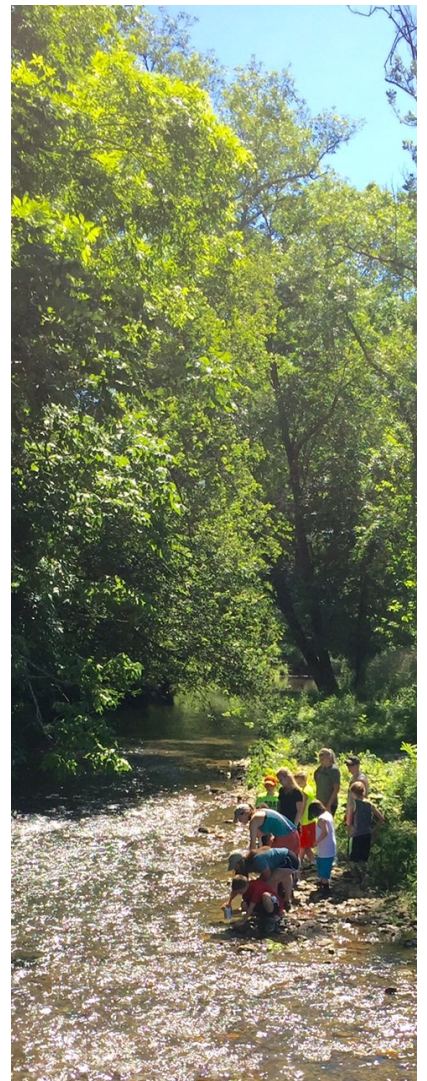
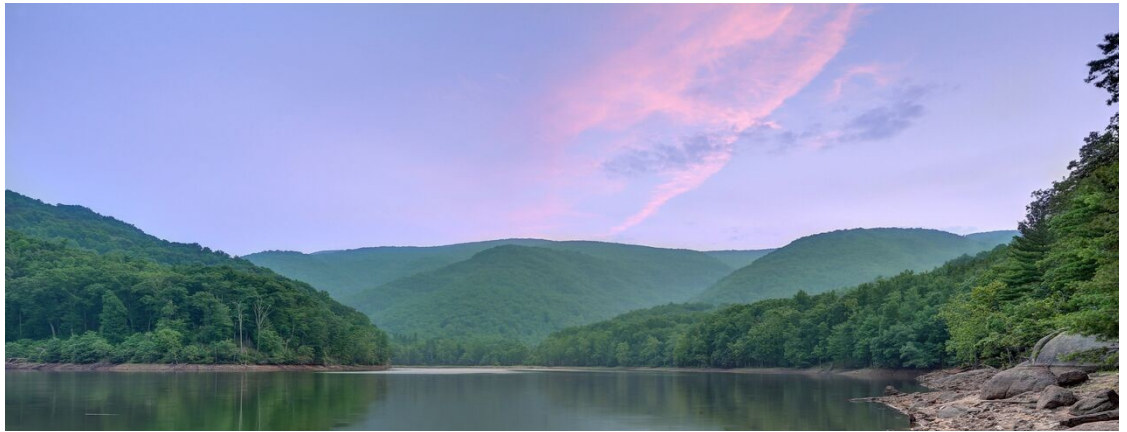


# RIVANNA RIVER STEWARDS

2017 ANNUAL REPORT



The Rivanna Conservation Alliance (RCA) is a 501(c)(3) nonprofit watershed organization created to provide the community with a set of tools and programs specifically designed to help clean and protect the Rivanna River and its tributaries. The Rivanna River Steward program was launched in the Spring of 2014, with two Stewards, two boats and a significant amount of enthusiasm. The Stewards just completed the fourth program year and a summary of their findings and accomplishments, as well as future plans in the local community are contained within this report.



**RIVANNA**  
CONSERVATION ALLIANCE

[www.rivannariver.org](http://www.rivannariver.org)

1150 River Road

Charlottesville, VA 22901

(434)97-RIVER



# 2017 ANNUAL REPORT

## TABLE OF CONTENTS

Overview	1
About the River	1
The Goal	2
Observations	3
River Areas Monitored	4
Flora and Fauna	10
Swiftwater Rescue and River Safety Trainings	20
Community Outreach	22
Litter/Pollution/Safety Concerns	26
Trailer Removal	31
Issues to Address	34

# OVERVIEW

The Rivanna River Steward program was launched in the Spring of 2014, with two Stewards, two boats and a significant amount of enthusiasm. The Stewards just completed the fourth program year. From March 2017 through November 2017, the two River Stewards, Dan Triman and Justin Altice, paddled the Rivanna River and local reservoirs. Paddles typically took place once a week to monitor the Rivanna watershed directly on the water and report on their findings to community members. A summary of their findings and accomplishments, as well as future plans in the local community are outlined below.



## ABOUT THE RIVER

The Rivanna River is often referred to as "Mr. Jefferson's River" because Thomas Jefferson grew up on its shores 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 (RCA) in 1990.

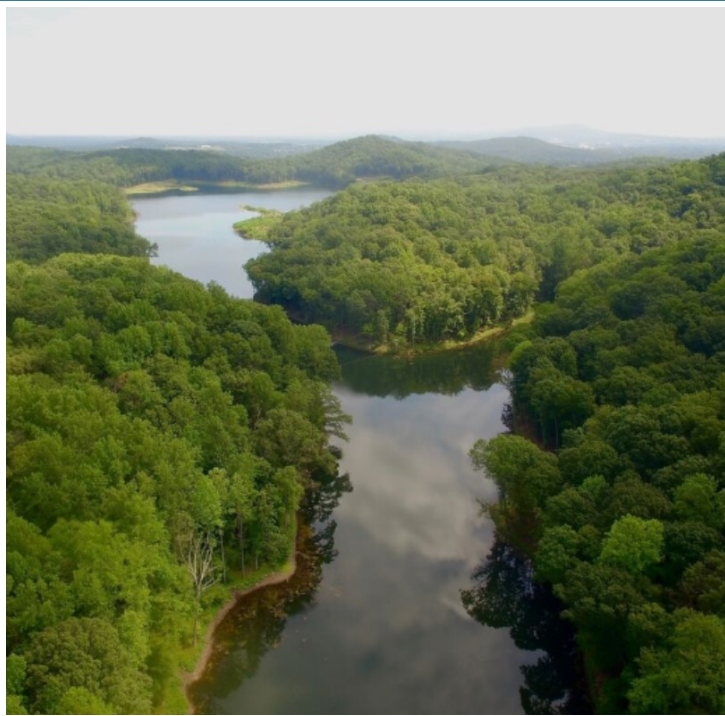
The Rivanna was named to honor Queen Anne (1665-1714), and is a tributary of the James River, flowing ultimately into the Chesapeake Bay. The Rivanna River is a 42.1-mile-long River originating in the Blue Ridge Mountains (North Fork in Greene County and South Fork in Albemarle County).

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, RCA estimates that 48% of Rivanna streams failed the Virginia aquatic standard for aquatic life. However, only 6% of streams are severely degraded and 8% are at or near natural biological condition.

The Rivanna River Watershed is polluted primarily by:  
**-Pathogens (E. coli)**  
**-Sediment caused by erosion from land use and urbanization**



# THE GOAL



## Stewards Goal

The goal of the River Steward program is to give the Rivanna Conservation Alliance (RCA) a physical presence on the River. The Stewards use this presence to document pollution sources, observe changes to the River ecosystem over time, interact with community members on and around the River, and to share information about the native flora and fauna observed.

