

# **RIVANNA RIVER STEWARD 2014 END OF YEAR REPORT**



**River Stewards:** Dan Triman and Justin Altice

## **Overall Summary**

The Rivanna River Steward program was launched in the Spring of 2014, with 2 Stewards, 2 boats and a significant amount of enthusiasm. The Stewards have just completed the first program year and a summary of the Steward's Reports, findings and accomplishments are outlined below. In addition, the Stewards have set forth their future plans within the local community.

## **About the Rivanna**

The Rivanna Conservation Society (RCS) is celebrating its 25th Anniversary and as a part of that Anniversary the organization intends to host its 3rd Annual Rivanna River Makeover, to build an education center at its Scheier Natural Area in Fluvanna County and to upgrade and complete the Water Trail and Kiosk system at boat launches along the Rivanna. This will be in addition to the biennial Rivanna River Sojourn, the work of the River Stewards, and the River Guardians Volunteer Corps.

The Rivanna River is often referred to as "Mr. Jefferson's River" because Thomas Jefferson grew up on the shores of the Rivanna and later built his Monticello home along its banks. Sharing Mr. Jefferson's appreciation for this historic river, a group of Fluvanna County residents established The Rivanna Conservation Society (RCS) in 1990.

The Rivanna was named to honor Queen Anne (1665-1714), and is a tributary of the James River, flowing ultimately into the Chesapeake Bay. The Rivanna River is a 42.1-mile-long river originating in the Blue Ridge Mountains (North Fork in Greene County and South Fork in Albemarle County).

The Rivanna watershed is 766 square miles and 100,000+ people live in the watershed. Approximately 65% of the watershed is forested and is considered to be some of the healthiest small Piedmont streams in the mid-Atlantic region. Based on land use, StreamWatch estimates that 70% of Rivanna streams failed the Virginia aquatic health standard. However, only 5% to 10% of streams are severely degraded.

The Rivanna River Watershed is polluted primarily by:

- Pathogens (E. coli)
- Sediment caused by erosion from development and rainwater runoff

## **Paddling Season**

From May 2014 through November 2014, the 2 River Stewards, Dan Triman and Justin Altice, paddled the river at least once a week to monitor the Rivanna and report on their findings. With winter approaching, the Stewards will be on hiatus until the spring of 2015.

## **The Goal**

The goal of the River Steward program is to give The Rivanna Conservation Society (RCS) a presence on the river, to document pollution sources, and to share information about the native flora and fauna. In just the first few months the Stewards have been able to reach a wide audience as well as document a significant amount of information about the river and water conditions throughout the Rivanna watershed. RCS is delighted by all that has been accomplished by the River Stewards and we expect that this program will be continually improving as experience is gained, community awareness of the program grows, and with greater on the water participation of the RCS River Guardians Corps.

Of great inspiration to the Stewards and to the Guardians is the natural beauty of the River which cannot be fully appreciated unless one is on the Rivanna River. Over time our goal is to have more members of the community on the River so they too can experience the River. The Stewards have a personal goal which is to spread the word about what a hidden gem the Rivanna is and to inspire people to enjoy the river, nature and the great outdoors.

## **Observations**

The River changes significantly in width, depth, and rapids, as well as the surrounding landscape nearby, depending on which section the Stewards are paddling. The characteristics of the Rivanna change as a result of the urban, rural and x-urban areas that the river passes through.

General observations are that the Rivanna is, for the most part, healthy. This is due in large measure to the minimal amount of industrial activity in our area and the large number of forested acres. The Stewards did not notice significant odors, or significant water discolorations (other than the brown color caused by sediment after a storm). For the most part, the Stewards did not identify significant points along the River where noticeable pollution was being discharged into the River from pipe outfalls; one exception to this fact is a pipe outfall near Rio Mills that discharges runoff from the 29 corridor.

Water levels were generally good during the Spring. In the Summer and early Fall the Stewards experienced little rainfall, and the River levels dropped significantly. Even so, the Stewards were able to paddle at least some portion of the River throughout the year. The Stewards did experience several weeks when their paddling efforts were more difficult, with kayaks dragging on the bottom and the river rocks sticking out above the water making it difficult to maneuver.

