

# Making a Difference

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## *Through Environmental Stewardship*

### Situation

**E**nvironmental stewardship means using natural resources wisely. These resources include the physical, chemical and biological capabilities of natural systems, such as the ability to break down and assimilate wastes. Stewardship protects and improves the quality of our environment.

Environmental quality affects every Tennessean. We enjoy successes in protecting and improving the environment, but we continue to be concerned about the water we drink, the air we breathe and the impacts of what we throw away.

Many people need a better understanding of the facts about environmental issues and sounder information about what we can do to care for our environment.

### Goals

The goals of Extension's **Environmental Stewardship Priority Team** programs are to help Tennesseans:

- become better informed about environmental issues;

- evaluate conditions and practices affecting water quality in their homes and on their farms;
- identify ways to prevent or correct water quality problems;
- reduce the amount of wastes they throw away;
- manage wastes to protect the environment; and
- identify methods to protect and improve indoor air quality.

### Accomplishments and Results

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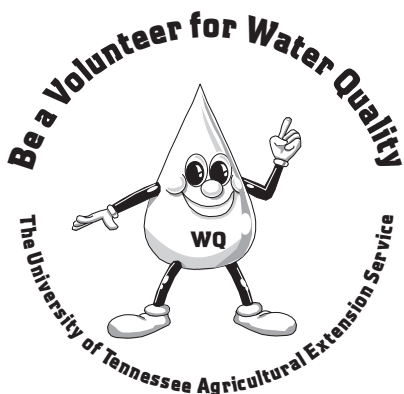
#### To Improve Awareness and Understanding

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- A quarterly environmental newsletter was sent to more than 4,000 Tennessee farms, homes and businesses. More than 160,000 copies have been distributed during the 10 years it has been published.
- Youth education was targeted in a Bedford County watershed project. Age-appropriate education featuring a character named Wally Water was presented through video, coloring



books, story-hour visits, demonstrations, 4-H programs, science fair projects, Earth Day events, stream surveys and science class workshops (Figure 1). More than 10,000 youth participated. Surveys showed 84 to 94 percent of respondents retained key concepts two to four years later. Also, 75 percent of the 4-H'ers reported having made changes in their lifestyles. Parts of this program are being used in other counties; a nearby utility district has duplicated Wally Water for its use.



**Figure 1. Wally Water, a cartoon character used in youth education programs.**

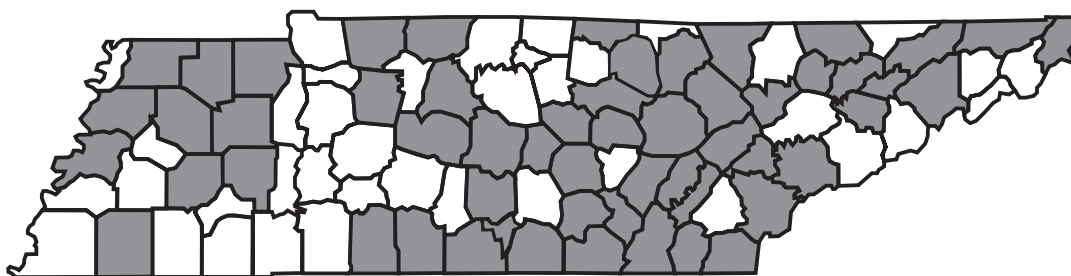
- With help from Extension, more than 300 high school students prepared for and competed in the Envirothon, an environmental Olympics that tests the students' knowledge, reasoning and teamwork skills to solve real-world problems.
- More than 2,500 students and teachers took part in environmental education at the W.P. Ridley 4-H Center in Columbia; 135 teachers participated in training programs at the center.

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## To Protect and Improve Water Quality

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- Extension presented programs in 50 counties on the quality of drinking water from private wells. As a result, participants had more than 750 private wells and springs tested and found that almost 400 were contaminated. Many well owners followed up with appropriate treatment.
- With Extension's help, more than 3,000 corn growers in 74 counties improved their nitrogen fertilizer management. These farmers grow about 70 percent of the state's corn crop.
- More than 900 private pesticide applicators and almost 1,500 commercial applicators were trained on proper pesticide use. Another 8,300 private applicators and 4,300 commercial applicators also were recertified. A key part of these educational programs is instruction on how to prevent water contamination.
- As a result of Extension's educational programing, more than 570 dairy farmers in 55 counties improved manure management (Figure 2). These farms have about 37 percent of the state's dairy cattle. These improvements are roughly equivalent to a city of 1,260,000 people (about twice the size of Memphis) improving its sewage treatment system to reduce or prevent water contamination.