In our fourth year of the Stewards program we have been able to document a significant amount of information about the water conditions throughout the Rivanna watershed. This information is intended to inform the community about the real-time conditions of the Rivanna River as well as trends over time. Every time the Stewards go out for a paddle, they write a trip report that summarizes their findings. These reports are then emailed to our local partner organizations and community leaders, as well as posted on RCA's website

(<http://www.rivannariver.org/stewards-reports/>) for the general public to access.

The natural beauty of the Rivanna River is of great inspiration to the River Stewards. Much of the community is largely unaware of this incredible resource they have in their backyard. Our goal is to have more members of the community on the River so that this treasure can be fully appreciated. The Stewards have a personal goal to spread the word about what a hidden gem the Rivanna is and to inspire people to enjoy, as well as protect their local River.

***For the most recent stewards report visit:***

***[www.rivannariver.org/stewards-reports/](http://www.rivannariver.org/stewards-reports/)***

# OBSERVATIONS

The Rivanna River, north and south forks, traverse approximately 40 miles through urban and rural landscapes. The width and depth of the Rivanna changes depending on which section the Stewards are paddling. Each section is defined by the access points found throughout the areas the Rivanna traverses. Access points are mainly located at or near bridge crossings over the Rivanna River.

Generally, the Rivanna is a healthy ecosystem. This is largely due to the minimal amount of industrial activity in our area and the large number of forested acres that surround the River. The Stewards did not notice significant odors, or significant water discolorations during this year's paddles. The areas of the River located along the urban corridor of Route 29 do show signs of more runoff and trash pollution sources than the more rural areas. The River does suffer from strong urban runoff following rain events, resulting in noticeable discoloration from sediment and pollution. These events also wreak havoc on the few access points along the Rivanna River.

Water levels were generally good during the Spring, and early Summer. The Spring of 2017 was particularly wet which facilitated the River being up for most of the March-early June time frame. Around the middle to end of July, there was a significant drop in the amount of rainfall resulting in lower water levels for the rest of the year. There were a couple of smaller rain events that provided some much-needed bumps in the water levels, but they never increased the water levels by much. There were many weeks that went by between July and November where paddling was very difficult on the Rivanna because of such low water levels. Low water levels can hinder the community's ability to get out on the water because paddling the Rivanna is very difficult during these times due to exposed rocks and river bed.







## RIVER SECTIONS MONITORED

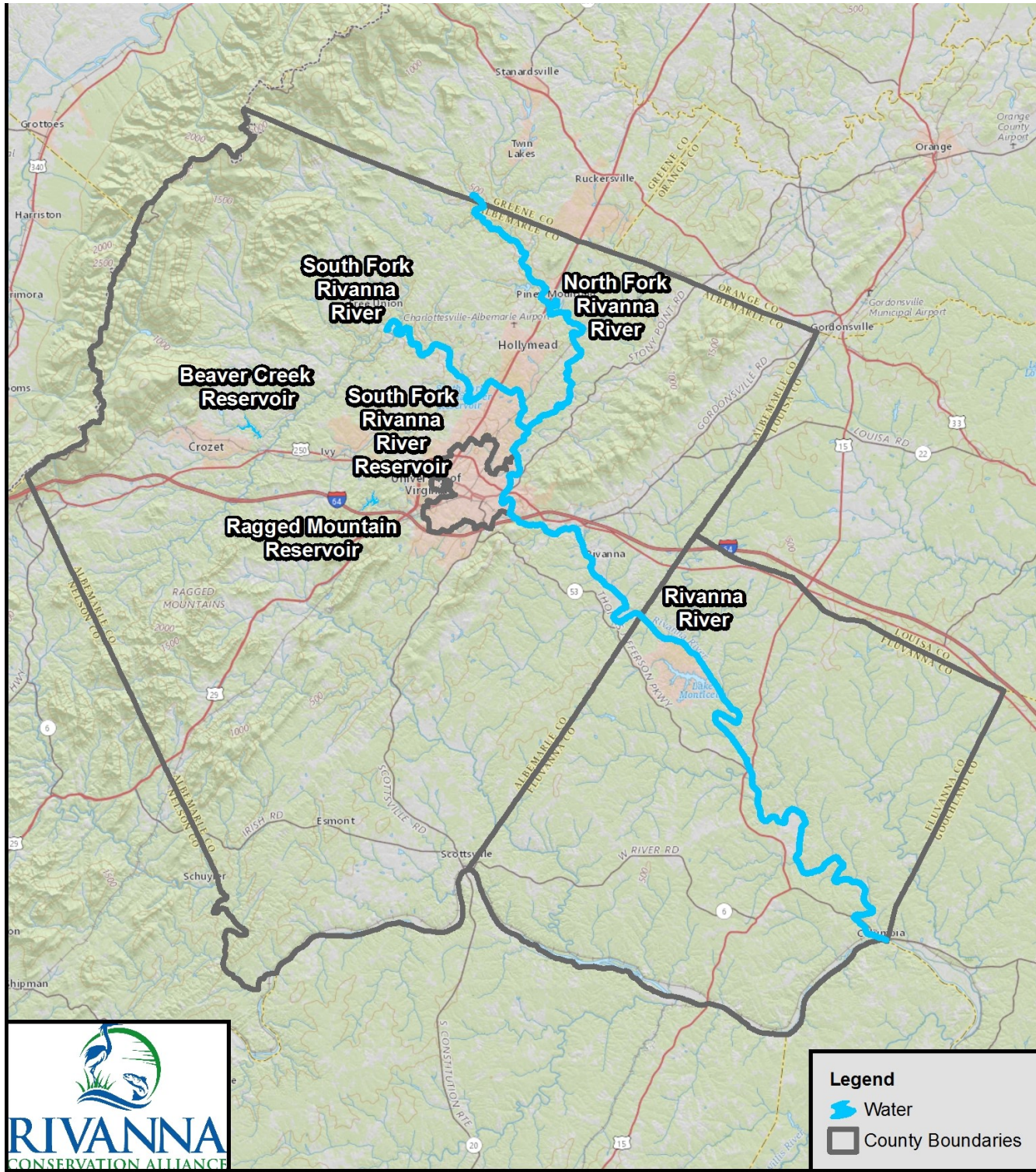
This year, the Stewards were able to monitor the entire South Fork of the Rivanna, portions of the North Fork of the Rivanna, and portions of the main stem of the Rivanna. The South Fork of the Rivanna starts in Albemarle County where the Mechums River ends (just above Reas Ford Rd), and the North Fork starts in Greene County at the confluence of the Lynch River and Roach River. The North and South Forks of the Rivanna meet one another to form the main stem of the Rivanna, a few miles north of Darden Towe Park. The main stem of the Rivanna then extends down to Columbia, where it meets the James River. In addition to the paddles on the Rivanna River, the Stewards also monitored local reservoirs, including Beaver Creek Reservoir, Ragged Mountain Reservoir, and the South Fork Rivanna River Reservoir. The North Fork of the Rivanna is much more difficult to paddle than the South Fork due to the River being narrower and low water levels most of the year.

