

SHARKS
CHASING THRESHERS
IN VIOLENT SEAS

TURKEYS
KILL YOUR BIRD
ON THE LAST DAY

GUNS
THE AFFORDABLE
10-CALIBER RIFLE

SPRING FISHING

WALLEYE PRO TIPS
TROUT HOTSPOTS
BASS TRICK RIGS
CRAYFISH BAITS

PLUS: \$30
REELS TESTED

*

FIELD & STREAM

THE WORLD'S
LEADING OUTDOOR
MAGAZINE

MAY 2012

*
FISH, SHOOT,
SURVIVE.
WIN \$25,000
(LIKE THESE GUYS DID)
P.50

BE A **TOTAL** OUTDOORSMAN

71 WAYS TO HUNT, FISH, AND CAMP LIKE AN EXPERT

- › Spot Hidden Deer › Escape a Grizzly › Find Bait Anytime
- › Build a Predator Rig › Master the Swing Cast › Free a Grounded Boat
- › Work Topwaters at Night › Stalk a Duck Pond › Win at Camp Poker

\$3.99 U.S.



FIELDANDSTREAM.COM

THE PERFECT TROUT STREAM

A POOL FOR EVERY RIFFLE. BIG ROCKS AND SMALL ONES. CURVES, BUGS, EVEN FISH YOU MAY NOT LIKE. FIND ALL 10 OF THESE FEATURES AND YOU'D BETTER START CASTING

BY JEFF HULL

ILLUSTRATIONS BY ANDRE MALOK

POOLED AFTER POOL filled with slabs of trout. Long, straight glides where you can drift a dry fly without mending. Deep, dark channels just begging for a big spinner. One of those images may define your perfect trout stream, but if the trout had a say, they'd prefer something quite different.

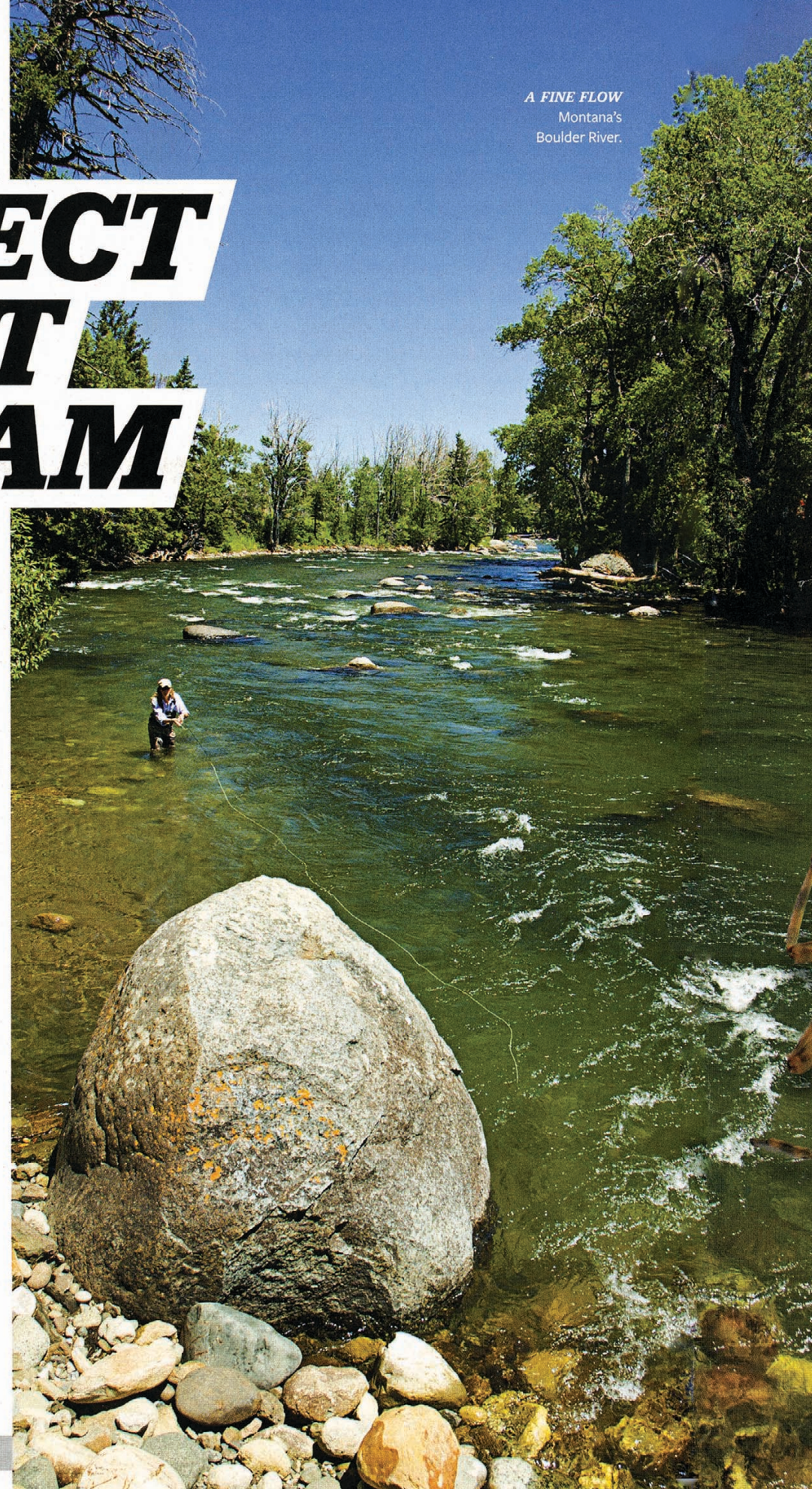
Shannon Skelton knows the trout's point of view. He's chief fisheries biologist and president of CFI Global Fisheries Management, a company he founded that restores and rehabilitates trout streams. Skelton and his staff of hydrologists, aquatic biologists, and riparian ecologists have worked on projects around the world—and in some cases actually created fishable water.

