

Watershed Action Team

Environmental Water Restoration Quarterly

Carroll County Department of Planning/Bureau of Resource Management

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Forest Conservation... Through Forest Banking



In 1992, Carroll County adopted the State Mandated Forest Conservation Code to offset development-related forest loss. Stringent requirements, applicable to all categories of development, were designed to control forest loss and ultimately increase forest acreage in the county.

Carroll County's code allows property owners the opportunity to participate

in a **forest banking program**. While being the first local jurisdiction to propose and develop the use of forest banks, this program has provided an alternative for addressing forest conservation obligations. Forest banking is a conservation tool that involves the relinquishment of development rights by a landowner on newly planted forest, which generates mitigation credits that can be exchanged for a payment. (1) Developers responsible for replacing forest cleared as a result of a development project, purchase credits from private forest bank sites to meet their forest conservation obligation.

The success of this program can be measured in many ways. Hundreds of acres of forest in Carroll County have been restored, at the same time creating economic opportunities for landowners. Benefits of the Forest Conservation Banking Program are:

- ▶ Helps maintain overall forest cover in the county
- ▶ Reinforces Carroll County's no-net-loss of forest approach

- ▶ Allows flexibility for landowners and developers when complying with the Forest Conservation Code

- ▶ Provides permanent easements; protecting and preserving Carroll County's sensitive areas

- ▶ Represents an excellent tool for forest management

Property owners must be aware from the onset that banking is not for everyone; there are responsibilities involved with banking property for which only the property owner is responsible. Easements in perpetuity over the area to be planted are required on all lands banked. Meaning, the area planted representing the "tree bank" must be maintained in forest, forever. The use of this area is restricted to passive recreation, approved silviculture, and future timber harvesting.

When determining an area on a property for forest bank; consideration must be given to the criteria established in the Forest Conservation Code. Priority areas are as follows:

- 1) **Establish/enhance forest buffers adjacent to streams.**
- 2) **Establish/increase existing forested corridors to connect existing forests within and/or adjacent to the site to facilitate wildlife movement.**
- 3) **Establish/enhance forest buffers adjacent to critical habitats.**
- 4) **Establish plantings to stabilize slopes of 25% grade or better.**
- 5) **Establish buffers between differing land uses.**

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6) Establish forest areas adjacent to existing forests.


Once you have selected an area on your property which meets the criteria of the Code, flag the area and contact the Bureau of Resource Management at (410) 386-2210 to schedule a field meeting with staff. A formal application must be filed with the Bureau listing pertinent information on the property and identifying the location of the bank site for review and approval.


Upon approval of the site by the Bureau, the property owner may proceed through the process by submitting a Bank Establishment Plan (BEP) for review and approval. A BEP outlines the species of trees (native species) to be planted, quantity of trees to be planted, and the maintenance schedule to insure survivability. After the BEP has been approved, the landowner may plant the area with the approved tree species.

Additionally, the property owner may choose to allow the property to grow in trees through natural regeneration. Be aware however, natural regeneration is discouraged due to the excessive competition which invasive species such as Honeysuckle and Multiflora Rose provide. While initially inexpensive, natural regeneration areas will take many more years to reach a point where the County will accept these areas as banks, since additional control of invasive plants may be required to qualify as an acceptable bank area.

Certification of a bank site by the County and recordation of the easement of the bank site area is necessary prior to sale of bank credits. The three (3) ways a bank site qualifies for certification are:

 **A registered forester provides assurance to the County that the area allowed to naturally regenerate meets the definition of a forest pursuant to the forest code; or**

 **The maintenance period for an area to be planted has been completed with a survival rate consistent with the requirements of the Carroll County Forest Conservation Technical Manual; or**

 **A suitable guaranty for an area to be planted has been provided pursuant to the Forest Conservation Code; Chapter 115-12 of the Carroll County Code of Public Local Laws and Ordinances.**

Periodically the Bureau will inspect the bank site to ensure that the area is properly maintained in a forest condition.

Any timber harvest proposed for the bank site area must be approved by the Bureau through the permitting process.

The results of this program speak for themselves by the recent article published in The Conservation Fund's book entitled "A Sustainable Chesapeake: Better Models for Conservation". An article featured in the book entitled "Effective Forest Banking – Forest Conservation in Carroll County, Maryland" gives a detailed account of the success of the program. If you have any questions or are interested in participating in this program, please contact Jon Bowman, Forest Conservation Specialist with the Bureau of Resource Management at (410) 386-2210.

(1) Sullivan, J., G.S. Amacher, and S. Chapman, 2005. Forest banking and forest landowners forgoing management rights for guaranteed financial returns. *Forest Policy and Economics*. 7(3):381-392.

