

## Ripple Effect #96

### **Hydrologists of the Past**

When space scientists study distant planets to ascertain the possibilities of life forms, they search first of all for signs of water. For while some forms of life can survive without oxygen, none can survive without water. Indeed, water comprises from 60 – 80 percent of every living cell – and all biological processes begin and end with H<sub>2</sub>O.

Our own planet is a superb specimen of this biological life source, with 70 percent of its surface covered with water. In addition, water-vapor clouds provide water to every continent in a constant cycling of the earth's waters through evaporation and precipitation.

The waters that have been going over and over through this recycling process are older, most of them, than the oldest fossils. What, we may ask, has kept that water clean – useable for us today?

The answer here in North America are the millions of early 'hydrologists' that populated the landscape. In woodlands, there were the estimated 200 million beavers whose relentless building of semi-porous dams slowed rivers so they wouldn't cut into their own banks. The beavers' work also created wetland meadows, which absorbed and further cleansed waters.

Assisting the beavers were the prairie 'hydrologists,' the herds of bison and elk that worked in tandem with wildfires to keep the prairie grasses healthy and ready to soak up seasonal rainfalls for gradual release.

Right beneath the prairie grasses were the third group of 'hydrologists.' Prairie dogs had the job of handling underground water storage. These groundwater experts, whole communities of them, dug vast networks of tunnels that would convey waters underground to be stored and cleansed before they were released into lakes or streams.

Today, with the role of these armies of woodland, prairie and underground hydrologists reduced if not eliminated, our waters have been left to human management and manipulation. And, as Alice Outwater explains in *Water: A Natural History*, our human propensity to clear land and "simplify" water pathways has left us in North America with dirty or "impaired" waters. The most recent US Geological Survey's ten-year assessment found multiple pesticides and elevated levels of phosphorus and nitrogen in almost all US streams and rivers outside wilderness areas. The rivers of the Red River Basin

are no exception and, in addition, are often impaired by low oxygen, sediment and bacteria.

From our ancient beginnings on the earth until today, waters are never replaced – only recycled. And, as explained, our ancient corps of ‘hydrologists’ are no longer on the job. This means that our own work of restoring our waters here in North America and the Red River Basin is cut out for us. In many cases, it is just beginning.

Until the next Ripple Effect,

The Red River Basin Commission (RRBC)

The RRBC is a grassroots organization that is a chartered not-for-profit corporation under the provisions of Manitoba, North Dakota, Minnesota, and South Dakota law. Our offices in Moorhead, MN and Winnipeg, MB can be reached at 218-291-0422 and 204-982-7254, or you can check out our website at [www.redriverbasincommission.org](http://www.redriverbasincommission.org).

