WaveRunners help The Watershed Institute protect and preserve Kansas waterways

stream consciousness

BY JACK PLATT AND FRANK AUSTENFELD

Photography by Jack Platt

A unique partnership between Yamaha and a Kansas environmental assessment agency is helping to protect and preserve The Sunflower State's waterways for generations to enjoy.

The Watershed Institute (www.t-w-i.net) of Overland Park, Kan., uses Yamaha WaveRunners to their fullest potential in their work on watershed assessment and education. The ability to rapidly access hard-to-reach areas of lakes and streams on these PWC is crucial to TWI's research and evaluation work.

TWI is a non-profit corporation staffed by biologists, ecologists, fluvial geomorphologists and a water rights attorney with a background in public affairs. All of these specialists have extensive experience and form an environmental dream team, hand-picked by the godfather of watershed management, Dennis Haag.

"The Watershed Institute began as a concept for solving natural resource problems in an effective, natural manner, by using an interdisciplinary group of natural resource professionals," Haag said.

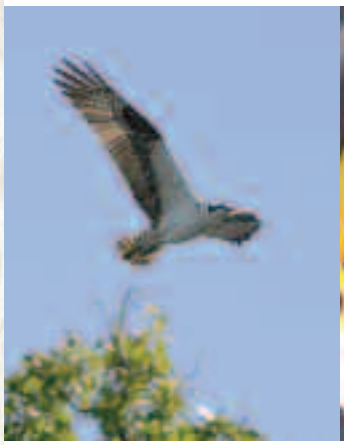
TWI performs many tasks within the area of watershed management. Fluvial geomorphology is one of these tasks, as well as riparian management, wetland design, stream restoration, ecological enhancement and urban watershed planning.

You may wonder what a fluvial geomorphologist does. Geomorphology is the study of landforms, including their origin and evolution, and the processes that shape them. Fluvial means "flowing," so in essence, it is the effect of flowing water on the landform. These scientists can not only predict but also recommend actions to change the energy of the water to alter its effect on the land.

Rivers and streams are not only conduits of water, but also of sediment. Contaminants attach to sediment. The water, as it flows over the channel bed, is able to mobilize sediment and transport it downstream until the current slows and the sediment is deposited, eventually filling or silting in impoundments. As rivers flow across the landscape, they generally increase in size, merging with other rivers. The network of rivers thus formed also functions as a watershed drainage system for that harmful sediment.

The core question that fluvial geomorphologists try to answer is, "Why do stream and watershed landscapes look the way they do, and how can we preserve and improve what we have?" So, they seek to understand landform history and dynamics, and predict and build future changes through a combination of field observation, physical experiment, mathematical calculations and numerical modeling.

These are a lot of 75-cent words, but basically they mean that TWI helps ensure that our waterways are monitored and evaluated with the goal of improved water quality and environmental responsibility. TMI also strives to implement improvements needed to control erosion, improve shore management, conserve habitat, and manage threatened and endangered species.



Yamaha partnered with TWI in 2005 by providing the non-profit organization with two FX Cruiser High Output WaveRunners. TWI uses them to tour and survey streams, rivers, lakes and wetland restoration projects in the Midwest and throughout the United States.

Equipped with Yamaha's low-emission, low-noise MR-1 four-stroke marine engines, the WaveRunners allow TWI staff to study sensitive areas not accessible to larger boats, more rapidly than they could with canoe or similar unpowered craft. The specialists can efficiently collect

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water samples, conduct plant and animal species population surveys and monitor habitats from the comfortable PWC.

"We were looking for a clean, quiet, low-impact way to survey large expanses of lake reservoir and river areas, and the Yamaha FX High Output WaveRunners meet and exceed all of our requirements," said Frank Austenfeld, an attorney and TWI Executive Director.

"You cannot fly from one end of a lake to the other at 55 to 65 mph in a canoe, plus with these WaveRunners, we can survey an entire lake end-to-end in a day," Austenfeld said. Another plus are the spacious dry-storage compartments that can safely store TWI's expensive equipment.