The table on the subsequent pages shows the sections of the Rivanna paddled by the Stewards, dates paddled, and, the length of each section. The total mileage from all the paddle trips the Stewards completed this year was approximately 96.5 River miles.

The map on the next page shows where the Stewards paddled this season. The map shows the South and North Forks of the Rivanna, as well as the main stem of the Rivanna once the two forks meet. From the map you can see that the Rivanna extends from Albemarle County (South Fork) and Greene County (North Fork) at the north, through Charlottesville, and then down to Fluvanna County at the southern terminus when it meets the James River.



## RIVER SECTIONS MONOITORED



## RIVER SECTIONS MONITORED

River Section	Starting Point	Ending Point	Section Mileage	Dates Paddled
Section 1	Mechums River Junction above Reas Ford Rd (South Fork)	Earlsville Rd (Reservoir)	3.5	06/26/17, 09/22/17
Section 2	Earlsville Rd (Reservoir)	Rio Mills Dam (Reservoir)	1.5	07/15/17, 08/19/17, 09/22/17, 11/05/17
Section 3	Rio Mills Dam (Reservoir)	Confluence South Fork and North Fork	3.5	04/16/17, 06/21/17
Section 4	Confluence South Fork and North Fork	Darden Towe Park	3.0	04/16/17, 06/21/17
Section 5	Darden Towe Park	Free Bridge	0.6	05/14/17, 06/08/17, 06/21/17, 06/23/17, 08/13/17, 09/30/17, 11/03/17
Section 6	Free Bridge	Riverview Park	1.4	05/14/17, 06/08/17, 06/23/17, 07/12/17, 08/13/17, 09/30/17, 11/03/17
Section 7	Riverview Park	Milton Shadwell	4.3	04/28/17, 06/23/17, 07/12/17, 08/13/17, 11/16/17
Section 8	Milton Shadwell	Crofton	10.0	05/29/17
Section 9	Crofton	Palmyra	6.5	06/03/17, 08/23/17
Section 10	Palmyra	Columbia	16.0	
Section 11	Beaver Creek Reservoir	Beaver Creek Reservoir	2 miles (round trip)	08/04/17
Section 12	Ragged Mountain Reservoir	Ragged Mountain Reservoir	2 miles (round trip)	05/27/17
Section 13	Frays Mill Rd (North Fork)	Route 29 (North Fork)	3.0	06/18/17
Section 14	Route 29 (North Fork)	Proffit Rd (North Fork)	8.0	05/07/17
Section 15	Proffit Rd (North Fork)	Confluence of South Fork and North Fork	2.0	

# WATER TESTING SUMMARY

## Chemical and Physical Properties

Each paddle trip the Stewards completed, they took a basic water monitoring kit with them to record chemical and physical properties of the Rivanna River. All of the readings that were collected for temperature, turbidity, pH, and Dissolved Oxygen were within the expected range this year. Dissolved Oxygen readings were always in the 4-5 ppm range, pH readings were always in the 7-8 range, and some of the turbidity readings were fairly high (50-70 JTU) after large storms, as expected. A summary of the water testing data recorded for each paddle trip is provided below and in the adjacent pages.

Date Tested	Location Test Performed	USGS Water Gauge Readings (Depth & Flow)	Air Temp (F)	Water Temp (C)	DO (ppm)	PH	Turbidity (JTU)
04/16/17	38°06.1'N 78°27.7'W Under 29 Bridge River Left	Earlsville: 1.59 ft (52 cfs) Palmyra: 2.96 ft (280 cfs)	80	22	4	7	10
04/28/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlsville: 2.25 ft (150 cfs) Palmyra: 3.75 ft (1000 cfs)	85	23	5	7	30
05/07/17	38°09.1'N 78°25.3'W Under 29 Bridge River Left	Earlsville: 3.60 ft (470 cfs) Palmyra: 6.00 ft (2700 cfs)	60	19	5	7	40
05/14/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlsville: 2.80 ft (300 cfs) Palmyra: 5.60 ft (2000 cfs)	83	17	4	8	70
05/27/17	38°01.8'N 78°33.6'W Below Parking Lot East Side	Earlsville: 3.40 ft (400 cfs) Palmyra: 5.75 ft (2100 cfs)	75	28	4	7	0
05/29/17	37°55.1'N 78°17.9'W Crofton Boat Ramp River Left	Earlsville: 3.00 ft (310 cfs) Palmyra: 4.66 ft (1560 cfs)	70	26	5	7	20



Date Tested	Location Test Performed	USGS Water Gauge Readings (Depth & Flow)	Air Temp (F)	Water Temp (C)	DO (ppm)	PH	Turbidity (JTU)
06/03/17	37°51.5'N 78°16.0'W Palmyra Boat Ramp River Right	Earlsville: 2.00 ft (120 cfs) Palmyra: 3.50 ft (500 cfs)	85	17	4	7	10
06/08/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlsville: 1.73 ft (68 cfs) Palmyra: 3.15 ft (375 cfs)	70	20	5	8	0
06/18/17	38°09.4'N 78°25.7'W Just after small Dam on NF River Left	Earlsville: 2.40 ft (120 cfs) Palmyra: 3.70 ft (1000 cfs)	91	17	5	7	50
06/21/17	38°06.1'N 78°27.7'W Under 29 Bridge River Left	Earlsville: 2.75 ft (250 cfs) Palmyra: 3.75 ft (750 cfs)	80	29	4	7	20
06/23/17	38°00.3'N 78°23.9'W Milton River Left	Earlsville: 2.15 ft (130 cfs) Palmyra: 3.20 ft (375 cfs)	80	28	5	8	10
06/26/17	38°07.5'N 78°30.9'W Reas Ford Rd River Left	Earlsville: 1.76 ft (75 cfs) Palmyra: 2.90 ft (240 cfs)	70	25	5	8	0
07/12/17	38°00.3'N 78°23.9'W Milton River Left	Earlsville: 1.40 ft (32 cfs) Palmyra: 2.60 ft (120 cfs)	85	29	4	7	20
07/15/17	38°05.8'N 78°29.2'W UVA Boathouse Dock River Right	Earlsville: 1.70 ft (60 cfs) Palmyra: 2.44 ft (90 cfs)	80	32	4	8	10

Date Tested	Location Test Performed	USGS Water Gauge Readings (Depth & Flow)	Air Temp (F)	Water Temp (C)	DO (ppm)	PH	Turbidity (JTU)
08/04/17	38°04.5'N 78°39.5'W Middle of Beaver Creek Reservoir	Earlysville: 1.23 ft (13 cfs) Palmyra: 2.25 ft (39 cfs)	70	30	5	7	0
08/13/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlysville: 1.28 ft (16 cfs) Palmyra: 2.45 ft (80 cfs)	80	30	5	8	10
08/19/17	38°05.7'N 78°29.3'W Woodlands Rd Boat Ramp Reservoir Right	Earlysville: 1.90 ft (70 cfs) Palmyra: 3.15 ft (300 cfs)	75	30	5	8	20
08/23/17	37°51.5'N 78°16.0'W Palmyra Boat Ramp River Right	Earlysville: 1.28 ft (16 cfs) Palmyra: 2.50 ft (85 cfs)	80	30	5	8	10
09/22/17	38°06.2'N 78°28.1'W Just above Rivanna Reservoir Dam Center of Reservoir	Earlysville: 1.15 ft (13 cfs) Palmyra: 2.43 ft (83 cfs)	80	27	5	8	20
09/30/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlysville: 1.05 ft (8 cfs) Palmyra: 2.30 ft (57 cfs)	70	25	5	8	0
11/03/17	38°01.4'N 78°27.2'W Riverview Boat Ramp River Right	Earlysville: 1.50 ft (39 cfs) Palmyra: 2.67 ft (154 cfs)	75	22	5	8	20
11/05/17	38°05.8'N 78°29.2'W UVA Boathouse Dock River Right	Earlysville: 2.10 ft (120 cfs) Palmyra: 3.10 ft (350 cfs)	62	22	5	7	40
11/16/17	38°01.4'N 78°27.2'W @ Riverview Boat Ramp River Right	Earlysville: 1.48 ft (39 cfs) Palmyra: 2.67 ft (154 cfs)	60	16	5	7	20