### River Areas Covered

This year, combining all of the Stewards weekly river paddle trips the Stewards were able to monitor the Rivanna all the way from Reas Ford Rd at the northern end down to Palmyra at the southern end. The section from Reas Ford Rd down to Earlysville Rd is the South Fork of the Rivanna and is above the Reservoir. Then below the Reservoir and Dam, the Stewards paddled the entire Rivanna from Rio Mills Rd to Palmyra.

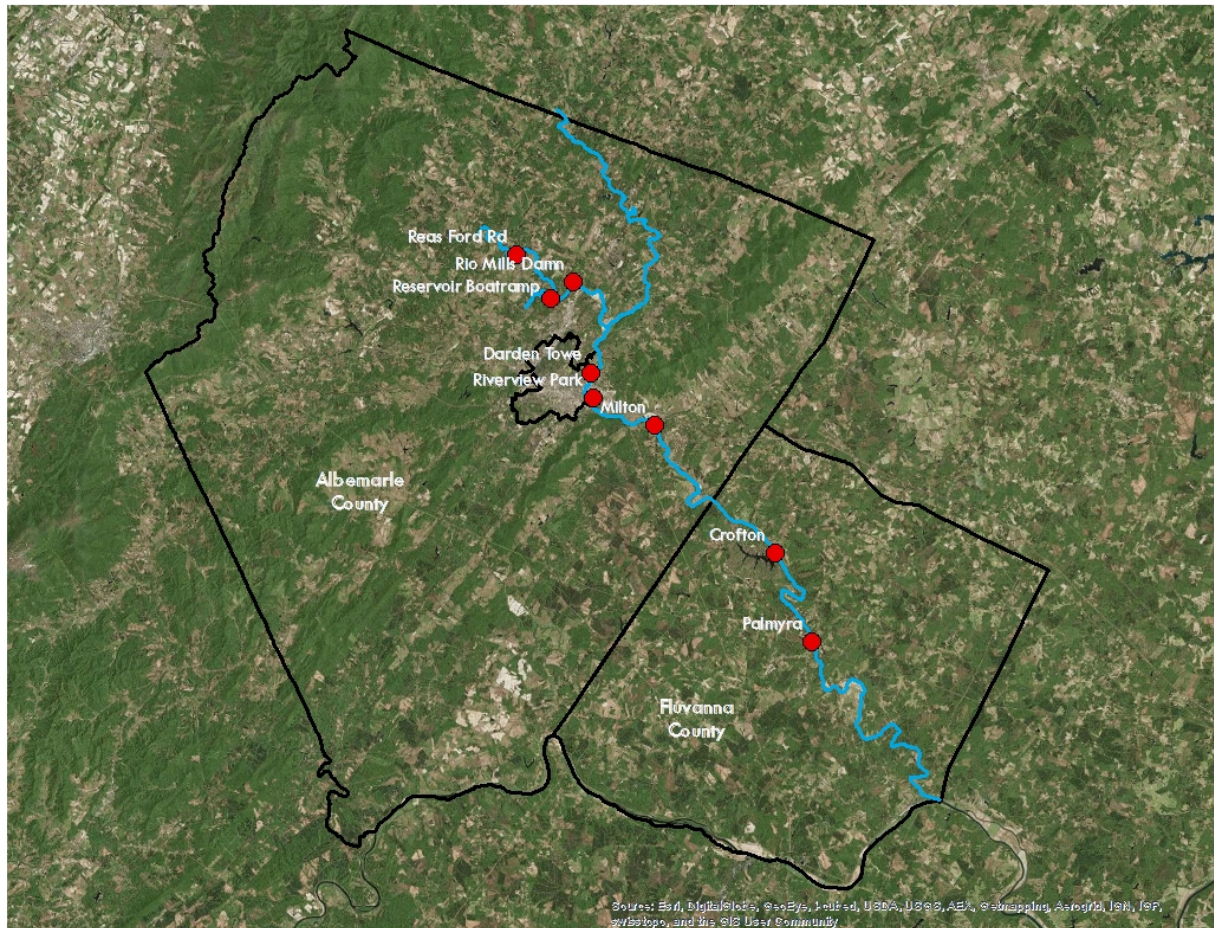
In the Spring, the Stewards will extend the areas of the River covered going further upstream and down. Upstream on the South Fork above Reas Ford Rd the Stewards will paddle and monitor as far as water levels will allow (e.g, another one to two miles upstream) and downstream all the way to Columbia at Point of Fork, where the Rivanna meets the James River. This would add another 16 miles of the Rivanna to our monitoring scope.

