Neighbors in a west Raleigh community are attracted by the sight of a group of people gathering around a Neuse Education Team (NET) member digging in Steve Wintermute’s backyard.

After a few minutes, Mitch Woodward’s shovel hits something, scraping along a hard surface with a grating sound.

What Woodward, Cooperative Extension area specialized agent in environmental education and NET member, has found is Wintermute’s septic tank. With Wintermute’s neighbors watching, Woodward and Wintermute work to expose the top of the tank and remove the lid. Woodward then uses a “Sludge Judge,” a long, hollow, tube-like pole device that determines if the tank needs to be pumped. It does.

“When I bought this house I had no idea that I’d have to pump the tank regularly; no one told me,” says Wintermute. His neighbors agree. In fact, after the demonstration, ten of them decided to have their septic tanks pumped, he says.

Woodward uses training sessions like these — he calls them “septic tank socials” — to get information on septic systems directly into the hands of homeowners.

“These demonstrations serve their purpose,” says Woodward. “Most homeowners don’t understand their septic systems or how to keep them functioning. By spending a little money every three-to-five years to pump the tank, they can prevent system failure, which is expensive to fix.”

Spreading the word to every homeowner with a septic system is a big task, however.

“The numbers tell the story,” says Woodward. “Wake County has more than 75,000 individual septic systems, with an additional 2,500 being installed each year.”

Woodward explains that septic systems are actually groundwater recycling systems. The septic tank retains solid waste and allows the wastewater to filter through the soil for treatment and eventual return to the water table. Trouble comes when the tank fills with solids and the solid waste flows into the drain field, plugging up drain lines and frequently causing waste water to pond on the ground’s surface.

When this occurs, he says, the best solution is to dig a new drain field adjacent to the old one.

Woodward says the most effective way to prevent septic system failure is to pump the tank periodically and to only flush biologically degradable products down the drain, never plastics or harsh chemicals such as paint thinner, pesticides, poisons, oils or paints.

To help get information into homeowners’ hands, the NET partners with Wake County’s Environmental Services Department and the Wake County Board of Realtors to deliver septic tank information directly via the “Septic Systems Owner’s Packet.” Wake County Realtors then deliver the packet — which includes a videotape or CD and a fact sheet on septic system maintenance, wells, water testing and water conservation — to homeowners when they purchase their house. The program

(See page two, Septic system project)
Research underway at two Neuse River Basin Farms may help producers hit pay dirt when it comes to improved nutrient management.

The study involves two sites, one in Franklin County and one in Wayne County. Scientists are trying to refine the connections between realistic yield expectations (RYE), actual yield, soil maps and soil test results.

“We’re trying to determine if farmers are getting the highest possible yields from their soils and current fertilizer programs,” says Bill Lord, area agent for the Neuse Education Team, who adds that from a water quality perspective, “our objective is to keep the fertilizer in the field, feeding the crops in the most efficient manner.”

The work includes using both a Geographic Information System (GIS) and a Global Positioning System (GPS) to gather a more complete and precise snapshot of each field, according to Dr. Deanna Osmond, associate professor of soil science at N.C. State University.

“GIS allows us to map yields and correlate the yields with soil fertility. GPS allows us to determine where we soil sampled,” Osmond says. “By taking lots of small grid samples and combining them into larger units, we can determine what kind of sampling gives us the most bang for the buck.”

Farmers and fertilizer dealers apply fertilizer uniformly to crop fields based on soil test results. Traditionally, soil tests have been very broad indicators of a particular field’s fertility status and thus have included much variability. By sampling the soil in a farmer’s field on a much smaller area – and using GPS to accurately measure the yield – researchers hope to directly relate crop yield to soil fertility and then hone in on the problem spots in the field where yield is low.

“When problem spots are identified using GPS and GIS, the farmer can sample those spots and correct PH or other fertility problems,” says Lord.

The bottom line, according to Osmond, is that this research may improve the way farmers test their soil, which is critical for nutrient management planning, and therefore improved water quality.

“This research is allowing us to really identify site-specific issues that affect a producer’s final crop and therefore their livelihood,” she says. “And as we improve crop yield through more efficient planning, more nutrients remain on the field and the Neuse is better protected.”

— Andy Fisher

Septic system project (from page one)

also has trained more than 100 Realtors in septic and well system management.

“What makes this effort different is that the information is put directly into the hands of the people who need it,” says Woodward. “That’s a big change from the past, when they would only seek out information after their septic system had failed.”

The information is also available on the Web at http://www.co.wake.nc.us/wwds (Wake County) or http://www5.bae.ncsu.edu/programs/extension/publicat/wqwm/septic.html (N.C. Cooperative Extension).

— Mitch Woodward
The N.C. General Assembly passed legislation in 1995 and 1996 requiring operators of animal waste management systems to obtain certification.

The law requires a certified operator for animal waste management systems that include a liquid animal waste management system serving more than 75 horses, 100 confined cattle, 250 swine, 1,000 sheep or 30,000 poultry.

The Animal Waste Management System Operators Certification Training Program provides those operators the basic understanding they need to efficiently operate and maintain animal waste management systems in an environmentally sound manner.

As of March 1, 236 courses have been approved by the Water Pollution Control Systems Operator Certification Commission for continuing education credit; approximately 867 classes have been conducted since the program’s inception.

More than 187 certification training sessions have been conducted in North Carolina, with 5,150 operators trained and more than 5,000 operators certified, says Mike Regans, a Neuse Education Team member.

Regans, a Cooperative Extension area specialized agent in environmental education, has been involved in the initial certification training of hundreds of animal waste management systems operators since 1996.

Approximately 520 certified animal waste management systems operators in the four-county area served by Regans completed the requirements necessary to maintain their certification in 2001.

“Tests given prior to and following animal waste management systems operator training consistently indicate an increase of 30 to 35 percent in the average grade of participants,” he says.

Regans, who was deeply involved in the development of the original certification training manual for operators, also is currently involved in the manual’s revision.

For certification, an operator must complete an approved 10-hour training course on the operation of animal waste management systems, pass an examination and pay the required fees.

To maintain certification, however, the operator must pay an annual renewal fee and complete six hours of approved training during each three-year period following initial certification.

Continuing education credits must be earned through satisfactory completion of approved operator training programs including, but not limited to seminars, courses, lectures, workshops or in-house training programs.

“The operator certification course only begins to teach producers the necessary skills for this vital part of their farm management,” says George Pettus, of the Environmental Management Department of Goldsboro Milling Co. and Goldsboro Hog Farms.

Regans’ workshops “fill the gap where that course left off and give the producer much-needed guidance,” he says.

Beth Buffington, of the state Division of Water Quality’s technical assistance and certification unit, says, “The Cooperative Extension Service continues to play a pivotal role in North Carolina’s animal waste management certification program. Cooperative Extension continues to do an outstanding job with both certification training and continuing education training for the animal waste management system operators of North Carolina. And new continuing education programs are steadily being developed.”

—Mike Regans

Mike Regans recently completed the requirements for Professional Animal Scientist certification within the American Registry of Professional Animal Scientists (ARPAS) with a specialization in Swine.

The ARPAS Registry’s standards enhance professional credibility and increase public confidence by providing certification of animal scientists through examination, continuing education and commitment to a code of ethics.