

Reservoir Trees: Tragedy and Opportunity

Peter Carrels

When Sioux Indians from Standing Rock Reservation arranged to harvest forests along the Missouri River that would be drowned when Oahe Dam closed and Oahe reservoir filled, the Army Corps of Engineers intervened through litigation. Though the Corps eventually lost the case, the delay caused by that legal action prevented the trees from being salvaged.

More than 40 years later, countless remnants of the river valley's once-great forests stand either as leafless skeletons poking through the water or, increasingly because of drought, they mantle mudflats on the floodplain. All told, some 60,000 acres of woodlands perished beneath Oahe reservoir.

Many of us who grew up knowing the river as a reservoir are familiar with the sight of naked trees protruding from water. It always seemed like a waste to me, and an odd sight too.

I swear that 20 years ago, while hiking the edge of Oahe reservoir near Mobridge and gazing over hundreds of partially submerged trees, I imagined inventing an underwater chainsaw.

And now there is just such a device. But it is far more complex than I could have dreamed. A submersible, remote-controlled robotic vehicle is equipped with a 54-inch chainsaw that can harvest trees eight feet across in the wink of an eye. Attention would-be lumber barons: Cottonwood that thrived along the free-flowing Missouri before many of us were born can be yours.

I have no idea what sort of value is attached to cottonwood in this condition. But the prospect of removing trees from the reservoir after all these years is certainly intriguing.

The chainsaw is operated from a capsule on the deck of a barge, by a person not likely to look like a lumberjack but needing the skills of a video-game expert. Using a joystick, the operator can maneuver the underwater vehicle on the floor of lakes and reservoirs as deep as 1,000 feet.

Called the Sawfish, the robotic vehicle is actually a van-sized, box-like submarine equipped with sonar, advanced video imaging coming from eight cameras, and a



Triton Logging Company's Sawfish Underwater Harvester is a new piece of marine technology. It operates via remote pilot and can operate at any depths. It has a feller grapple and 55-inch chainsaw to cut trees via eight built-in video cameras and sonar. It deploys reusable air bags that attach to the trees to float them to the surface. It may find a use in the Missouri River.

Photos by Triton Logging Company

75-horsepower engine aided by seven directional thrusters that makes it agile underwater. A pair of 52-inch pincers clasp a tree trunk before the waterproof chainsaw mounted on a mechanical arm finishes the job. But not quite yet. Waterlogged trees don't float, so they need a helping hand. In what is called the most ingenious aspect of this amazing operation, the Sawfish pilot, using computer technology, affixes an airbag to the tree before it is cut. Once the powerful saw has sliced through the wood, the durable airbag hoists it to the surface where a tugboat rigged with a pair of hydraulic claws pulls the wood from the water and stacks it on a floating bunk.

John Godsall, the brains behind the Sawfish, now has two of the craft working a huge reservoir in Canada where an estimated \$1.2 billion in timber is available. He plans to harvest 45,000 trees a year there. Godsall also has plans to develop 10 more Sawfishes to work on underwater forests around the world. According to reliable research, there are at least 300 mil-

lion submerged trees around the world.

There are, of course, environmental advantages to harvesting underwater trees rather than trees on dry land. Removing timber from reservoirs and lakes also has safety benefits. Godsall is preparing to help clear trees from beneath Volta Lake in Ghana, where fluctuating lake levels expose crowded ferries to barely submerged treetops. Punctured passenger vessels have caused the deaths of hundreds in recent years.

Reservoir forests and submerged logs do provide habitat for fish and wildlife.

But imagine the possibilities for a modern-day, high-tech timber harvest 50 some years after the federal government blocked efforts from ousted citizens to cut trees on land that was, for all intents and purposes, taken from those people.

Editor's Note: Peter Carrels is a writer from Aberdeen, S.D.