



# TENNESSEE WILDLIFE RESOURCES AGENCY

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## Protecting Water Resources – Our Collective Responsibility

Balancing competing uses is a challenge that applies to much of what we do with time, family, careers, and finances. Competing uses for natural resources, land, air, water, and energy is often a factor in relationships between individuals, communities, states, and increasingly, among nations.

The recent extended period of drought in the southeast in general and Tennessee in particular has focused needed attention on the use, availability, and need to carefully manage and conserve our essential water resources.

Tennessee is a water rich state with a virtually unequalled diversity of stream types, ground water resources, wetlands, cave systems, and associated fish and aquatic life. Tennessee's major ecological regions such as the Blue Ridge Mountains, Tennessee River Ridge and Valley System, Cumberland Plateau, Central Basin, Highland Rim and Mississippi Alluvial Plain all offer differing opportunities and challenges to protect aquatic resources.

Conservation and protection of aquatic resources requires ongoing conversation and cooperation among competing uses including those providing municipal drinking water, those relying on ground water, agriculture, industry, boat manufacturers from yachts to kayaks, sport fishing interests, watershed organizations, forest managers, developers, greenway advocates, local/state/federal regulatory agencies, elected officials, educators, and many others.

Complex issues with lots of moving parts tend to generate terms and concepts as necessary to address emerging needs. Riparian conservation, stream buffer zones, watershed conservation, well-head protection, ground water intrusion, permeable surface development, green development, low flow protection, no-till farming, aquatic biodiversity, rain gardens, gray water re-use, non-point source pollution, thermal impact attenuation, are a few examples of concepts, science, and policy which are now integral to the larger issue of conservation of water resources. Each of these areas offers both business and water conservation opportunities.

**The State of Tennessee**

AN EQUAL OPPORTUNITY EMPLOYER

The term “Instream Flow” describes the emerging science and challenge of incorporating related competing uses into a “prescription” or management plan that provides multiple benefits while protecting streams both now and in the future. Water demands such as withdrawals for municipal water supply, agricultural withdrawals for livestock and crop irrigation, industrial uses including cooling water for energy production, ecological requirements for fish and aquatic life, assimilative capacity for both treated wastewater and non-point source runoff, and stream functions such as sediment transport and riparian zone integrity, must be incorporated into a comprehensive strategy to protect and conserve water resources. Aquatic conservation strategies may differ according to stream, watershed, and ecoregion.

The Tennessee Wildlife Resources Agency is a charter member and advocate for the Instream Flow Council (IFC), an international organization of fish and wildlife agencies dedicated to promoting “Instream Flow” related science and policy.

In Tennessee, approximately one million acres of prime farm and forest lands are converted to residential, commercial, and road development each decade. Resulting loss of stream function, water quality, and fish and aquatic life are compounded by attendant population increase and water demand. There is a tendency to treat water as an endless resource until a crisis such as drought occurs. Too often, the response is to initiate projects that simply allow continuation of the endless resource illusion. Focus on the essential elements of “Instream Flow” science and policy will help ensure that future generations benefit from Tennessee’s water resources.

Tennessee is fortunate to have tremendous effort and talent focused on protection and conservation of water resources. Federal agencies including the U.S. Army Corps of Engineers and the U.S. Geological Survey; state agencies such as the Tennessee Department of Environment and Conservation and the Tennessee Department of Agriculture; water resource centers at our major universities, including the University of Tennessee at Knoxville, Tennessee Technological University in Cookeville, Middle Tennessee State University in Murfreesboro, and Austin Peay State University in Clarksville; watershed organizations such as the Cumberland River Compact and the Harpeth River Watershed Associations; numerous lake advocate groups like the Boone Reservoir Association; conservation organizations including the Tennessee Clean Water Network in Knoxville, the Nature Conservancy of Tennessee, the Tennessee Scenic Rivers Association, and Trout

Unlimited; and utility associations such as the Memphis Utility District and the Duck River Agency; media production such as the Renaissance Center in Dickson; the U.S. Green Building Council; and international water conservation organizations such as the Izaak Walton League and the World Wildlife Fund, all offer expertise and projects to preserve our water resources..

By statute, Tennessee's Wildlife Code instructs TWRA to put first and foremost the well-being of fish and aquatic life, wildlife, and their respective habitats. In addition to conservation of Tennessee's marvelous aquatic resource diversity, there is a straight-forward fiscal reason to work for the successful implementation of comprehensive Instream Flow policy. Sport fish and boating, including paddle sports, bring in excess of three billion dollars per year in economic activity into Tennessee. People come from other states and countries to fish for trout, smallmouth bass, rockfish, and muskie, in Tennessee waters. Sport fishing brings in millions of dollars in tax revenue, employs hundreds of Tennesseans, and is a vibrant activity regardless of fluctuations in the national economy.

Successful conservation of Tennessee's water resources requires our best collective effort. No matter your interest in water, be it farming, building, politics, fishing, gardening, boating, or the most basic use, drinking, there is an opportunity to participate in this essential effort. TWRA is dedicated to working with our partners in aquatic resource protection to ensure that the science of "Instream Flow" is incorporated into our conservation strategy. For more information, please visit the websites for listed organizations and agencies.

\* This article is a collective effort between members of the Instream Flow Committee. These members consist of the TWRA, USGS, TDEC-WPC, TDEC Water Supply, TNC, HRWA, SRWA, CRC, and ACOE.