



## A Tale of Two Rivers: Investigating how the Nanticoke and Wicomico Rivers have shaped Wicomico County

Dates: June 25-29, 2018

*Course Leaders	Mentor Teacher
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*Region/Audience	*Location(s)
Wicomico County Teachers	Nanticoke River, Salisbury and Tylerton

### \*Course Description

Throughout this course, all participants will engage in hands-on, field-based investigations into subjects of natural history and ecology. We will also examine issues of biodiversity, sustainability, and responsible management of natural resources in the context of the Chesapeake Bay Watershed.

Wicomico County's changing landscape has largely been influenced by its local waterways. This course will explore the Nanticoke and Wicomico Rivers in order to further investigate how the county and its waterways have influenced one another. We will then take those connections and compare them to the interactions between the community of Tylerton and their local waterway, the Chesapeake Bay.

This course will be a combination of two local day trips and three days overnight on Smith Island. Early in the week, we will investigate the Nanticoke and Wicomico Rivers and surrounding towns to look at the river as a system and a highway for industry. Wednesday through Friday, we will take an in-depth look at Tylerton, the smallest town on Smith Island, as well as the surrounding waters to look further into natural/social system interactions. Upon completion of this course, Wicomico County teachers will be provided ideas and local resources to augment and enhance their classroom lessons.

### Learning Objectives

As a result of this course, teachers will be equipped with ways they can use local environmental resources as a context for learning in the classroom. Teachers will also gain a greater understanding of their local history, ecology and economy and its impact on their local waterways. The final goal of this course is for teachers to be able to design classroom stewardship projects in addition to a MWEE field experiences.



### Standards-based alignment

This course has been designed to support the following standards:

#### Maryland Environmental Literacy Standards

1. *Environmental Issues*
2. *Interactions of Earth's Systems*
3. *Flow of Matter & Energy*
4. *Populations, Communities, and Ecosystems*
5. *Humans and Natural Resources*
6. *Environment & Health*
7. *Environment & Society*
8. *Sustainability*

#### Next Generation Science Standards (NGSS)

- o *LS2.A Interdependent relationships in Ecosystems,*
- o *LS2.C Ecosystem dynamics, functioning and resilience,*
- o *LS4.D Biodiversity and humans,*
- o *ESS3.C Human Impacts on Earth Systems*

#### College, Career, and Civic Readiness Standards for social studies (C3)

- o *Dimension 2: Applying Disciplinary Concepts & Tools: Civics*
- o *Dimension 2: Applying Disciplinary Concepts & Tools: Geography*

### Course Materials:

**Island out of Time** Tom Horton: This will provide an in-depth look at the community of Smith Island, accurately setting the stage for our field investigations.

**Life in the Chesapeake** Lipson and Lipson: Field guide to provide any questions during investigations

<http://www.reimaginel Laurel.net/>

Detailing the revitalization of Laurel, DE

<http://nanticokeriver.org/>

The website for the Nanticoke River Alliance

<https://www.smithislandunited.com/>

Website for Smith Island United, including the "Smith Island Vision Plan"

<http://www.lynnTomlinson.com/hollandislandhouse/>

Ballad of Holland Island. Once a thriving fisherman's island, this video is a beautiful piece on how their culture has disappeared.

<http://hightidedorchester.org/>



New video from Tom Horton and Dave Harp about the effects of climate change on Dorchester County. Check out the trailer and the 16 minute version.

## Final Project

### Design an *Environmental Literacy Learning Experience* using the **Environmental Literacy Model (ELM)**

The goal of this assignment is for Chesapeake Classrooms participants to apply their understandings of environmental literacy toward meaningful learning experiences for their students. Teachers are asked to use the Environmental Literacy Model to construct and communicate a vision for how geospatial technologies, including ArcGis and Story Maps, may be used to help students understand how their local environment has changed over time.

The Environmental Literacy Learning Experience Project is made up of two assignments:

**1. ELM Curriculum Integration “Planning Tool”**

This document enables teachers to demonstrate how they might translate the knowledge and skills developed through Chesapeake Classrooms into meaningful learning experiences for their students. The ELM Curriculum Planning Tool consists of three parts: Curriculum Anchor, Issues Investigation, and Stewardship/Civic Action.