By: Gale Engles, Bureau Chief Resource Management

Carroll County Flood Insurance Rate Map revision update



Carroll County's current Flood Insurance Rate Map (FIRM) became effective August 1, 1978. In terms of accuracy, due to substandard base data (hydrology, topography, etc.), these maps leave much to be desired. This is a major

issue considering data accuracy is the most important aspect of any FIRM. FIRMs are used by communities for planning and regulatory purposes, and by the insurance industry for setting insurance policy rates on specific properties and structures.

On one hand, the current FIRM may depict a home as being outside the floodplain, when in reality it is in. This gives the homeowner a false sense of security. He or she may feel that a flood insurance policy is not necessary. However, should their home flood the resultant damages are not covered by ordinary homeowners' insurance policies. Only a flood insurance policy will cover flood damage.

Likewise, the current FIRM may incorrectly depict a home within the floodplain when it is out. Flood insurance premiums are based on the elevation of the 1-percent-

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Groundwater Level Seasonal Update

The Carroll County Government Bureau of Resource Management (BRM) conducts a groundwater monitoring program to understand how groundwater withdrawals, land use, seasonal

weather, and changes in climate affect the groundwater resources in the county. This effort is completed throughout the county on a bi-weekly basis and the data record spans over 20 years for some of the wells.

County staff visit approximately 45 monitoring wells and measure the depth to groundwater using an electronic sounding device. Data is input to a spreadsheet application and then plotted against time to discern trends in water depth.

In Carroll County groundwater is recharged by a portion of the total precipitation that infiltrates into the ground through the soil column. Precipitation data collected by Carroll County Government according to National Weather Service standards is added to the graphs to provide context for precipitation trends.

During dry periods, such as the past several months, groundwater availability becomes a concern for farmers, homeowners, and anyone else who relies on the resource. After an above average winter period in terms of precipitation, the county has experienced a few dry months. **Figure 1** shows the daily precipitation recorded in Westminster year to date. The months of April through August have all received less precipitation than the 30 year average. Only 0.70 inches of precipitation was received in June while the 30 year average for the month is 3.9 inches. As of September 10th, the last measurable precipitation fell on August 23rd, a period of 18 days.

The BRM examined well level trends in a number of wells to determine if the seasonal lack of precipitation was impacting groundwater levels. Included in this article is a brief discussion of well level trends in an observation well in Manchester that is not influenced by groundwater withdrawals for water supply and an observation well in the Freedom District that is located very close to a community production well.

The Charmil observation well is located on the southern side of the town of Manchester at the top of a watershed that currently does not have any pumping wells. However, the Route 30 well was appropriated at 35,000 gallons

per day (gpd) through the beginning of this data record and was taken off-line in 2003. The trend in water level for this well is shown in **Figure 2**. This well shows a 5.5 foot decline since March, but this decline is not extraordinary when compared to historic seasonal response. This well level was equaled in autumn of the following years 2008, 2006, 1999, 1994, 1993, and 1992. Further, the current water depth was exceeded in autumn 2007, parts of 2002 and 2001 during the extended drought, autumn of 1998 and 1991.

Figure 1: Carroll County Monthly Precipitation Summary

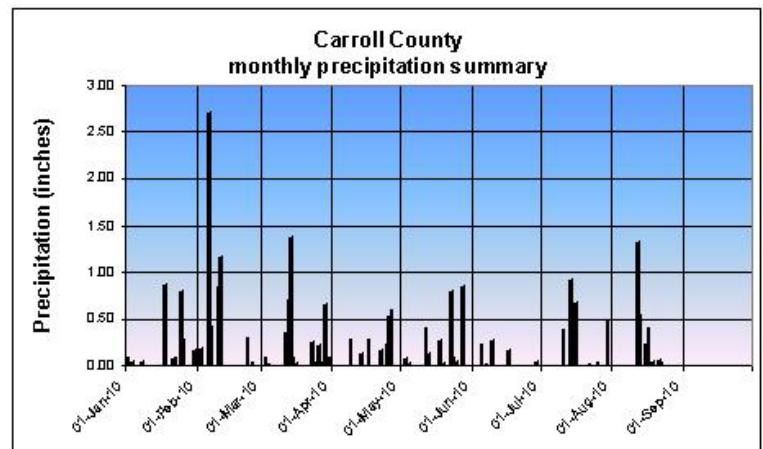
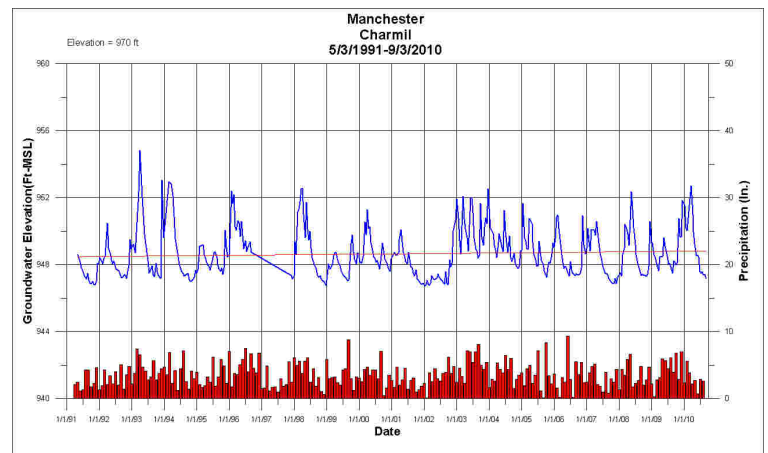