# FLORA AND FAUNA

On every Steward paddle this year, Justin and Dan observed a variety of wildlife on the Rivanna River. The wildlife came in many different forms and species, including small insects and bugs, birds, fish, reptiles, and some larger mammals. Having now had four years of the Steward program to paddle the Rivanna and get familiar with where wildlife tends to be seen and at what times of day, the Stewards have noticed some patterns. Examples of this are seeing bald eagles (and their nest) in the same location, seeing schools of long nose gar in the same general locations, finding specific islands where turtles and birds tend to gather, and noticing that when paddling around twilight the wildlife sightings tend to be the most common. This implies that these animals live in specific areas and are finding these locations suitable for their needs. The most common wildlife observed every year on the Rivanna are turtles, birds and fish. During the paddles the Stewards observed the following wildlife:

## ***Birds***

Great Blue Herons, Bald Eagles, Ospreys, Hawks, Crows, Geese, Ducks, Bluebirds, Robins, Cardinals, Raven, Kingfishers, Sandpipers, Chickadees, Cormorants, Tree Swallows, Vultures, Pileated Woodpecker, and several other smaller birds

## ***Insects and Bugs***

Spiders, Dragonflies, Butterflies, Water Striders, Ladybugs, Caterpillars, Snails

## ***Reptiles and Amphibians***

Frogs, Toads, Tadpoles, Eastern Painted Turtles, Snakes

## ***Fish***

Long Nose Gar, Bass, Catfish, and several other smaller minnows

## ***Mammals***

Beaver, Otter, Deer, Squirrel, Bats, Groundhogs, Cats, Dogs

## ***Other***

Mussel Shells (in Reservoirs)

As for vegetation, there is a wide range of vegetation to be found in and around the Rivanna River. Some of this vegetation is native species and others are invasive species. A few of the plants that were identified during the paddles included redbuds, bamboo, mimosa, cardinal flowers, and mountain laurel. There was also a significant amount of underwater growth of vegetation in the Rivanna and Reservoirs found this year.

The vegetation is especially important to keep the River banks from eroding away. It is always nice to see the seasonal changes in the vegetation along the Rivanna, as the environment surrounding you when you paddle in various seasons looks vastly different depending on what time of year you are on the River.

The subsequent pages contain photo highlights of wildlife and vegetation observed this year by the Stewards. The photos show the Rivanna is fairly healthy and is providing sufficient habitat for the living organisms that depend on the River. The 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 RCA Board of Directors and members and the public at large.



# FLORA PHOTOS



Figure 1: Yellow flowers blooming along the bank  
(04-16-17)



Figure 3: Yellow flowers growing in Ragged Mountain Reservoir (05-27-17)



Figure 4: Mimosa trees on South Fork Rivanna  
(06-21-17)

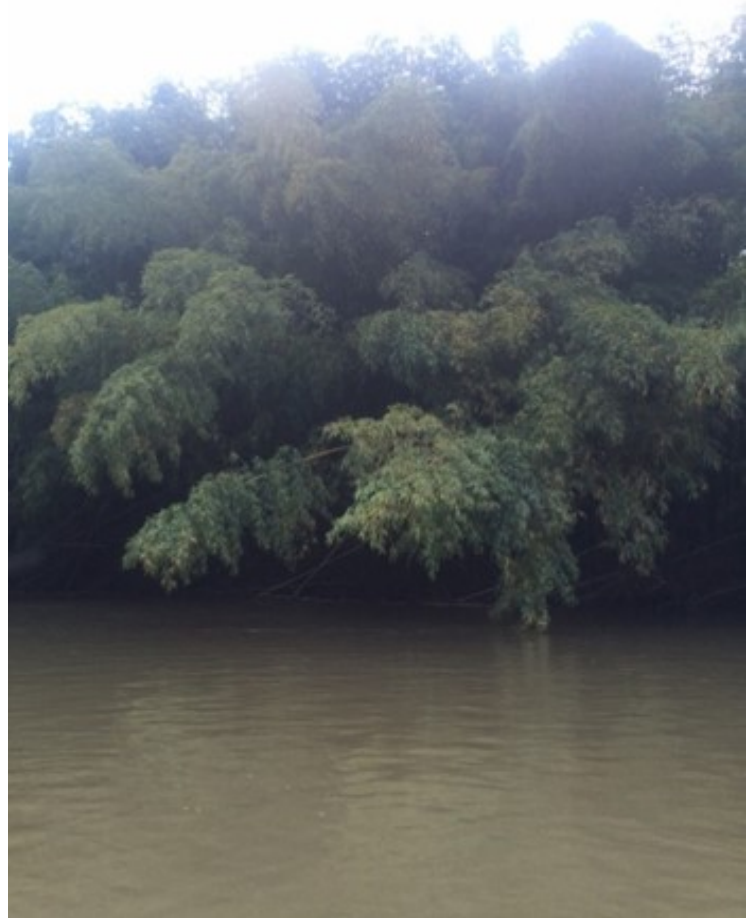


Figure 2: Thick bamboo along City side of River near Darden Towe Park.  
(04-16-17)

# FLORA PHOTOS



Figure 5: Orange Lilies (06-21-17)



Figure 6: Underwater vegetation near 29 bridge (06-21-17)



Figure 7: Purple flowers (07-12-17)



Figure 8: Cardinal Flowers (08-13-17)



# FAUNA PHOTOS

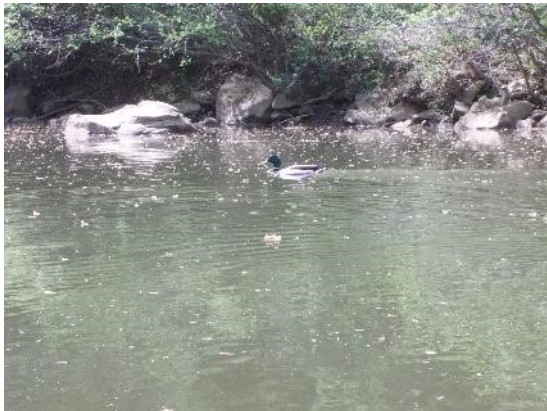


Figure 1: Duck swimming in the water (04-16-17)



Figure 2: Spider catching a ride in the kayak (04-16-17)



Figure 3: Very large and angry goose at edge of the water (05-07-17)



Figure 4: Goose and 2 goslings swimming (05-27-17)



Figure 5: Small fish swimming in the water (05-27-17)



