

## **The Condition of the Rainbow River and Our Drinking Water**

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The non-profit organization Rainbow River Conservation, Inc. continues to advocate for the protection of the Rainbow River and its environment by its various educational programs and projects. In order to maintain the beauty of the river and its habitat for wildlife the quantity and quality of water flow in the river must be maintained or improved. Frankly, the condition of the river is indicative of the quantity and quality of drinking water available in a large area surrounding the head springs of the river since they both draw their water from the same 700 square mile aquifer beneath the ground.

The quantity of water available for river flow and drinking water depends upon a water balance between rainfall, surface evaporation, and aquifer extractions for consumptive uses such as household, commercial and industrial uses as well as irrigation. If the consumptive uses exceed the aquifer replenishment via rainwater the water cycle is out of balance and the aquifer level drops. This leads to less spring flow to the river and the possibility of wells drying up. Excessive consumptive uses are largely the result of such practices as land irrigation, particularly in the agricultural industry.

The quality of water in the aquifer, and thus in the spring flow to the river and in our drinking water, is dependent upon many biological and chemical characteristics of the ground water. The major concern at present is the nitrate nitrogen level in the aquifer. The nitrate level in Rainbow Springs has rapidly risen to approximately 2.5 mg/liter. This is about 100 times historic levels and about seven times an acceptable level to prevent excessive algae growth in the Rainbow River. Such algae growth displaces normal aquatic vegetation that provides food sources and shelter for the aquatic life and, consequently, has an adverse effect on the whole wildlife cycle of the river and its surroundings. The U.S. Environmental Protection Agency has set a drinking water nitrate limit of 10 mg/liter, above which it is believed there is a danger to human health. Levels below that, in fact, are suspect to the health of the very young and the aged.

The high nitrate levels in our ground water are the result of organic sources such as human and animal waste and inorganic sources such as fertilizers. We need our local and state governments to mandate less fertilizer use and improved denitrification in disposal of human and animal waste. Otherwise, we will see the demise of our beautiful Rainbow River and we will be drinking nitrate polluted water. Let's hope for something better.