The table below shows a summary of the sections of the Rivanna paddled by the Stewards and dates each section was paddled. The length of each section of the river is also provided, and if you total up all of the mileage from the paddle trips this year, the Stewards monitored approximately 131.5 river miles in all.

| River Section | Starting Point             | Ending Point               | Section Mileage | Dates Paddled   |
|---------------|----------------------------|----------------------------|-----------------|---|
| Section 1     | Reas Ford Rd (South Fork)  | Earlysville Rd (Reservoir) | 3.0             | 10/24/14, 11/12/14  |
| Section 2     | Earlysville Rd (Reservoir) | Rio Mills Dam (Reservoir)  | 1.5             | 10/5/2014   |
| Section 3     | Rio Mills Dam (Reservoir)  | Darden Towe Park           | 6.0             | 6/15/14, 9/14/14  |
| Section 4     | Darden Towe Park           | Riverview Park             | 2.0             | 5/21/14, 5/30/14, 6/20/14, 7/9/14, 7/16/14, 8/8/14, 8/26/14, 10/08/14, 10/28/14 |
| Section 5     | Riverview Park             | Milton Shadwell            | 4.3             | 5/30/14, 7/9/14, 8/8/14, 9/3/14, 11/04/14                                       |
| Section 6     | Milton Shadwell            | Crofton                    | 10.0            | 6/7/14, 7/2/14, 10/19/14  |
| Section 7     | Crofton                    | Palmyra                    | 6.5             | 6/6/14, 6/25/14, 8/13/14, 8/20/14, 9/24/14                                      |

## Rivanna River Map

The map below provides a general context of where the Steward paddled this year, and where the boat access locations are along the river that were used this season.



## Chemical Water Testing Summary

Each time that the Stewards went out on the river for a paddle trip, they took a chemical water monitoring kit with them in order to record some chemical properties of the water. Below we have provided a summary of the chemical water testing data below for each paddle trip. Note that a few of the earlier Dissolved Oxygen (DO) readings may be a little low due to some faulty testing tablets we have since replaced.

| Date Tested | Physical Location Tested  | Air Temp (°F) | Water Temp (°C) | DO (ppm) | PH | Turbidity (JTU) |
|-------------|---|---------------|-----------------|----------|----|-----------------|
| 5/21/2014   | Pipe Outfall 0.2 Miles Past Free Bridge - River Left                  | 70            | 20              | 3        | 7  | 20              |
| 5/30/2014   | At I-64 Bridge - River Left (Near Woolen Mills)                       | 68            | 22              | 3        | 8  | 40              |
| 6/6/2014    | 2 Miles Past Crofton – Middle River                                   | 79            | 24              | 2        | 8  | 20              |
| 6/7/2014    | Sand Bar At Glenmore Country Club                                     | 82            | 28              | 3        | 8  | 10              |
| 6/15/2014   | Railroad Bridge (Between Rio Mills and Darden Towe)                   | 70            | 26              | 1        | 8  | 40              |
| 6/20/2014   | Under Power Lines Between Free Bridge and Riverview (At Sand Bank)    | 83            | 26              | 2        | 7  | 20              |
| 6/25/2014   | About 2.5 Miles Past Crofton - River Left (Where Stream Enters River) | 80            | 24              | 2        | 8  | 20              |
| 7/2/2014    | 3 Miles Before Crofton – River Middle                                 | 92            | 28              | 2        | 8  | 20              |
| 7/9/2014    | Just After I-64 Bridge - River Left (Near Woolen Mills)               | 85            | 26              | 1        | 7  | 40              |
| 7/16/2014   | Riverview Park - River Right  | 78            | 26              | 2        | 7  | 20              |
| 8/8/2014    | Just After I-64 Bridge - River Left (Near Woolen Mills)               | 75            | 24              | 1        | 7  | 0               |
| 8/13/2014   | Beach - River Left (N 37° 53.616' W 078° 27.522')                     | 82            | 24              | 2        | 8  | 20              |
| 8/20/2014   | Palmyra Boat Launch - River Right                                     | 85            | 26              | 2        | 8  | 40              |