Figure 6: Black snake found at the Lewis and Clark Center (6-18-17)



# FAUNA PHOTOS



Figure 7: Lots of small shells piled up under the water South Fork Rivanna (06-21-17)



Figure 8: Turtle sunning on a log (06-21-17)



Figure 9: Caterpillar (The Laughing) rescued from the water (06-21-17)



Figure 10: Turtles resting on a log (06-23-17)



Figure 11: Great Blue Heron at water's edge (06-23-17)



Figure 12: Young eagle perched on power line tower (06-23-17)

# FAUNA PHOTOS



Figure 13: Great Blue Heron (06-26-17)



Figure 14: Great Blue Heron looking for a snack (06-26-17)



Figure 15: Great Blue Heron (06-26-17)



Figure 16: Green Heron in a tree (07-12-17)



Figure 17: Turtle getting some sunshine (07-12-17)



Figure 18: Green Heron (07-12-17)



# FAUNA PHOTOS



Figure 19: Damselfly riding on one of our kayaks (07-12-17 )



Figure 20: Osprey flying in the distance (07-12-17)



Figure 21: Tadpole in a shallow area of the River (08-13-17)



Figure 22: Group of ducks at Rivanna Reservoir (08-19-17)

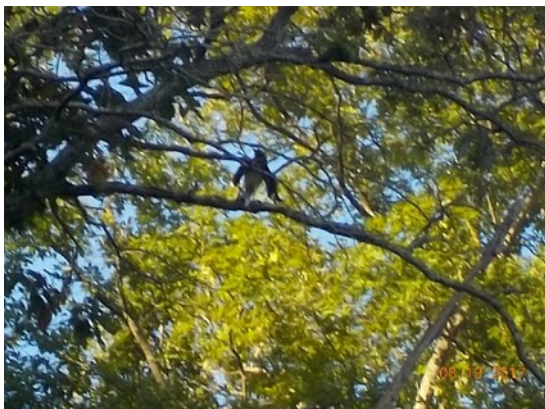


Figure 23: Osprey or Hawk sitting in a tree after having just caught a fish (fish is being held by birds feet ) (08-19-017)



Figure 24: Another shot of bird holding the fish (08-19-17)

# FAUNA PHOTOS



Figure 25: Moth webs on trees at Rivanna Reservoir (08-19-17)



Figure 26: Butterfly on Woodlands Rd ramp (08-19-17)



Figure 27: 3 Deer standing in Rivanna River (08-23-17)

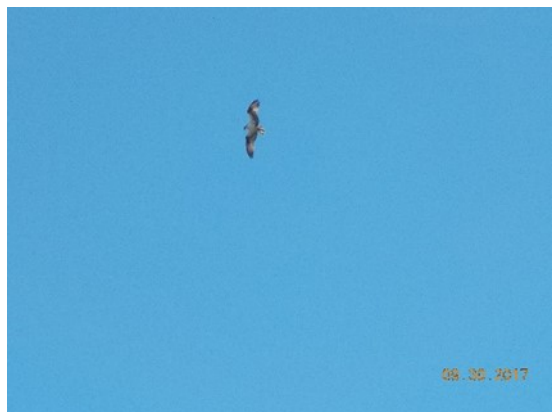


Figure 28: Osprey flying overhead (09-30-17)



Figure 29: Great Blue Heron (11-03-17)



Figure 30: Heron taking flight (11-16-17)



## PARTNERSHIPS AND COMMUNITY OUTREACH

One of the most important aspects of the work being done by RCA and the Stewards is engaging 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. The Stewards frequently observed community members using the River for fishing, swimming, kayaking, canoeing, tubing, and rowing. The Stewards also saw a lot of people hiking, or running along the Rivanna Trails that parallel the River on both sides near the City of Charlottesville.

The Stewards continued RCA's partnerships with numerous local groups this year. These organizations included The Lewis and Clark Exploratory Center, The Rivanna River Company, Big Brothers Big Sisters of the Central Blue Ridge, and the UVA Batten School. The Spring Sojourn paddle was scheduled to take place from the Rio Mills area down to Darden Towe Park; unfortunately, this event had to be cancelled due to torrential rains that were received. The Fall Sojourn was a full moon paddle on the South Fork Rivanna River Reservoir in early November. This paddle utilized the Stewards partnership with the UVA Rowing Center to launch from their boat dock on the reservoir offering a unique opportunity for community members.



Figure 1: RCA Fall Sojourn participants (11-04-17)



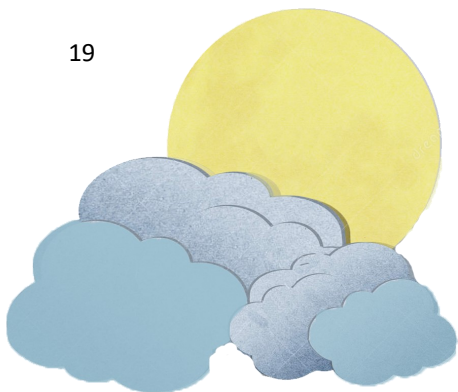
Figure 2: RCA Fall Sojourn on South Fork Reservoir (11-04-17)



Figure 3: RCA Fall Sojourn participants (11-04-17)



Figure 4: RCA Fall Sojourn on South Fork Reservoir (11-04-17)



# RIVANNA

CONSERVATION ALLIANCE

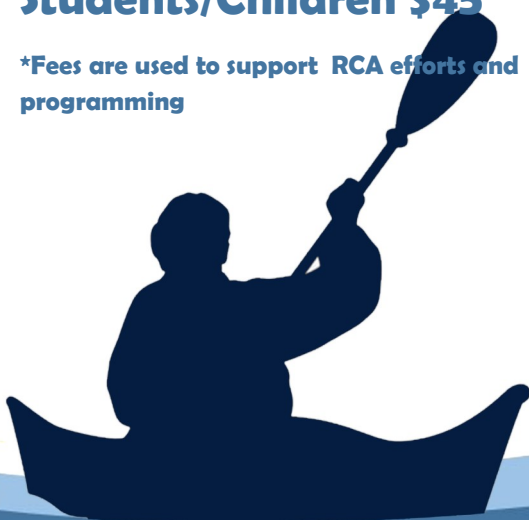
## RIVER SOJOURN

**SATURDAY**  
**November 4**  
**5-8 PM**

**Adult \$60**

**Students/Children \$45**

\*Fees are used to support RCA efforts and programming



# EXPERIENCE THE RIVANNA

Paddle Under the Changing Light of a  
Setting Sun and Rising Full Moon

**WHAT:** Come join RCA river stewards on the beautiful South Fork Rivanna River Reservoir.

**WHERE:** UVa Rowing Club dock

276 Woodlands Road

Charlottesville, VA 22901

**DETAILS:** The paddle will be guided by RCA River Stewards with support from the Rivanna River Company. All equipment, PFDs, paddles, canoes, kayaks, and light fall themed refreshments will be provided.

**BRING:** Warm clothes in layers (waterproof if possible), head lamp/flashlight, and water shoes. If you would like to use your own equipment, you are encouraged to do so.



