



Triton Logging Recovers Underwater Forests

The availability of recovered wood from a variety of sources is growing, but the wood is often expensive, the quality varies, and, at least in the case of riverbed recovery, there can be a negative environmental impact from disturbing sediments. Triton Logging, Inc., of Saanichton, British Columbia, promises a recovered lumber resource that is high-quality, abundant, and environmentally benign to harvest.

According to Triton, there are about 45,000 dams in the world over 100 meters (330') tall. Most of these dams flooded land at a time when timber was considered a virtually unlimited resource. Clearcutting reservoir areas would have been time-consuming, so the typical practice was simply to flood standing forests; worldwide a timbered area twice the size of New Jersey is underwater. Triton conservatively calculates that over 300 million trees, preserved in the anaerobic underwater environment, are ready for harvest. That translates to 100 billion board feet of timber awaiting only an effective recovery process.

When Triton CEO Chris Godsall began looking at harvesting this forgotten treasure, he immediately identified the need to avoid the dangerous practice of sending human divers underwater with pneumatic chainsaws and, for efficiency and environmental reasons, to avoid the more common practice of pulling a tree up by its rootball. As a result, Triton developed the Sawfish™, which the company describes as "the world's only deep-water logging machine." The size of a minivan, the Sawfish is a submarine powered by an electric motor and tethered to a surface barge, where a human operator remotely "flies" it. Rated for depths up to 700 feet (200 m), the Sawfish begins harvesting a waterlogged tree by attaching and inflat-

ing one of the 50 reusable airbags it carries. Hovering above the reservoir bottom to avoid disturbing the ecology, the Sawfish grapples a tree trunk with hydraulic arms and cuts it with its 55-inch (1.4 m) chainsaw. Released by the Sawfish, the tree buoys up to the surface to be recovered by a team on a barge as the Sawfish moves to its next target. The Sawfish can harvest over 100 trees a shift, or one every five minutes, surfacing only to replenish airbags; power for the harvester is generated on the barge and transmitted through an electric cable in the tether.

Last year, Triton harvested 2,000 cubic meters (575,000 board feet) of timber, and now, with an expanded fleet of three Sawfish operating on two reservoirs in British Columbia, Triton expects to get both faster and more productive as the company responds to market demands. "We are consistently approached by green builders and companies looking to use green wood," said Jim Hayhurst, Triton's vice president for marketing. Triton offers fir, hemlock, cedar, and pine lumber that is generally comparable to conventional lumber. Triton distinguishes itself with the promise of a consistent supply, a great story, and exceptional environmental qualities.

Those environmental qualities have earned Triton certification through the Rainforest Alliance's SmartWood Rediscovered Wood Program. "The Canada Department of Fisheries and Oceans has looked at us and deemed it the most friendly way of doing underwater logging," added Hayhurst, contrasting Triton's underwater approach with operations that remove the tree and rootball. At the request of regulatory bodies, Triton frequently leaves

debris for fish habitat and doesn't harvest trees around osprey nests (which are common on the portion of trees extending above water). Compared to land-based logging with its roads, infrastructure, and slash piles, Triton's harvesting system has a light environmental touch. It is looking at using renewable power to run its harvesting operation (which already uses vegetable-based hydraulic fluids) and cogeneration from wood waste in its milling and kiln operations. Although the wood mills well and dries evenly, kiln-drying is one area of increased environmental cost, since the waterlogged wood takes longer to dry.

Considering the mixed environmental impact of large hydroelectric dams, Triton makes the most of a resource that was frozen in time when these reservoirs were flooded. Regulatory bodies that work with Triton are usually very cooperative, said Hayhurst, who noted that, in some cases, Triton may actually be paid to remove trees to improve navigation and the recreational value of reservoirs.

Triton's logging operation is cost-effective compared to both other underwater and other land-based systems, said Hayhurst, adding, "We are committed to getting products out there, creating a supply at prices, grades, and



Triton's logging submarine, the Sawfish™, emerges from a British Columbia reservoir. Photo: Triton Logging, Inc.

quality comparable to others." So far, in addition to selling dimension lumber and flooring, Triton has provided feedstock for furniture, paneling, and laminated beams, and value-added wood for higher-profile projects like Dockside Green on Vancouver Island, British Columbia (see *EBN* Vol. 14, No. 1). "Our model is to maintain control over the wood from these reservoirs," said Hayhurst, "and present it as the most environmental choice your money can buy."

Joe Van Belleghem, a developer of Dockside Green, expressed enthusiasm for the wood. "Wood is obviously a great product when harvested sustainably, and Triton's product is of particular interest," Van Belleghem told *EBN*. Describing the reactions of Dockside purchasers, he said, "Some are very supportive of the idea that we are supporting a local business, others are supportive of the environmental principles, and others find the technology cool."

The local wood angle so far applies only to customers in the Pacific Northwest, but if Triton follows through on its plans, its products could become available worldwide. Now that the company has gotten its feet wet in three reservoirs in Canada, Triton plans to harvest in international waters, perhaps including some in the U.S., by 2007. — *TR*

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Preserved for decades under water, a tree cut by Triton sees daylight. Photo: Triton Logging, Inc.