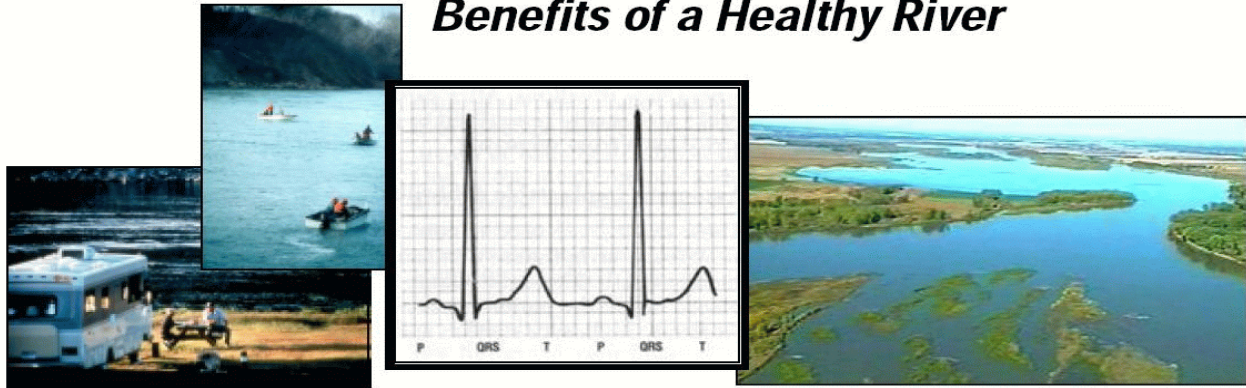




## The Heartbeat of a River: *Benefits of a Healthy River*



The hydrograph of a river is similar to an EKG (electrocardiogram) - it records the heartbeat of the river. A healthy hydrograph shows the river's pulse - a series of high and low flows. Currently, the Missouri River's hydrograph is artificially maintained as a flatline. For most of the river, water is held and released to create a steady flow all year long - not at all what a healthy hydrograph should look like.

The U.S. Fish & Wildlife Service's 2000 Biological Opinion is still in effect. The Corps of Engineers (Corps) has suggested a substitution for spring rise and summer low flows in their 2003 Biological Assessment, replacing the flow element of the Reasonable and Prudent Alternative (RPA), with accelerated habitat development and flow tests.

Most river ecologists agree that a combination of habitat formation and natural hydrology are required to sustain aquatic communities and riverine

function. However, the Corps is proposing to substitute the flows outlined in the 2000 Biological Opinion RPA with 1) accelerated habitat creation 2) accelerated existing habitat rehabilitation 3) conditioning flows for new sandbars below Gavins Point and 4) a series of flow tests at Gavins Point Dam Ft. Randall reach and Ft. Peck. Consistent with the adaptive management approach the Corps has agreed to use, the results of flow tests will be evaluated and meaningful results will drive changes to current operations after 3 years.

While the recommendations are aimed at protecting the three endangered species (least terns, piping plovers, and pallid sturgeon), there will be significant benefits for everyone - people and animals.

Here's how:

**Increased Recreational Opportunities:**  
*Fishing, Hunting, Birdwatching, and Canoeing:*

- The flow tests and accelerated habitat restoration efforts below Gavins Point Dam will begin to restore shallow/slow water areas which are extremely limited but extremely important to the species. These areas will also serve as staging grounds for fall flights of ducks, geese, and shorebirds. Tests will structure the degree of natural hydrograph required to maintain habitat restoration for improved sport fisheries and migratory songbird feeding and resting areas. Slow water conditions are ideal for canoeing. Flows for the future will be evaluated further.

- The intra-system reservoir unbalancing will create better nesting habitat for terns and plovers and will also significantly increase sportfish production in the reservoirs.

- Flow tests below Fort Peck in Montana will not only generate important information for pallid sturgeon reproduction, but also for other large native fish such as paddlefish.
- The recommended biological monitoring program on the Missouri will not only improve our understanding of the rarest of Missouri's native residents, but will also allow State game and fish agencies to better manage the sportfish resource.
- Creation of sandbars at an accelerated rate may be good for least terns and piping plovers, but the shallow, slow water found behind these sandbars produce some popular fishing spots for anglers.
- When habitat restoration and creation throughout the basin is government-sponsored, it typically means more areas are open to the public for recreation on and more opportunities for fish and wildlife viewing, hunting, or fishing exist.
- Enhanced hatchery operations to save pallid sturgeon may mean that someday this magnificent species will again be the trophy fish sought by some anglers, and the keystone reminder of the native fish community.
- Natural resource-based recreation on the river is good for local economies.

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