| Date Tested | Physical Location Tested  | Air Temp (°F) | Water Temp (°C) | DO (ppm) | PH | Turbidity (JTU) |
|-------------|---|---------------|-----------------|----------|----|-----------------|
| 8/26/2014   | Under Power Lines Near Riverview Park – River Middle            | 82            | 26              | 2        | 8  | 60              |
| 9/3/2014    | Milton Boat Launch - River Left                                 | 87            | 30              | 2        | 8  | 30              |
| 9/14/2014   | Past 29 Bridge Near Rio Mills Dam - River Right                 | 68            | 24              | 3        | 7  | 60              |
| 9/24/2014   | Near Camp Friendship - River Left (N 37°52' W 78 °16')          | 64            | 18              | 5        | 8  | 10              |
| 10/5/2014   | At Rio Mills Dam - Middle of Reservoir                          | 62            | 20              | 4        | 6  | 30              |
| 10/8/2014   | Sand Bar - River Left (N 38°01' W 78°27')                       | 78            | 20              | 4        | 7  | 20              |
| 10/19/2014  | Crofton Boat Launch - River Left                                | 55            | 18              | 4        | 7  | 20              |
| 10/24/2014  | Near Island Across Green Meadows Lane - River Left (South Fork) | 70            | 16              | 4        | 8  | 50              |
| 10/28/2014  | Riverview Park - River Right                                    | 80            | 16              | 7        | 7  | 0               |
| 11/4/2014   | Just before Milton Bridge - River Right                         | 66            | 14              | 4        | 8  | 10              |
| 11/12/2014  | Boat launch at Woodlands Rd / Reservoir                         | 65            | 14              | 4        | 7  | 10              |

## Flora and Fauna

On virtually every Steward paddle, they encountered some form of wildlife – including small insects and bugs, birds and some large mammals. Interestingly, the Stewards noticed some of the same wildlife appearing in the same locations on multiple occasions, which implies that these animals live in specific areas and are finding these locations suitable for their needs. The most common wildlife observed were turtles, birds and fish.

During the paddles the Stewards observed the following:

- Birds  
Great Blue Herons, Bald Eagles, Ospreys, Wild Turkeys, Hawks, Crows, Geese, Ducks, Bluebirds, Robins, Cardinals, Kingfishers, and several other smaller birds.
- Insects and Bugs  
Spiders, Dragonflies, Damselflies, Bees, Wasps, Butterflies, Water Striders
- Reptiles and Amphibians  
Water Snakes, Copperhead Snakes, Frogs, Toads, Turtles
- Fish  
Long Nose Gar, Bass, Catfish, and several other smaller minnows
- Mammals  
Beaver, Otter, Deer, Squirrel, Bats

Below are some photos to highlight the wildlife and vegetation observed by the Stewards while paddling the Rivanna River. The amount and diversity of wildlife observed is a good sign that the Rivanna is fairly healthy and is providing sufficient habitat for the living organisms that depend on it to survive. In addition there is a wide diversity of trees and other plants growing in and around the Rivanna River, many of which are native species.

The RCS River Stewards are looking forward to being back on the water in the Spring to observe, document and share the beauty of the Rivanna River and its tributaries with local governments leaders, the RCS Board of Directors and members and the public at large.



## Fauna Photos



Water Snake Eating A Small Fish



Turtle Laying On A Log



Great Blue Heron



2 Geese Walking Along a River Bank



Dragonfly That Landed On Our Kayak



Deer at River Edge





Great Blue Heron Between Darden Towe and Riverview



Toad Hiding Next To A Log



Spider On One Of Our Kayaks



Turtle On A Log



Young Eagle In Flight



Eagle And Nest On Top Of Power Line Tower



## Flora Photos



Purple Flowers



Yellow Flowers



Lily pads Found Near Rio Mills



Underwater Vegetation Between Rio Mills and Darden Towe



Fall Foliage On South Fork Rivanna River



Queen Annes Lace

## **Partnerships and Community Outreach**

One of the most important aspects of the work that RCS is doing as part of the the River Steward program is to engage the general public in our efforts to maintain a healthy Rivanna Watershed, as well as partner with other groups and organizations to have a greater impact. While there were a couple of times the Stewards went out for a paddle trip on the Rivanna, and didn't come across any other people, most of the time, they found others enjoying the river and surrounding areas. They frequently came across people using the River for fishing, swimming, kayaking, canoeing, motor boating, and rowing. We also saw a lot of people hiking, or running along the Rivanna Trails that parallel the River.

