



WATER QUALITY STANDARDS

Protecting and Managing West Virginia's Streams, Rivers, Lakes, and Wetlands

Clean water is essential to all living things. Water is life and our lives depend on how we protect the quality of our water.

WE NEED STANDARDS!



Water pollution changes water quality.

Water pollution means substances have built up in a river, lake, or stream to an extent that its water becomes unsuitable for its beneficial uses. Can you imagine not being able to fish or swim in a river because it is too dirty?

Water pollution can kill aquatic life and create unpleasant odors. It can also consist of bacteria, which could cause illness to people who come in contact with the water.

We must have standards to protect water quality!

Water quality is affected by the quantity and concentration of material discharged and the size of the receiving water body. A small quantity of a certain pollutant may cause little harm to an ocean. But the same amount pumped into a lake could be lethal to its entire population of fish.

Standards are measurements that describe the quality of water needed to support beneficial uses of our waterways.

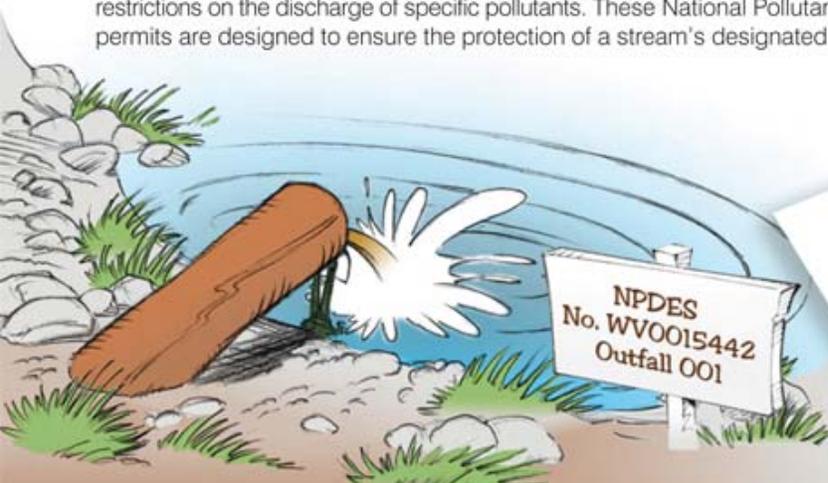
The Clean Water Act comes to the rescue!

Congress passed the Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), in 1972 to keep our waters clean enough for recreational uses, such as swimming and fishing.

The CWA required states to develop water quality standards to protect all water uses and to designate uses for each waterway. The legislation also mandated that industries and wastewater treatment plants obtain permits that set restrictions on the discharge of specific pollutants. These National Pollutant Discharge Elimination System (NPDES) permits are designed to ensure the protection of a stream's designated uses.

Water uses

- Aquatic life
- Boating
- Swimming
- Drinking
- Agriculture
- Fishing
- Navigation
- Industrial



All industrial and municipal facilities that discharge wastewater into the nation's waterways must have a NPDES permit.

west virginia **dep** department of environmental protection



FEDERAL WATER POLLUTION CONTROL ACT
 (33 U.S.C. 1251 et seq.)
 AN ACT To provide for water pollution control activities in the Public Health Service of the Federal Security Agency and in the Federal Works Agency, and for other purposes.
 Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,
TITLE I—RESEARCH AND RELATED PROGRAMS
SEC. 101. (a) The objective of this Act is to research and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that consistent with the provisions of this Act—
 (1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985; and
 (2) it is the national goal that wherever attainable, an interim quality standard shall be achieved by July 1, 1985; and
 (3) it is the national goal that the discharge of toxic pollutants be eliminated by 1985.



One river Multiple uses Different standards!

