this affects plant life or widens the trail, maybe you shouldn't be riding it that day. In wet climates like the state of Washington, mud may be unavoidable. Gary Klein of Klein Bicycles says, "In the Northwest, if we don't ride mud, we don't ride."

Knowing the composition of the soil you ride on is helpful. In Crested Butte there's a lot of clay in the soil, so we don't ride during and immediately after heavy rain. But in Salida, just 60 miles east across the Continental Divide, soils are sandy and dry. There, the worst conditions come after a long dry spell, when the soil loosens. Rain seems to improve trail surfaces.

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Brake properly and don't skid or slip on hills.

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"Skids are for kids," says Kelley. Perhaps no action causes more soil damage than locking up a back wheel, stirring a cloud of dust. That dust is airborne soil. The problem is most apparent on steep downhill and switchbacks. Beginners will often use their back brakes heavily and go light on the front, thinking that this will stop them from flying over the bars. (Actually, hitting an object in the trail—a rock or log—is the primary cause of an endo.) This is poor braking and it locks rear wheels. Apply more pressure to the front brake. It's stronger and will rarely cause a skid. Be careful with the rear.

Unfortunately, a popular technique on switchbacks is to lock the rear brake to fishtail through a narrow turn. This causes more trail erosion than any other type of riding. Jim Hasenauer, spokesman for the International Mountain Bicycling Association, regularly observes fishtailing on trail switchbacks near his Southern California home. His strategy is to approach the sharp downhill turns almost at a standstill. As he rolls into the switchback, he applies the front brake lightly, then "feathers" both brakes—a series of rapid, intermittent applications. Try this.

Sidehills—both up and down—can be another problem. Hasenauer suggests riding the uphill edge of the trail and avoiding the lower section, which is more vulnerable to erosion.

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Don't over-inflate your tires.

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One theory says that lower tire pressure is good for the soil. The idea is that a softer tire will bend and mold to the irregularities of the trail surface, whereas a hard tire will bite into the bumps. High-pressure tires will contact less ground, exerting more pressure per unit area, a factor known to cause erosion. This sounds like a plausible idea, though

it hasn't been scientifically verified.

ONE UNIVERSAL RULE

There are exceptions to the rules of soft cycling. There are too many variables in geography, soils, weather conditions, and trails to make many universal statements.

We do know the most important factor is attitude. If you always ride with respect for the soil and its plant life, then you'll probably cause minimal damage. ●

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