The perfect trout stream, Skelton says, is not really about fish. "Fish are the end product of habitat enhancement," he points out.

Jack Williams, senior scientist with Trout Unlimited, concurs. "Streams that have a diverse habitat mix are going to support diverse macroinvertebrate communities and therefore diverse fish communities," Williams says. "Whether you're in West Virginia or in Montana, a lot of these rules transcend geography."

Know those rules and you'll catch more fish. Here are Skelton's 10. ➔

A FINE FLOW
Montana's
Boulder River.



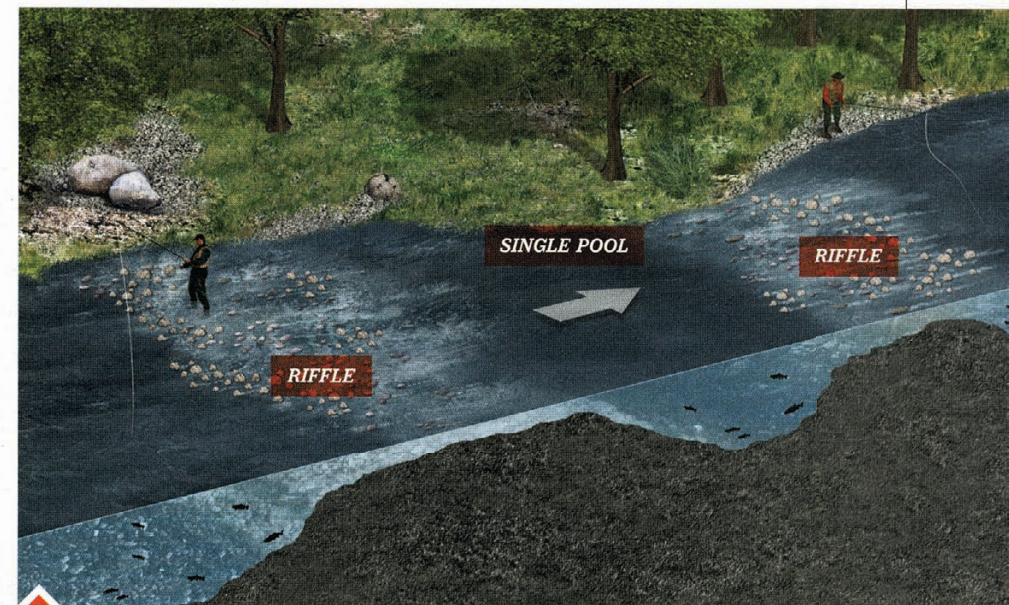
TRAIT #1 DIVERSE MACRO-INVERTEBRATE POPULATIONS

WHAT TO LOOK FOR: The perfect stream contains healthy populations from all five main macroinvertebrate orders—caddisflies, mayflies, stoneflies, riffle beetles, and midges. The complete suite of stream bugs ensures forage in the drift at all times. "Think of it like a garden," says CFI fisheries biologist Jay Robinson. "If you have a variety of species, you're always going to have productivity."