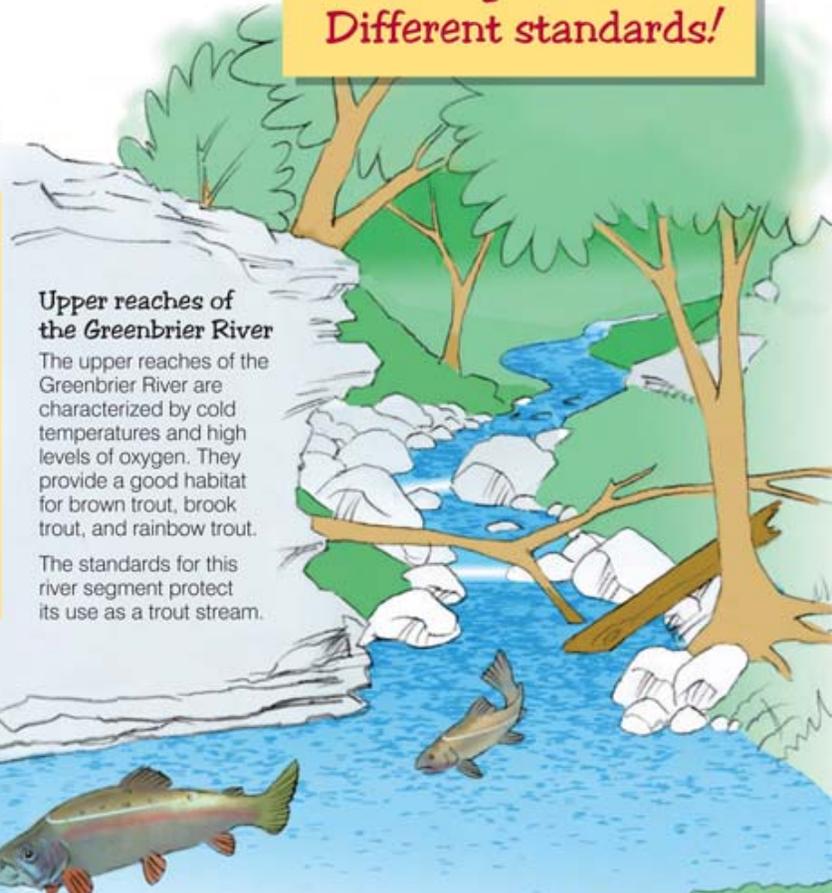
Water Quality Standards

Water quality standards are measurements the state sets to protect its waters from pollution. These standards are designed to make sure a body of water remains clean enough to support its designated uses. Some of the most common standards include:

- Dissolved Oxygen
- pH
- Temperature
- Ammonia
- Turbidity
- Bacteria (Fecal Coliform)
- Toxic metals (including mercury, cadmium, and lead)
- Organic chemicals. Organics are carbon-based manmade chemicals found in solvents, industrial chemicals, and agricultural pesticides.

WVDEP sets West Virginia Water Quality Standards

The West Virginia Department of Environmental Protection (DEP) is responsible for adopting water quality standards for the state's waters. Before the standards are put into effect, they must be approved by the State Legislature and the federal Environmental Protection Agency (EPA). Water quality standards must be reviewed every three years and revised as needed.