Register at:

<https://www.surveymonkey.com/r/RCAfallsojourn2017>

**FOR MORE INFORMATION VISIT: [www.rivannariver.org](http://www.rivannariver.org)**

Contact RCA River Steward: Justin Altice (email- [justinaltice@rivannariver.com](mailto:justinaltice@rivannariver.com) phone-434-242-2896)

## SWIFTWATER RESCUE AND RIVER SAFETY TRAININGS

RCA held several River Safety workshops this year, in partnership with some of the local rescue squads such as Charlottesville/Albemarle Rescue Squad and the Lake Monticello Water Rescue Team. We also had members of the Albemarle County Water Rescue Team, and Lake Monticello Rescue Team join us on paddle trips this year. RCA continued its partnerships with the City of Charlottesville and Albemarle County to improve River access points in the area. The new boat access steps and platform at Riverview Park constructed last year really held up well this year and were highly used by the community.

RCA Stewards participated in two Swift water Rescue training classes (ACA Level 3 River Safety and Rescue) this year. The 1<sup>st</sup> of the classes was held on May 25<sup>th</sup> at Lewis & Clark Exploratory Center in Darden Towle Park. The class was taught by Jamie Beadle from Lake Monticello Water Rescue Team. We had participants from RCA, The Rivanna River Company, Lewis & Clark Exploratory Center, Great Outdoor Provisions Co., and The Albemarle County Fire and Rescue Team. Due to the high water levels and fast moving current in the Rivanna River that day, we were unable to complete the on the water portion of the training class, but we did cover the following topics: understanding the swift water environment; river trip planning to reduce the risk of injuries and rescues; liability; developing key self-rescue skills; identifying and avoiding river hazards by understanding hydrology, hazards, and river features; throwing rescue ropes; equipment checks and discussion; boat pins and basic mechanical advantage.

The 2<sup>nd</sup> of the training classes was held on June 8<sup>th</sup> and was the on the water portion of the class. This class was taught by Jamie Beadle (Lake Monticello Water Rescue Team), and Joe Plumb (Albemarle County Water Rescue Team). Four staff from The Rivanna River Company and the two RCA River Stewards completed the training during a paddle on the Rivanna River from the Darden Towle Park to Riverview Park. During the paddle we stopped along the way to learn skills such as defensive and aggressive swimming techniques, crossing swift water, using throw ropes, foot entrapment, reading and understanding swift water/rapids, strainers and sweepers, and swift water entry.



Figure 1: Swiftwater Rescue Class group photo (05-25-17)



Figure 2: Swift water Rescue Class at Lewis and Clark Center (05-25-17)



## SWIFTWATER RESCUE AND RIVER SAFETY TRAININGS



Figure 3: Joe Pound (Albemarle County Rescue Squad) demonstrating a Swift water crossing technique (06-08-17)



Figure 4: Justin doing a Swift water entry dive (06-08-17)



Figure 5: Dan doing a Swift water entry dive (06-08-17)



Figure 6: Albemarle County Fire Rescue Team (06-23-17)



Figure 7: Jamie Beadle (Lake Monticello Rescue Team) demonstrating rope throwing techniques (05-25-17)

## COMMUNITY OUTREACH

The Stewards were also able to provide opportunities for educational paddle trips for children and students this year. Among them was a paddle trip on the Rivanna Reservoir with Big Brothers Big Sisters of the Central Blue Ridge (group of 6 elementary school students and their adult matches). RCA also held several volunteer clean up events in partnership with UVA students and staff that came out to local parks and boat access locations to assist with various projects to maintain and improve these areas. One of the annual events the Stewards hosted was the UVA Batten Builds Community Service day; students were guided to help improve the Riverview Park, Darden Towe Park, and Milton River access points. This event was completed on the day of the Solar Eclipse which provided the Stewards, students, and the local news crew that covered the story with a memorable experience.

One of the bigger events of the year for RCA was the Rockin' the Rivanna River Festival in late September. This Festival included a Rivanna River paddle from Darden Towe Park to Riverview Park. In advance of the paddle the Charlottesville/Albemarle Rescue Squad and the Lake Monticello Water Rescue Team shared their expertise and equipment with the public, giving tips and recommendations on how to be safe on the River. A group of about 20 paddlers joined the RCA Stewards on this paddle, many with decorated boats as a part of the Parade of Boats. We had representatives from the Albemarle Board of Supervisors, Albemarle County Parks and Recreation, and Lewis and Clark Exploratory Center were paddling as a part of the Parade. In addition, Gabe Silver and his team from the Rivanna River Company rented boats (and shuttled) paddlers throughout the day. There were also Exhibits at both Darden Towe Park and Riverview Park (City of Charlottesville and RCA) also with water quality monitoring demonstrations at Riverview.

As a part of the River Festival there was the FLOW River Arts Festival, organized by Deborah McLeod and Chroma, with several hundred folks walking the Rivanna Trail to experience physical, performance and musical art. There was music for the paddlers to hear, as well as sights and sounds not often associated with a festival of this kind, which made for a beautiful event all around.



Figure 1: Big Brothers Big Sisters Paddle (07-15-17)



Figure 2: Big Brothers Big Sisters Paddle (07-15-17)



Figure 3: Big Brothers Big Sisters Paddle (07-15-17)



# COMMUNITY OUTREACH



Figure 4: Big Brothers Big Sisters Paddlers on Reservoir (07-15-17)



Figure 5: Big Brothers Big Sisters Paddlers on Reservoir (07-15-17)



Figure 6: Big Brothers Big Sisters Paddlers on Reservoir (07-15-17)



Figure 7: Big Brothers Big Sisters Paddlers on Reservoir (07-15-17)



Figure 8: Historic Panel on RCA Milton Kiosk (08-13-17)



Figure 9: Historic Panel at RCA Palmyra Kiosk (08-23-17)



# COMMUNITY OUTREACH



Figure 10: Updated maps at RCA Crofton Kiosk (08-23-17)



Figure 11: Historic Panel at RCA Crofton Kiosk (08-23-17)



Figure 12: Charlottesville Albemarle Rescue Squad (09-30-17)



Figure 13: Dan Mahon's Duck Boat for Rockin' the Rivanna Paddle (09-30-17)



Figure 14: RCA water monitoring table at Riverview Park as part of the Rockin' the Rivanna Festival (09-30-17)



Figure 15: Rivanna River Company providing boats for Rockin' the Rivanna paddle (09-30-17)



# COMMUNITY OUTREACH



Figure 16: One of the recycled art installations as part of the Rockin' the Rivanna festival (09-30-17)



Figure 17: Inflatable raft that was part of our Rockin' the Rivanna paddle group (09-30-17)



Figure 18: Community out enjoying a nice day at Riverview Park during the Rockin' the Rivanna festival (09-30-17)

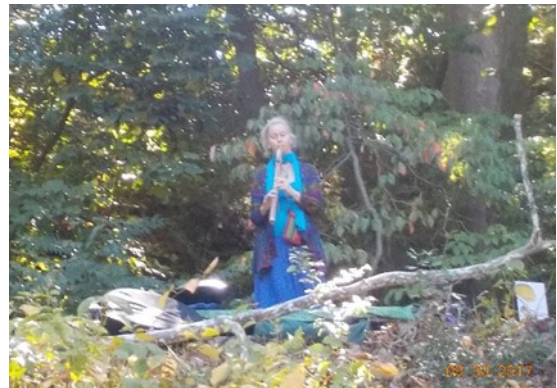


Figure 19: One of artists performing along the trails next to the Rivanna River as part of the Rockin' the Rivanna festival (09-30-17)



Figure 20: New River water level gauge on Free Bridge painted by Charlottesville Parks & Recreation (11-03-17)



Figure 21: Artist painting at Riverview Park during the Rockin' the Rivanna festival (09-30-17)

## LITTER/POLLUTION/SAFETY CONCERNS

While the amount of litter and pollution in the Rivanna has been reduced since we began the Stewards program, it still remains an issue that needs attention. On every paddle the Stewards complete, they perform clean-up of litter and other objects that are not intended to be in the water. The Stewards noticed that after heavy rains, the amount of trash in the River was significantly higher, which makes sense due to the heavy storm water volumes washing the trash into the water. Trees that came down during storms and get 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, boogie board, coolers, PFD, inner tubes). But there also were a wide variety of larger items found in and around the River as well, such as a piece of a car near Darden Towe Park, a landscape spreader near Riverview Park, a piece of farm equipment near Crofton, a large tank on the South Fork of the Rivanna, and a trailer near Milton.