THE ANGLER'S TAKEAWAY: Use a small seine in riffles to examine what's in the drift. "Only 10 percent of a trout's feeding habits are on the surface," Skelton says. "The forage is on the bottom and in the drift."



GOOD EATS An Epeorus mayfly nymph.



SINGLE POOL

RIFFLE

RIFFLE

TRAIT #2 EVEN RIFFLE-POOL RATIO

WHAT TO LOOK FOR: A perfect stream will have one pool for every section of riffle. Pools provide resting places, protection from aerial predation, refuge from high water, and overwintering habitat. Riffles provide food. "Ar-

guably, 80 percent of benthic [stream-bottom] macroinvertebrates are derived from riffle communities," Skelton says.

A 1:1 riffle-pool ratio ensures the right amount of sediment deposit. "Too many

pools, the water slows and you get a lot of deposition," which clogs microhabitat, says Robinson. "Too many riffles and you have a sediment-starved area that eats away at itself."

THE ANGLER'S TAKEAWAY: When you see a riffle

followed by a primary pool and then a secondary pool, the secondary pool "will have a lot less depth, a lot more deposition. Macroinvertebrates dislodged from the riffle won't be carried through to the fish," Skelton says. "If there was a neon sign saying PLACE FLY HERE, it would be in that primary pool."

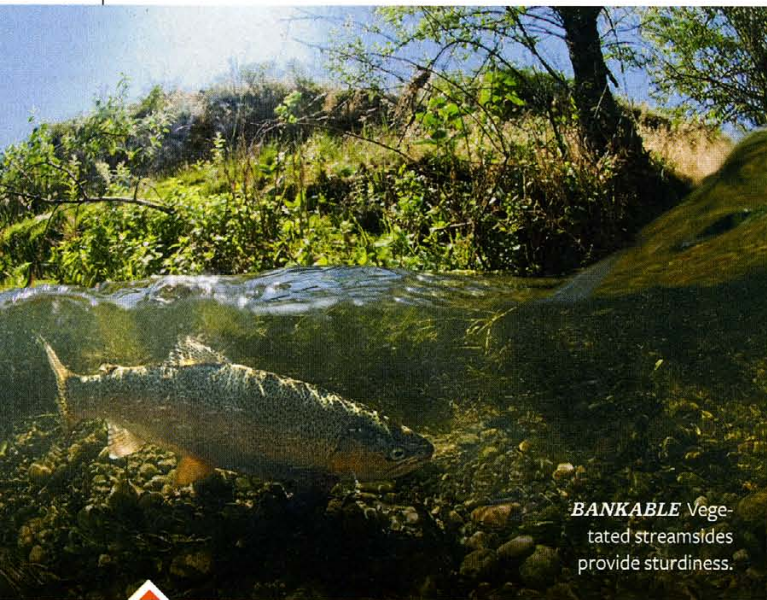


SERVICE SPECIES Whitefish and suckers aid stream health.

TRAIT #3 FISH DIVERSITY

WHAT TO LOOK FOR: A lot of flyfishermen hack whitefish and suckers to eliminate competition for trout. But those fish provide ecological services to the stream, such as keeping algal growth in check and releasing nutrients to the system when they die. More important, as trout get older and larger, they prey increasingly on small fish. Juvenile whitefish, suckers, and other species are ideal nuggets of forage for big trout.

Every little whitefish that gets munched is a juvenile trout that doesn't. **THE ANGLER'S TAKEAWAY:** In streams that have a diversity of species, approach pools and deep holding water with streamers to provoke large trout that might not be actively feeding but won't pass up an easy bundle of calories. "I test the water with a double streamer rig, just to wake up anything that's in there," Skelton says.



BANKABLE Vegetated streambanks provide sturdiness.

TRAIT #4
STREAM STABILITY

WHAT TO LOOK FOR: Streams want to change, and a dynamic system is usually the most productive one. Still, a diverse, healthy, native community of riparian plants provides bank stability and contributes steady amounts of organic matter to feed macroinvertebrates. Chemical stability is important, too: a well-buffered pH

that's close to neutral, a stream that doesn't get high acidity during spring runoff. Headwater fisheries, for instance, often deceive. "You see these nice streams cascading over boulders and flowing through pine forest, with great holes and riffles, but you can't find macroinvertebrates and you can't find many fish," explains Robin-

son. "All that water is flowing through highly tannic and acidic soils and over granite rocks. The water's not picking up anything to help it buffer." **THE ANGLER'S TAKEAWAY:** Target stretches of stream flowing over sedimentary rock. Avoid banks where soil is falling into the water and channels that change drastically from year to year. Seek out sections of bank with healthy stands of native vegetation.