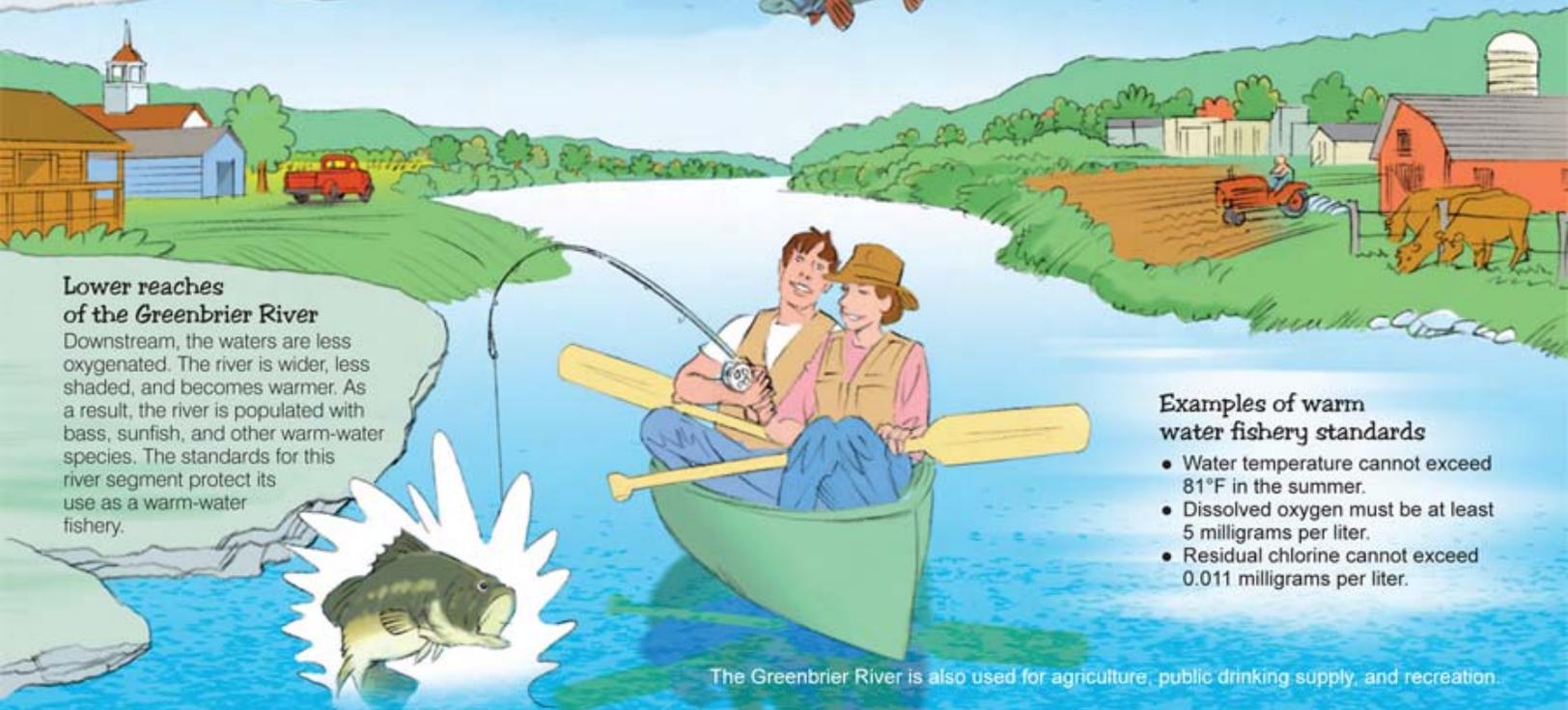
Upper reaches of the Greenbrier River

The upper reaches of the Greenbrier River are characterized by cold temperatures and high levels of oxygen. They provide a good habitat for brown trout, brook trout, and rainbow trout.

The standards for this river segment protect its use as a trout stream.

Examples of trout (cold) water fishery standards

- Water temperature cannot exceed 70°F in the summer.
- Dissolved Oxygen must be at least 6 milligrams per liter at all times.
- No chlorinated discharges are allowed in trout streams.



Lower reaches of the Greenbrier River

Downstream, the waters are less oxygenated. The river is wider, less shaded, and becomes warmer. As a result, the river is populated with bass, sunfish, and other warm-water species. The standards for this river segment protect its use as a warm-water fishery.

Examples of warm water fishery standards

- Water temperature cannot exceed 81°F in the summer.
- Dissolved oxygen must be at least 5 milligrams per liter.
- Residual chlorine cannot exceed 0.011 milligrams per liter.

The Greenbrier River is also used for agriculture, public drinking supply, and recreation.