"A key part of Yamaha's corporate mission is to continually act responsibly toward the environment, and particularly our nation's waterways," said Mark Speaks, Yamaha Watercraft Group President. "TWI is on the front lines of natural resource management, and it is gratifying that we are able to assist them in carrying out their important work in a highly efficient manner."

To get an idea of how TWI functions, I tagged along for a typical day of inspecting shorelines at Clinton Reservoir outside Lawrence, Kan. The reservoir was built to provide flood control as well as to supply water for the city. We rendezvoused with three members of TWI's team in Lawrence. Austenfeld had two 2005 WaveRunners on a trailer, complete with TWI logos and totally tricked out with all the Yamaha gear you could want.

We launched in Clinton State Park, and I boarded Cruiser No. 1 with the long-haired executive director, who talked about TWI's mission the entire time with a passion that resonated. Scientists Chris Mammoliti and Phil Balch were aboard Cruiser No. 2. Mammoliti is an aquatic ecologist, and Balch is a nationally recognized stream restoration specialist. It was obvious they could name that sub-species of crawdad over there in half a pinch and that they looked at water with a different eye than most of us.

We followed the focused scientists straight across from the boat ramp to the opposite shore, where they pointed out an immediate erosion problem that seemed obvious once they showed it to me.

I could not get over how big the Yamahas were and how great they looked. They were as powerful as they were sleek: The four-stroke, 4-cylinder, 20-valve power plant had no problem getting this 800-plus pound craft to over 55 mph even with more than 400 pounds of passengers aboard. The quiet power tingles your spine when it fires up, and the control is amazing. I admit to being nervous beforehand about toting my camera and other equipment on a PWC. My nerves quickly calmed as I realized how stable these Yamahas are. Maneuverable and quiet, too.

We idled along the banks of Clinton Reservoir as the scientists chatted and pointed here and there at the bank, and recorded their findings in the RRAS unit. This handheld PDA/GPS/digital camera combination, manufactured by THI Riverworks out of Livingston, Mont., is state-of-the-art equipment used to record findings for later research and analysis. The RRAS costs more than $5,000 and is waterproof, of course—but it does not float—so they handle it with care.

Mammoliti and Balch entered a long string of data, and then they were on the throttle and quickly nudging 60 mph to cover the 10 miles to the other end of the impoundment. There they eased to a crawl and crept deep among the trees examining the twists and turns of a feeder creek.

The scientists pointed out problems such as shoreline erosion, explaining the differences between areas of the bank that were in good shape and those that were deteriorating, while pointing out possible fixes. Most of the areas of concern had little to no vegetation. The areas that were intact had a variety of flourishing trees, bushes and other plant life assisting in stabilization. They explained that land management practices, public recreation and Mother Nature herself all take a toll on these areas, causing erosion that impacts water quality and depth.

The speed, power and direction of current directly affect the condition of a streambank over time. When rain swells the feeder creeks, the increased volume of water cuts into unstable stream banks. The rushing water picks up sediment, which can contain contaminants. The suspended sediment and its cargo of contaminants affect water quality; as the sediment settles to the bottom of the reservoir, it hastens silting in the impoundment. Sediment is the vehicle that transports contaminants. TWI's mission is to find and stabilize weak streambanks and help preserve stable ones, to reduce the flow of sediment in our waterways.

After a long day being educated on the condition of the impoundment, we stood around the launch ramp revisiting the day's events. Schools of shad glistened like diamonds as they surfaced under the fall sunset. An osprey soaring high above the lake's shore not far from its nest was quickly spotted and earned a moment of silence with its beauty.

Farther down the lake, we could see a hugely impressive bald eagle nest engineered high in a tree. Not far away, we had spotted the eagle sitting atop some dead timber as we motored in. It remained in the treetop unalarmed by our presence as our purring four-stroke FX Cruisers quietly idled by. What a spectacular bird to see at that close range, and what a fitting way to end the day.

If you have ever read the book *The Lorax* by Dr. Seuss, considered by many as the best environmental awareness children's book in print, it would quickly come to mind when observing The Watershed Institute crew in action. Their conviction in doing their jobs is nothing less than impressive. They truly speak for the trees, water quality and the environment, and Yamaha helps them do it.