**Figure 2. Dairy farmers in these 55 counties improved manure management.**

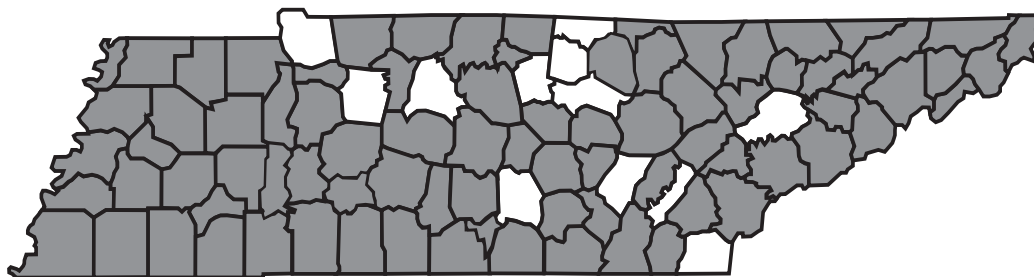
- More than 360 swine producers in 53 counties improved their animal waste management as a result of Extension educational programs (Figure 3). These farms have almost 50 percent of the state's hogs and pigs. These improvements are roughly equivalent to the effort made by a city of 526,000 people (more than three times the size of Knoxville) to upgrade its sewage treatment system to protect and improve water quality.
- Extension provided education on protecting sensitive areas such as wellheads and sinkholes, which can be direct channels to groundwater for pollutants. As a result, about 7,200 farmers took steps to protect these sensitive areas from

contamination by chemicals, fuel, oil and other pollutants.

- Extension modified the Farmstead Assessment System (Farm-A-Syst) for Tennessee. Farm-A-Syst is an educational program that helps farm operators assess their unique situations and identify ways to protect water quality. After using it, one Tennessee farmer wrote, "I would recommend Farm-A-Syst to my neighbors to let each operation assess its own problems early enough to address them before they're mandated." More than 2,500 Farm-A-Syst packages have been distributed to 83 county Extension offices for use by local farmers (Figure 4).



**Figure 3. Swine producers in 53 counties improved manure management.**



**Figure 4. Counties currently implementing the Farm-A-Syst program.**

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## To Improve Solid Waste Management

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- Extension provided education on recommended chemical use and disposal. Approximately 8,300 farms acted on these recommendations and improved management of these materials.
- Approximately 10,800 families took steps to improve their septic system management,

domestic waste disposal, selection of less toxic products and similar waste disposal practices as a result of Extension educational programs. These households throw away about 180,000 pounds of waste daily, based on state averages. An estimated 32,200 people (about the population of Hendersonville) live in these households and are directly involved in these changes and subsequent benefits.

- Extension worked with about 26,600 families in 40 counties to remove their names from

junk-mail mailing lists. This has reduced the average family's junk mail by about half a pound per month, a solid waste reduction of 159,600 pounds, or 79.8 tons, per year. This amount of trash would completely fill about 55 dumpsters.

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## To improve air quality

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- With the Department of Environment and Conservation, Extension promoted Radon Awareness Month. Radon is a naturally occurring gas produced by the breakdown of uranium and is commonly found in Tennessee. It's the second leading cause of lung cancer in the United States.

- Extension offered 1,500 radon test kits to families in cooperation with the American Lung Association, the state radon office and the Environmental Protection Agency (EPA). Approximately 14 percent of the homes tested so far have been retested because of high readings; several are undergoing mitigation.
- Extension prepared educational materials on indoor air quality, focusing on biological and chemical contaminants as well as radon.

The state's environment has improved because Tennesseans have responded to Extension educational programs. It's a good beginning, but much more needs to be done.

Contact your county Extension office for more information about these programs.

***Remember, environmental quality is everyone's responsibility.***



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The University of Tennessee Institute of Agriculture, U.S. Department of Agriculture,  
and county governments cooperating in furtherance of Acts of May 8 and June 30, 1914.  
Agricultural Extension Service  
Billy G. Hicks, Dean