



News for Watershed Residents

#### Produced by UT Extension (423-745-2852)

## **Watershed Restoration Updates**

With great appreciation to participating landowners, UT Extension has completed a Watershed Restoration Plan for Pond Creek. This Plan describes the current and projected water quality status of Pond Creek, and proposes land management practices that will improve watershed quality, without jeopardizing agriculture production, or landowner rights.

TN Department of Agriculture in Nashville has officially approved this management plan, which means we can now apply for and receive substantial grant funds for on-the-ground Best Management Practices (BMPs). Past BMPs have resulted in noticeable improvements in local land and water quality in the past, and now much more can be done.





There is still more work to do, and YOU CAN make a difference.



Outline of Pond Creek Watershed

In this newsletter, some of the main recommendations from the Watershed Restoration Plan regarding local water quality are summarized.

A detailed look at land-use in the watershed was conducted using aerial photographs. From these photos, maps like the one to the left were produced and estimates of the sources of sediments and bacteria in the creek could be made.

By targeting specific areas and land practices within the watershed, available federal and state costsharing funds can be used more efficiently to address known or potential pollution problems and protect water quality. Maps of Pond Creek were produced to estimate the area under different types of land-uses in the watershed and how they might be contributing to water pollution.



- It is estimated that agriculture (cropland, pasture and livestock) contributes over 70% of annual Nitrogen loads, and nearly 80% of sediment loads.
- Soil loss for all of Pond Creek watershed is estimated at 43,253 tons/yr, or 1.8 tons/acre/year, primarily stemming from overgrazed pasture lands.
- Although cropland covers only 7% of the watershed, this land cover contributes nearly 26% of all soil loss, with 49% of this value from lowresidue crops.
- Water quality sampling, site-visits, and bacteria tracking suggest that bacteria sources stem from both livestock and human sources.



#### **Sediment and Soil Loss**

Poor and overgrazed pastures are the main causes of soil loss, soil nitrogen and soil phosphorus. Low residue croplands such as corn silage or plowed fields, and eroding streambanks are also significant sources of soil loss.

To reduce soil loss and erosion:

- Improve poor pastures through correct fertilization and herbicides
  - Increase grass buffers along streambanks
  - Practice minimal tillage, or no-till
  - Improve grazing practices (stop over-grazing)
  - Reduce the area of livestock loafing areas

### **Bacteria sources and fixes**

As bacteria is a listed source of impairment for Pond Creek, estimates of bacteria sources were made, with livestock being a major source.

Source	Population estimate	Waste production (tons/year)	% of total waste
Humans	4,379	5,595	8
Dairy cattle			
Milk & dry cows	1,575	26,723	41
Heifers & calves	960	11,213	17
Beef cattle	1,960	21,462	33
Wildlife	308	650	1

To reduce bacteria in the creek:

- Decrease areas where livestock enter the stream
- Repair streambanks at livestock watering sites
  - Repair and install manure holding facilities
- Repair failing septic systems



### **Money, Money**

Anticipated costs for this restoration initiative are projected at \$1,175,000 over 10 years, with nearly 100% of this budget for on-the-ground BMP implementation and installation. Through successful establishment of these BMPs, total volumes of soil loss (erosion), nitrogen, and bacteria will be reduced to the point of removing Pond Creek from Tennessee's list of impaired waters!

Grant funds are currently available to implement land BMPs or projects that will improve local water quality. If you are ready to improve your pasture, feeding area, watering sites, or heavy-use areas, or if you just want some weedcontrol or grass seed, call Lena Beth at 423-745-2852.

Three recently completed projects that will help water quality include: a septic upgrade at the local KOA, with financial help from TDA; an animal waste system installation at Jim Watson's farm with help from NRCS, and another waste system installation at Robert Watson's farm.

# **2007 Calendars**



With support from the US Environmental Protection Agency, the Tennessee Department of Agriculture, Tennessee Valley Authority and UT-Extension, a new 2007 calendar has been produced highlighting many best management practices applied within the Pond Creek Watershed. Each month introduces a different practice that helps landowners and local water quality.

To receive a copy of this fun and informative resource, please contact Lena Beth.





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