TRAIT #5
SHALLOW RIFFLES

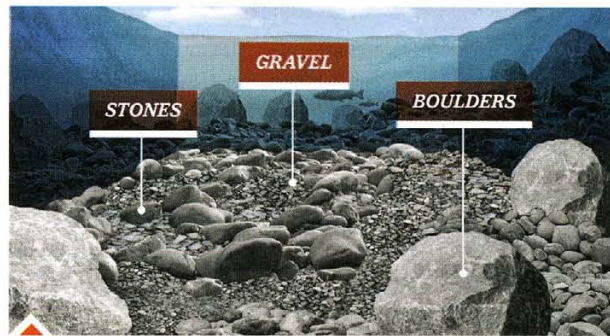
WHAT TO LOOK FOR: The majority of macroinvertebrates in a trout stream depend on algae for forage. But in riffles much deeper than 12 inches, ultraviolet light can't penetrate to fuel the photosynthesis that algae need to grow, robbing all those bugs of their primary food source. A stream with few riffles

can't support a host of macroinvertebrates, and thus can't support many trout. **THE ANGLER'S TAKEAWAY:** Fish downstream from large swaths of riffles less than a foot deep. Deep pools adjacent to riffles in the 6- to 12-inch range are ideal. "Riffle communities are food conveyor belts," Skelton says.



TRAIT #6
THE RIGHT TEMPERATURE RANGE

WHAT TO LOOK FOR: Trout thrive in water temperatures ranging from 52 to 66 degrees. Brook trout prefer the lower end of that range; browns the upper. Not coincidentally, some of the trout's favorite bugs prefer those same temperatures. "That's when the fishery is at max productivity," Skelton says. When a stream's temperature remains relatively constant, as is the case in many spring creeks, fishing can be productive all year long. **THE ANGLER'S TAKEAWAY:** It may seem obvious that carrying a stream thermometer can help you determine optimum fishing conditions. But measure in more than one place. In many streams, temperatures vary from stretch to stretch.



TRAIT #7
VARIED SUBSTRATE

WHAT TO LOOK FOR: Unevenly sized substrate is perfect for the bottom of a trout stream. Gravel enables successful spawning, stones create microhabitat for fry, midsize riffle cobbles increase bug productivity, and big boulders create holding areas for trout. **THE ANGLER'S TAKEAWAY:** The mix is the thing. If you find yourself wading on long stretches of fine gravel bottom or uniform cobbles, move along until you find a good assortment of rock sizes.

TRAIT #8
STRUCTURAL DIVERSITY

WHAT TO LOOK FOR: Along with a wide variety of structural habitat in the streambed, there should also be woody debris falling in from the banks. Rocks and woody snags produce unique flow refuges, suitable to different fish. Old predatory trout seek out broad boulders; smaller rocks shelter the smaller trout that are exiled from the prime lies by the big fish. An overabundance of wood leads to silt and sedimentation. Not

enough, however, and you lose the organic particulate matter many bug species need to survive. **THE ANGLER'S TAKEAWAY:** Look for diverse features along the bank and in the water—snags, sweepers, boulders, undercut banks, overhanging grass. Structure creates varying flow patterns depending on what's around it; the same boulder in two different places will create two different currents.