In June of this year RCS was also fortunate to have NBC 29 do a news story about the River Steward program. A news crew met us at Darden Towe Park and interviewed the River Stewards, as well as an RCS Board member, about the Steward program. They also got some video coverage of the Stewards paddling in kayaks on the Rivanna. The news story ran both on the afternoon news and the nightly news in our local area, enabling the program to reach a large audience for the RCS.

The Stewards also continued RCS' relationship with Blue Ridge Mountain Sports (BRMS). On 2 occasions the Stewards went on paddle trips with staff from BRMS. The first was in August on a paddle from Darden Towe to Milton Shadwell with the Store Manager of the BRMS Charlottesville store. The intention of the trip was cleaning up as much trash as possible from that stretch of the river. In all about 7 bags of trash and 4 tires were removed from the river that day. The second paddle trip with BRMS was the annual Fall River Sojourn trip in mid-October. For this event BRMS provided the kayaks and a couple of their staff came on the paddle; approximately 13 members of the general public were led on a float from Milton to Crofton.

As part of the Steward program, RCS is also always working on building relationships with the River Guardians, the volunteers who monitor sections of the River for RCS. The Stewards assisted with several trainings for the River Guardians, as well as went out on several paddle trips with some of the River Guardians. The most notable of these were a couple of paddle trips between Crofton and Palmyra where two of the River Guardians helped the Stewards remove and dispose of 150 tires that were in the River. As part of this effort RCS also continued our relationship with Camp Friendship, located near Palmyra, as they let us use their boat launch to help us be more efficient in targeting the area where a lot of the tires were located.

RCS held a volunteer clean up event in partnership with the UVA Batten School where students and staff came out to Milton Shadwell and helped the Stewards clean up the kiosk, build a picnic table, repair the boat launch steps, and fill in potholes in the access road with bluestone that was donated by a local supplier.



The River Stewards have also done several presentations to community groups and the general public this year. One of the most notable was an RCS Third Thursday Brown Bag event at the Charlottesville Main Library in September.

### Partnerships and Community Outreach Photos



People Swimming At Riverview Park



People Fishing In The River Near Palmyra



Milton Access Road Before We Filled In The Pot Holes



Same Milton Access Road After We Filled In The Pot Holes



Group canoeing from Camp Friendship



Removing Tires From Crofton to Palmyra





Rowers On The Rivanna Reservoir



UVA Womens Rowing Team On South Fork Rivanna River



Safety Briefing Before Fall Sojourn Begins



Out On The River During Fall Sojourn Paddle



## **Litter / Pollution**

One of the major activities that the Stewards spent time doing while out paddling on the Rivanna River this year, was to perform clean-up of litter and other objects that are not intended to be in the water. The Stewards made a big impact on the general cleanliness of the Rivanna through the removal of litter, but this will still be an ongoing effort, as people continue to throw their trash in the River or on the ground nearby. The Stewards noticed that after heavy rains, the amount of trash in the River was significantly higher, which makes sense due to the heavy stormwater volumes washing the trash into the water. Trees that came down during storms and got lodged in the river also tend to collect debris and trash to prevent it from flowing downstream any further. More urban areas near Charlottesville seemed to have a higher volume of litter and trash than more rural areas upstream or downstream. The Stewards also found that areas where people were fishing or hanging out along the river banks, on beaches, and under bridges tended to have a higher concentration of litter as well.

The majority of the trash that was found in the river was smaller items such as beverage containers (plastic, glass, and metal), plastic bags, food trash, fishing bait boxes, Styrofoam, and sporting equipment (balls and Frisbees). But there also were a wide variety of larger items in the River as well. One of the biggest issues the Stewards quickly noticed during the start of our Steward program was the amount of tires that had been disposed of in the Rivanna. Most of these tires were buried in the riverbed meaning they had been there for a long time. The total count was somewhere between 200-300 tires in total during the paddle trips. Most tires are standard vehicle sized, but several are larger farm equipment or large truck tires.

Some of the other interesting larger items identified in the Rivanna included metal signs, wood pieces, shopping carts, tables, farm equipment, pay phones, metal safes, plastic barrels, and newspaper stands.