### Main Litter Types in the Rivanna

- Beverage containers
- Plastic bags
- Food trash
- Fishing lures
- Styrofoam
- Sporting equipment
- Tires



One of the biggest issues the Stewards continue to come across is tires in the Rivanna. Most of these tires were buried in the Riverbed and have been there a long time. Despite previous efforts by the Stewards to remove the buried tires in the Rivanna, it is estimated that there are still probably on the order of 100 tires needing to be removed. Most tires are standard vehicle sized, but several are larger truck sized tires. One (1) tire was removed near Milton in August and five (5) tires were removed near Milton in November. In total, the Stewards removed 6 tires from the Rivanna River this year.





Figure 1: Trash from Free Bridge to Milton paddle (07-12-17)



Figure 2: Example of severely eroded bank on North Fork of the Rivanna River (05-07-17)

## LITTER REMOVAL

In all the Stewards estimate that they removed about **20 large trash bags** worth of litter, **6 tires**, and a **large trailer** from the Rivanna River this paddling season.

In addition to trash, sediment and pollution from runoff, downed trees, bacteria from dead animals, downed power lines, and any other safety concerns are all monitored by the Stewards. The Stewards helped to notify local authorities on several occasions of issues and concerns identified during paddle trips.

### Some of these included:

- Sediment build up on some of the boat access ramps
- Degrading condition of the Woodlands Rd boat access road on the Rivanna Reservoir
- Erosion issues at the Milton boat access stairs, eroded stream banks, downed trees blocking the River
- Algae found in the Reservoirs
- Downed power lines between Riverview Park and Milton
- Reporting areas of particular concern for trash and pollution issues.

## LITTER/POLLUTION/SAFETY CONCERNS

RCA Stewards worked with Rivanna River Company and Albemarle County Parks and Recreation to address the erosion issues at the Milton boat access location. Recently there had been a lot of vehicles driving down the dirt path to the boat access steps, and causing the area to become a mud pit that then would erode out the steps down to the Rivanna River and make the access less safe. The Rivanna River Company stabilized and improved the boat access steps at Milton this year which really helped significantly. Albemarle County Parks and Rec assisted the Stewards with getting a better fence and locked gate put up at Milton to keep vehicles from driving along the dirt road causing the erosion issues.



Figure 3: Dirt road above Milton boat access steps causing erosion issues (05-29-17)



Figure 4: New gate / fence installed at Milton to keep vehicles off of dirt road causing erosion issues (05-29-17)

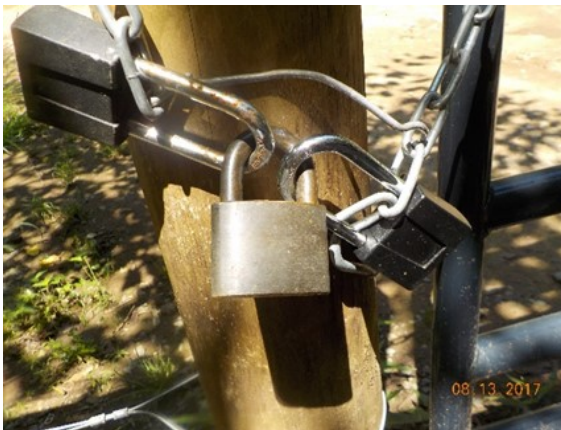


Figure 5: New lock installed on Milton Gate (08-13-17 )



Figure 6: Milton Gate closed and locked (08-13-17)



## LITTER/POLLUTION/SAFETY CONCERNS

After receiving a report from one of our RCA River Guardians, we looked into an issue concerning new rip rap installed just upstream from Darden Towe Park boat ramp at River right on a private property. After speaking with Albemarle County officials, we determined it was part of a sewer line repair performed by RWSA, and there was no cause for concern, as the project was completed properly.

In November we noticed there were power lines down in the Rivanna River near the I-64 bridge and Railroad bridge between Riverview and Milton. Chris Gensic from Charlottesville Parks and Recreation reported the issue for us to Buckingham Branch Railroad Company, and they were able to go out and remove the lines from the River for us.



Figure 7: Sedimentation on Darden access ramp (05-14-17)



Figure 8: Trash collected from Milton to Crofton paddle (05-29-17)



Figure 9: Trash found at bottom of trail at Reas Ford Rd (06-26-17)

## LITTER/POLLUTION/SAFETY CONCERNS

The Stewards also tracked progress on the new bridge construction project as part of the Berkmar extension road development, which is just below the Rivanna Reservoir Dam. To date, the Steward have not noticed any negative impacts on the Rivanna River from this construction project.

There continues to be significant litter and pollution issues on Schroeder Branch where it crosses under Rio Mills Rd (38°06.4"N 78°27'51.5.8"W). The Stewards have reported this to Albemarle County on several occasions, and the last time we visited the area there was some improvements with the removal of some of the trash piles we had seen there previously. One of the other locations that the Stewards have noticed the most issues with trash is at Reas Ford Rd. Every time the Stewards visit that location to paddle the Rivanna, there is significant amounts of trash thrown along the banks of the Rivanna, most of which looks to be from people fishing in the area, but there is also a lot of trash just thrown in the woods along the trail on the way down to the River as well.



Figure 10: New rip rap installed just upstream from Darden Towe boat ramp at River right reported to RCA by volunteer and determined to be RWSA pipe replacement project (11-03-17)



Figure 11: Downed power line in River at Railroad Bridge near I-64 Bridge between Riverview and Milton (11-16-17)



Figure 12: Chris Gensic from Charlottesville Parks and Recreation towing canoe with all the trash gathering during Riverview to Milton paddle (11-16-17)



Figure 13: Albemarle County Parks and Recreation dump truck filled up with all the trash removed from the Riverview to Milton paddle (11-16-17)



# TRAILER REMOVAL



Figure 14: Buried trailer in the River near Milton (07-12-17)

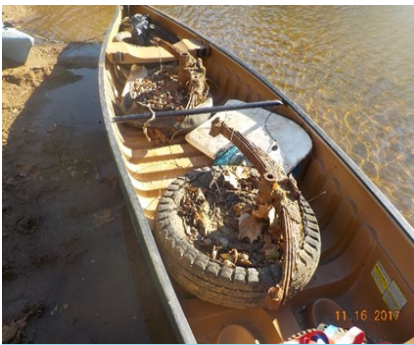


Figure 15: Wheel assemblies from trailer and other trash collected from Riverview to Milton paddle (11-16-17)

One of the most significant efforts the Stewards made this year was to coordinate getting a 20 foot long trailer removed from the Rivanna River. The trailer appeared to have been buried in the riverbed for many years, but the low water levels this year made it stick out above the water and was easily noticeable during one of the Steward's paddles this year. The trailer was located a little less than a mile upstream from the Milton boat access. The effort to remove the trailer required careful coordination with other organizations and ensuring that there were no negative impacts to the Rivanna River or banks. The successful removal of the trailer was achieved due to contributions from the following organizations:

Albemarle County Fire Rescue, Albemarle County Parks and Recreation, Charlottesville Parks and Recreation, and Luck Stone.