Figure 2: Water Level Trend Charmil Well, Manchester, MD



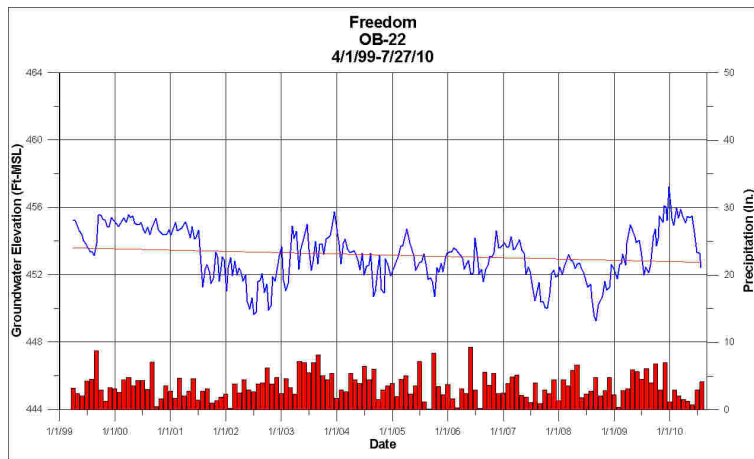
Well OB22 is located near the Springfield State Hospital Center in the Freedom Water District. This well has been monitored since 1999 to assess impacts from a nearby production well in the watershed **Figure 3**.

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GROUND WATER *continued from page 3*

In January 2010, the groundwater elevation in well OB22 was at its highest level on record since monitoring began. This well has lost 5 feet of water since January 2010, however, this water level is still greater than autumn readings in this well for every year since 2000 when pumping began, except for the wet years of 2009 and 2003. In fact the well level currently is only one foot less than the pre-production well autumn resting water level, indicating very little impact to groundwater as a result of production well activities.

Figure 3: Water Level Trend Well OB22, Freedom District



Other wells monitored throughout the county show a similar trend. Although water levels are impacted by lack of recharge in the form of precipitation, water levels have often been recorded at or below the levels seen during the late summer of 2010. Historically, extended dry periods are broken during the change of seasons which can often provide changes in climatic patterns that influence precipitation patterns. The BRM will continue to monitor well levels regardless of the weather and is anticipating providing this data over the internet in the near future.

Please feel free to contact the BRM Water Resources Division at 410-386-2321 if you have any questions about this article.

by Hugh Murphy
Water Resources Supervisor



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FLOOD *continued from page 2*

annual chance (100-year) flood versus the lowest adjacent grade of the structure. Flood insurance premiums for structures that are incorrectly shown within the floodplain will be higher than the true actuarial risk would require.

The preliminary maps were submitted by FEMA to the County for preliminary review on June 4, 2010. The County provided FEMA with comments relating to the preliminary maps at a meeting held July 7, 2010. This meeting included representatives from the County, FEMA, the incorporated communities within the County, FEMA, the United States Army Corps of Engineers and the Maryland Department of the Environment. The new Digital Flood Insurance Rate Maps, Flood Insurance Study and National Flood Insurance Program were discussed at this meeting.

The next step in the process is the 90-day appeal period. The community (citizens, engineers, surveyors, etc.) will have 90 days from the start of the appeal period to submit appeals through the County to FEMA. FEMA has yet to determine when the 90-day appeal period will begin. It is highly recommended that citizens take an active role in determining how the new maps may affect their properties. All appeals must be submitted within the 90-day period. Citizens are encouraged to attend a community meeting (to be announced) where the maps will be on hand, or set up a time to come see the maps at the Bureau of Resource Management in Room 209 of the County Office Building. A website has been created where citizens can look up their properties relative to the revised floodplain delineation. The website link is:

http://ccgovernment.carr.org/ccg/MapServer4/GIS/webpage/FIRM_Coverpage.html

If you have any questions relating to the new firms, please contact Jason Stick, Flood Plain Specialist at 410-386-2844.