In all the Stewards estimate that they removed about 50 large trash bags worth of trash from the Rivanna, as well as almost 200 tires from the river this year as part of the Steward program.

Below some photos of the trash found during the Steward paddle trips are provided.

## Litter / Pollution Photos



Trash Found On Beach Near Riverview Park



Examples of Litter Found and Removed Near Charlottesville



Examples Of Litter Found And Removed Near Charlottesville



Plastic Bottle Floating In River



Example Of Fishing Bait Box Found In River

## Issues to Address

Throughout the regular paddle trips on the Rivanna, the Stewards noted several areas that need future attention to make sure that the health of the River and the organisms that live in it and depend on it are maintained. Overall, as mentioned above, the River is generally in good shape, and none of the items below is extremely critical or urgent. These items are just ones that RCS thinks could improve the overall experience for people using the Rivanna River, as well as remove items that may cause any harm.

Below is some information about some of the most critical areas of concern that the Stewards hope to address in the very near future.

### Issue #1: Create better signage at boat access points along the River

The Stewards have noticed that it can be fairly difficult to find or see some of the take out locations on the River, and there is little to no signage for people to indicate where these locations are. One of the only signs that exists is the one pictured below at Milton. The Stewards feel that better signage might help paddlers on the river not miss their take out locations if they aren't familiar with the area. It also makes it look like the River is being taken care of and cared about by somebody if nice signage is present. RCS would like to work with The City of Charlottesville and Albemarle County to create and install some better signage at each of the boat launch / take out locations on the Rivanna River.



Current Sign At Milton Shadwell Access Point



## Issue #2: Repair the damaged Milton Shadwell kiosk

RCS maintains several kiosks that contain information about the Rivanna River throughout the watershed. The Stewards have recently updated these kiosks with current information and maps, as well as cleaned them up a bit. The one that is still in need of some attention is the one at the Milton Shadwell access point. Several months ago the Stewards noticed that someone had thrown white paint on the back side of the kiosk as pictured below. Then more recently someone has added graffiti to the kiosk as pictured below. RCS plans to re-paint the kiosk in the Spring of 2015 to cover up all of the paint and graffiti, so that it looks nicer and doesn't deter people from coming to the area.



Damaged Milton Kiosk In July 2014



Damaged Milton Kiosk In November 2014

### Issue #3: Remove the larger objects found in the River

While the Stewards have been successful this year at removing a good number of tires from the River, as well as some other larger trash items, there does still remain a good number of items (some pictured below) that will need to be removed in the future. Most of these items will require heavy lifting and potential some heavy duty equipment to remove and dispose of, so RCS will strategically plan out the best way to proceed with future efforts. The Stewards also are planning to conduct several more tire removal paddle trips in the Spring of 2015 focused on sections of the Rivanna upstream from the Crofton to Palmyra section where they have removed almost all of the tires this Fall.



Farm Equipment On Bank Near Crofton



Large Metal Safe On Beach Near Riverview Park



Plastic Barrel In Tree Near Woolen Mills



Tire Still Attached To Axle In River





Pay Phone Found on River Bank Near Milton



60 Tires Removed at Palmyra During September Paddle



Sewer Manhole Cover Between Darden and Riverview



Buried Shopping Cart Near Woolen Mills

Issue #4: Look into brown discharge at outfall pictured below near Rio Mills

The only location the Stewards saw visible evidence of an outfall pipe or point source of pollution entering the Rivanna was at the location below just below Rio Mills at river right where brown liquid was being discharged. The RCS knows that Albemarle County is already aware of this and is investigating the issue and working on a solution to the problem.



Outfall Pipe Discharging Brown Liquid

### Issue #5: Erosion of river banks

On several paddle trips and in several locations this year the Stewards have noticed areas where the river banks have eroded away and vegetation has been washed away. It appears that some of these locations have been experiencing erosion for quite some time, but others may have occurred more recently during some of the very heavy storms we experienced this year. These heavy storms also deposited a good amount of fallen trees and other debris in the river in various locations. There are several bridge overpasses where a significant amount of debris has accumulated. RCS plans to see if a few specific areas along the Rivanna can be targeted where it would be possible to implement some re-vegetation and bank stabilization projects to try to avoid further damage to the river banks. RCS will look to partner with the government agencies and other organizations for these efforts.



Eroded Bank Between Milton and Crofton



Eroded Bank At Glenmore Country Club