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Protecting water quality

It may seem strange that Utah's regulations protecting the quality of our state's waters do not contain a single definition of "clean water." This is because water may be clean enough for some purposes but too polluted for others. For example, stream water that contains disease-causing microorganisms may be too polluted to drink, even though fish in the stream are thriving in it.

We use the water in our lakes and streams in many different ways, and the quality of water necessary to protect those uses can vary considerably. Rather than try to reach a single "clean water" goal, the state protects the different benefits our waters provide. These are called *beneficial uses*.



Utah's surface waters provide Utah citizens with many benefits. We use our waters as a source of drinking water, for recreation, and for agriculture. In addition, our waters support many non-game fish, other aquatic organisms, and the many birds and other animals who rely on water-related habitats.

Understanding Your Watershed

Beneficial Use Designations in Utah (Partial List)

Class 1—Protected for drinking water

Class 2—Protected for recreation and aesthetics (swimming, boating)

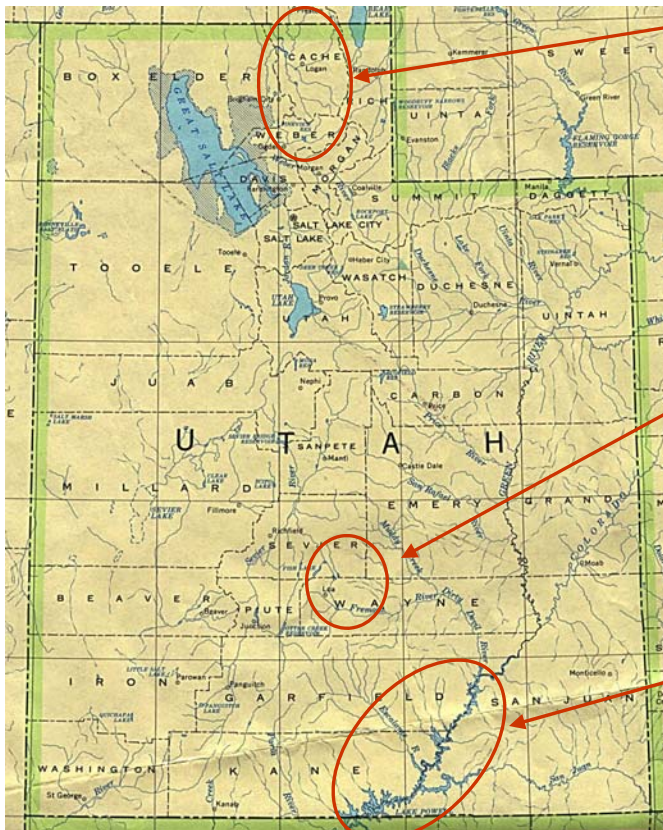
Class 3—Protected for aquatic wildlife (cold and warm water fisheries and non-game fish and other aquatic wildlife)

Class 4—Protected for agricultural uses (irrigation and stock watering)

Class 5—Protected for the Great Salt Lake only

Utah's Division of Water Quality has designated a set of beneficial uses for every lake, reservoir, and segment of stream or river in the state. Most water bodies provide multiple beneficial uses, which must all be protected. Below are just a few examples of the beneficial use designations of Utah's waters. A complete list of beneficial use designations can be found online at:

<http://www.rules.utah.gov/publicat/code/r317/r317-002.htm> or
<http://www.waterquality.utah.gov>



Lower Bear River :

Protected for:

- 2B: Secondary contact recreation
- 3B: Warm water fishery and other aquatic life
- 3D: Protection of waterfowl, shore birds, and other water oriented wildlife
- 4: Agricultural uses

Upper Fremont River :

Protected for:

- 1C: Drinking water source
- 2B: Secondary contact recreation
- 3A: Coldwater fishery and other aquatic life
- 4: Agricultural uses

Lake Powell:

Protected for:

- 1C: Drinking water source
- 2A: Primary contact recreation
- 2B: Secondary contact recreation
- 3B: Warm water fishery
- 4: Agricultural uses

Understanding Your Watershed

What are water quality standards?

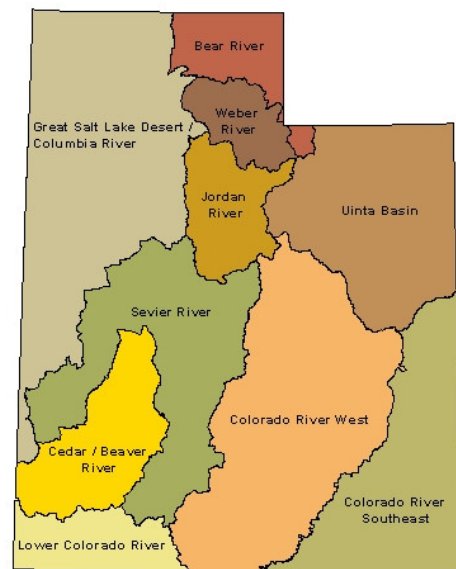
To protect our state's waters, water quality criteria have been established for all of the beneficial use designations. These are maximum or minimum concentrations of chemicals such as dissolved metals, or physical properties such as water temperature that can exist in a water body while still supporting the beneficial use. Specific criteria are set for each beneficial use.

The combination of beneficial use designations and specific water quality criteria are called Water Quality Standards. The state's standards also include several other measures called narrative standards that further protect waters from becoming polluted. The standards can be found online at: <http://www.rules.utah.gov/publicat/code/r317/r317-002.htm>.

When the Utah Division of Water Quality collects water samples or monitors the biological health of a stream, they compare the values they measure with specific standards set for each beneficial use. One of the responsibilities of this government agency is to identify any water bodies that are impaired, which means they are not supporting their beneficial uses.

Utah's watershed approach

Utah's Division of Water Quality uses a watershed approach to protect its waters. When the state determines that a stream or river is polluted, activities throughout the entire upstream watershed are evaluated to determine their possible contribution to the problem. This way all the sources of a given pollutant—both point (coming from a clear source) and non-point (coming from multiple or unclear sources)—are taken into consideration.



When a stream or other water body has been identified as impaired, the state works with its many partners to restore the water body. One approach is to develop a Total Maximum Daily Load (TMDL) for a water body. The TMDL is the maximum amount of pollutant allowed in a stream before the stream is impaired. The TMDL becomes a goal, and the agency and watershed groups work with land owners, businesses and other sources of the pollutants in the watershed to reduce their contributions and meet the TMDL standards.

Understanding Your Watershed

What other regulations affect water use?

Water quality standards are regulations that protect the quality of water. There are other laws that determine whether water can be removed from a water body (e.g., for irrigating or for cooling water at a power plant). These other laws are older than water quality regulations and were developed differently in different parts of the country depending on water availability.

Prior Appropriation

Most Western states, including Utah, follow the prior appropriation doctrine. When pioneers settled Utah they claimed rights to streams (or other water bodies). Under this doctrine, they were allowed to divert a specified amount of water from a public water source for their own use. The first person or family to claim rights had priority to use the water over those who followed. In dry years the first claimant, or first few claimants, may have been the only ones to be able to draw water. We call this doctrine, which still exists today, the “first in time, first in right” doctrine. Most Western states, including Utah, also apply the prior appropriation doctrine to ground water.

Riparian Doctrine

The riparian doctrine, or common law doctrine, gives a private land owner certain rights to water the borders or crosses of his/her property. These rights include use of water for household needs, livestock, recreation (including fishing), and power generation. This type of water law is found in Eastern states, where water is more plentiful.



For more information, contact USU Water Quality Extension at 435-797-2580, or visit our website at <http://extension.usu.edu/waterquality/>