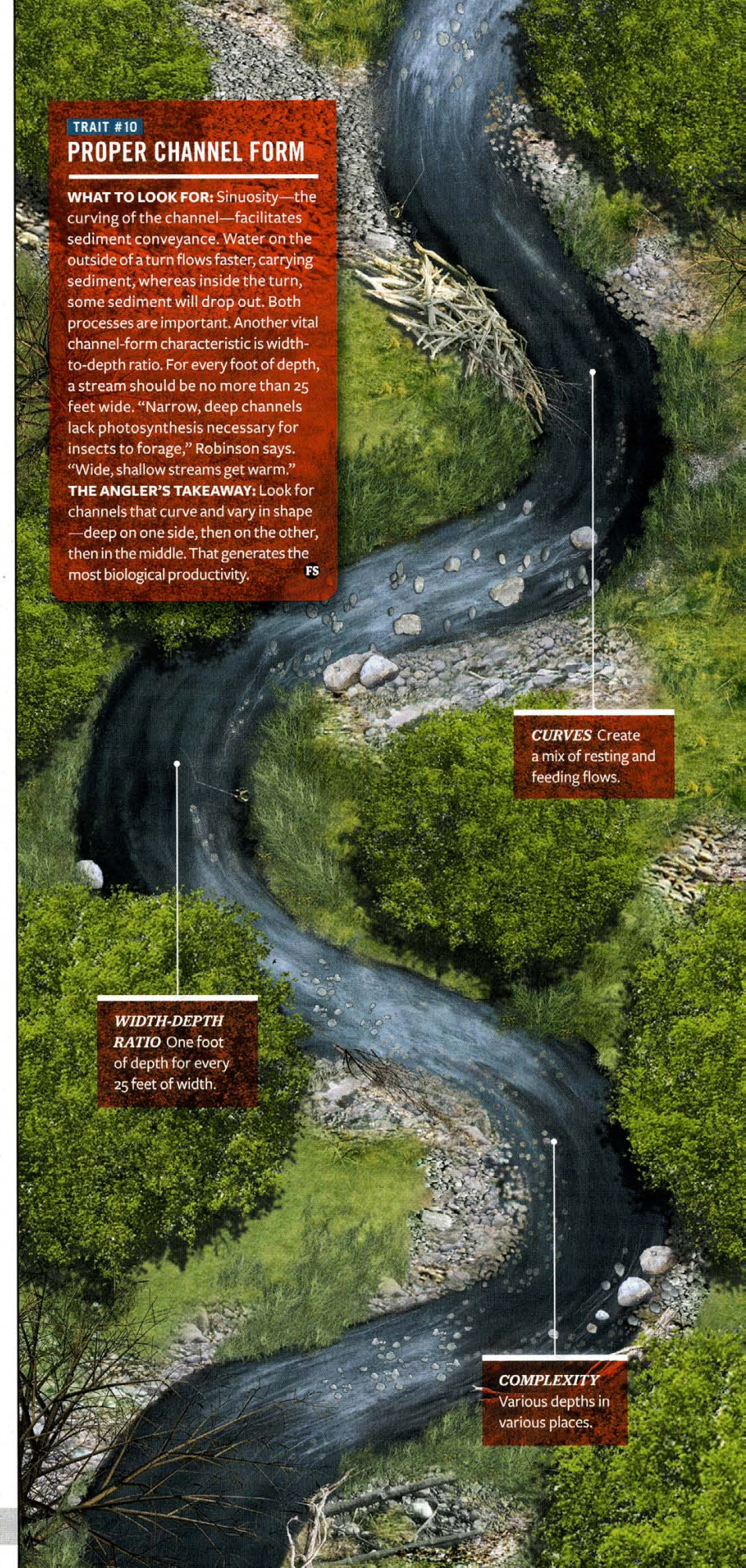
PREVIOUS SPREAD, FROM LEFT: BRIAN GROSSENBACHER; BARRY & CATHY BECK; PAUL VECSEI/ENGBRETSON UNDERWATER PHOTOGRAPHY; FACING PAGE: BILL BUCKLEY; THIS PAGE, CLOCKWISE FROM TOP LEFT: TIM ROMANO (2); BARRY & CATHY BECK; BILL BUCKLEY

TRAIT #9
FISHABLE HABITAT

WHAT TO LOOK FOR: If a stream is stuffed with fish nobody can reach, it's not a great fishing stream. "Fishing behind structure, drifting through deeper pools, fishing a dry fly through a run, fishing riffle tailouts, accessing casting lanes, wading safely—we weigh these factors heavily when we do our stream restoration projects," Skelton says. **THE ANGLER'S TAKEAWAY:** Wade, hike, or cross the stream so you can get into good casting positions. The more accurately you can cast into tight cover that other anglers can't reach, the better your catch rate will be.

TRAIT #10
PROPER CHANNEL FORM

WHAT TO LOOK FOR: Sinuosity—the curving of the channel—facilitates sediment conveyance. Water on the outside of a turn flows faster, carrying sediment, whereas inside the turn, some sediment will drop out. Both processes are important. Another vital channel-form characteristic is width-to-depth ratio. For every foot of depth, a stream should be no more than 25 feet wide. "Narrow, deep channels lack photosynthesis necessary for insects to forage," Robinson says. "Wide, shallow streams get warm." **THE ANGLER'S TAKEAWAY:** Look for channels that curve and vary in shape—deep on one side, then on the other, then in the middle. That generates the most biological productivity.



CURVES Create a mix of resting and feeding flows.

WIDTH-DEPTH RATIO One foot of depth for every 25 feet of width.

COMPLEXITY Various depths in various places.