Due to water levels in the Rivanna, the size of the trailer, and the amount of effort to haul it down river to an easily accessible location, it took 3 paddle trips to fully remove all the pieces of the trailer. The first paddle trip occurred in late August of this year, and during this trip the trailer was pulled up from the riverbed, dragged to the nearby bank, and cut up into pieces for removal. The second paddle trip occurred in September, and floated the pieces of the trailer in canoes down to the Luck Stone property for removal. The last of the paddle trips occurred in early November, and involved floating the last pieces (2 wheel assemblies) of the trailer down river for removal at Milton.



Figure 16: Trailer standing up as it is being removed from the River (08-31-17) - Photo taken by Matt Ascoli from Albemarle County Fire Rescue Team



Figure 17: Trailer pieces after taken to the nearby bank and cut up with a saw (08-31-17) - Photo taken by Matt Ascoli from Albemarle County Fire Rescue Team



Figure 18: Trailer coming up out of the River (08-31-17) - Photo taken by Matt Ascoli from Albemarle County Fire Rescue Team

## LITTER/POLLUTION/SAFETY CONCERNS PHOTOS



Figure 19: Buried tire found on South Fork Rivanna (06-21-17)



Figure 20: Car at River Left just before Darden boat ramp (06-21-17)



Figure 21: Large tank found floating in the River (04-16-17)



Figure 22: View of River Flooding at Darden Towe Boat Ramp (05-25-17)



Figure 23: Spreader in the River near Riverview (09-30-17)



Figure 24: Farm equipment on the bank near Crofton (05-29-17)



## LITTER/POLLUTION/SAFETY CONCERNS PHOTOS



Figure 25: Another eroded bank on North Fork  
(05-07-17 )



Figure 26: Erosion of bank at Glenmore (05-29-17)

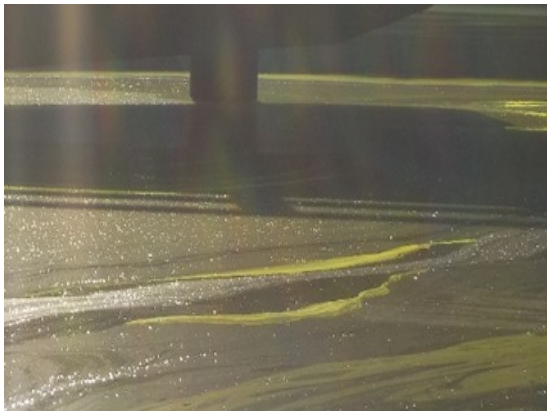


Figure 27: Algae growth near Woodlands Rd bridge  
on Rivanna Reservoir (08-19-17)



Figure 28: More algae growth on Rivanna Reservoir  
(08-19-17)



Figure 29: Sediment on Crofton boat ramp  
(05-29-17)



Figure 30: Muddy mess on dirt road at Milton  
(05-12-17 )

# ISSUES TO ADDRESS

Throughout our regular paddle trips on the Rivanna, the Stewards noted several areas that need future attention to make sure that the health of the River is maintained. Any items identified throughout the paddling season as being critical or urgent are addressed at that time. The items listed below have been identified as more long term needs that RCA thinks could improve the overall experience for anyone enjoying the Rivanna River, as well as improvement to the Stewards program as a resource for the community.

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

## *1. New River gauge on Rivanna River between South Fork Dam and Milton*

Currently there are two official United States Geological Survey (USGS) gauges on the River that provide real time data to interested community members on the USGS web portal. While this resource is great, the gauges are located near the Palmyra boat access point and on the North Fork of the Rivanna near Earlysville which do not provide the most accurate location information needed for the paddle locations most community members would access the River from near the City of Charlottesville. In order to provide a more holistic and accurate real-time data RCA would like to add at least one additional River gauge somewhere between the South Fork Dam and the Milton access point. The current gauges are operated by the Virginia Department of Environmental Quality so RCA will be partnering with this agency and beyond to implement this goal in 2018.

## *2. Better water testing equipment for Stewards to monitor DO, pH, Turbidity, and maybe add Nitrates and Phosphates.*

The Stewards currently test water quality on each paddle; this is accomplished using simple water testing tablets that gauge pH and DO levels and measuring turbidity with a simple eye test. Water temperature and general water conditions are also currently denoted. As RCA increases its bacteria and benthic monitoring programs the Stewards also have set a goal in 2018 to secure funding to purchase higher accuracy equipment to increase the level of testing/monitoring done during our weekly paddles. The data collected can then be used to better serve public officials and help inform the other monitoring programs RCA operates.



### ***3. Add one to two boat access points in needed areas of the Rivanna River***

The Stewards have identified a few locations along the Rivanna River that could benefit from increased public access. In the City of Charlottesville the River flows underneath Free Bridge along the Route 250 bypass; this area contains the Rivanna Trail which connects Riverview Park with Darden Towe Park and is frequently used by community members. A River access point near Free Bridge is a project currently being worked on with the City of Charlottesville and will continue to be developed in 2018. An additional River access point is being developed by Albemarle County near the new Berkmar Bridge that was recently completed over the Rivanna. RCA will continue to work with Albemarle County officials to bring this project to fruition in 2018. Pursuing a boat access point somewhere between the Palmyra access point and Columbia where the Rivanna's confluence with the James River is has been identified as a goal by the Stewards. This stretch of the River is 16 miles long and would benefit from an additional take out/put in to make this beautiful rural stretch of the River more accessible for the community. There is mostly private land along this stretch of River so finding a willing landowner to facilitate this goal can be difficult. This has been an ongoing pursuit for the Stewards over the last few years and will continue to be so.

### ***4. Promote community engagement by bringing more interested folks out on the Steward weekly paddles***

The Stewards lead RCA's biannual Sojourn paddles designed to get more folks out on the River. Our weekly paddles offer additional opportunities to get more people out on the River. RCA finds that the more the community is engaged with the River the more they pay attention to issues that help improve the health of the watershed. In 2018 the Stewards will work to develop new ways to engage the public with their weekly paddles.

### ***5. Connect private landowners with resources to assist with bank stabilization along the Rivanna River***

Areas of the Rivanna that are particularly susceptible to bank erosion are identified throughout the paddling season. The Stewards will work to identify programs offering funding sources for riparian buffer improvement projects in the watershed. Landowners will then be identified along the Rivanna that could benefit from these funding programs and efforts will be made to connect the two together.



# RIVANNA

## CONSERVATION ALLIANCE

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