**2. ELM “Capture Sheet”**

This capture sheet will serve as a summary of your *Environmental Literacy Learning Experience*

All materials should be submitted through SharePoint by September 1st, 2018.

## Course Schedule:

**Driving Question:** How have the Nanticoke and Wicomico rivers shaped the culture, industry and ecology of Wicomico County and what is their relationship to the Chesapeake Bay?

### Day 1: Monday, July 25th

*How healthy is the upper Nanticoke and what role does it play in Laurel, Delaware’s economy?*

**8:30 am:** Meet at Phillips Landing State Park, DE (Phillips Landing Park in Google Maps)

We will be canoeing to Cherry Beach Park in Sharptown. Along the way we will be exploring the health and habitats of the Nanticoke river. We will be seining on the banks of the Nanticoke in Sharptown as well as eating lunch at the park pavilion.

**2:00 pm:** Meet in Laurel, DE (115 Delaware Avenue, Laurel, Delaware)

We will be meeting with Ed Lewandowski, manager of the Laurel revitalization project. After presentation we will take a town tour and discuss past to present uses of the town and industry and how the Nanticoke River has impacted industry. We will wrap up around 4 pm.

**What to bring:** Please bring teacher guide and Life in the Chesapeake textbook. We will be outside and inside for different portions of the day. Watch the forecast and dress to be



comfortable. Hat, sunscreen, and lightweight long sleeve shirt offer great sun protection. In the morning it will be important to have clothes appropriate for canoeing. Closed-toed shoes are required, old sneakers or keens are best. There will be time to change clothing in between canoeing and afternoon activities, so a change of clothes is strongly encouraged.

Please bring a reusable water bottle for the whole week, we will always have a cooler of ice water for refills. Bring your own lunch, snacks will be provided.

## **Day 2: Tuesday, July 26th**

*How does the river change ecologically over space and historically over time?*

**8:30 am** Meet at Vienna MD waterfront (114 Water St, Vienna, MD)

Spend the morning on Chesapeake Bay Foundations boat, Susquehanna. We will be travelling up and down the Nanticoke River, investigating underwater species big and small as well as land use of the Nanticoke River. We will be joined by Dr. Christina Bradley from Salisbury University. We will be arriving back in Vienna around 12 pm for lunch in the pavilion.

**1:30 pm** Meet at the Ward Museum (909 S Schumaker Dr, Salisbury, MD)

Meet with Aurelio Giannitti, Education Director at the Ward Museum of Wildfowl Art. We will take a self-guided tour throughout the museum as well as learn about wildfowling in Wicomico County and the Wicomico River as well as various activities to take back to the classroom. We will wrap up around 4 pm, answering any questions you may have about the next few days on the island!

**What to bring:** Please bring teacher guide and Life in the Chesapeake textbook. Dress to be comfortable according to the forecast. In the morning we will be on the boat where closed-toed shoes are required. Hat, sunscreen and long light layers are great for sun protection. Please pack a lunch and reusable water bottle. We will provide snacks throughout the day as well as cold water and various drinks.

## **Day 3: Wednesday, July 27<sup>th</sup>**

*What are the connections between the rivers, Smith Island and the Chesapeake Bay?*

**9:00 am** Meet at Cedar Hill Marina in Bivalve, MD (20945 Harbor View Rd, Bivalve, MD)

This is where our journey to Smith Island begins! We will park cars and load up on the boat to head to Smith Island. Along the way we will eat lunch, perform various water quality investigations, and make observations about our changing landscape.

### **Afternoon**

We will get settled in at our new home for the next 2 days, meet the Smith Island staff, learn the basics of the island and begin our adventures!

**What to bring:** Katy will demonstrate how to pack for the islands!

## **Day 4-5: Thursday, July 28<sup>th</sup>**

*How do Smith Island communities interact with their local environments?*

**Friday, July 29<sup>th</sup>**

*What does the future hold for the towns and habitats of Smith Island, Tangier Sound and the Rivers of the Eastern Shore?*

### **Smith Island time!**

The time on the island is weather, tide, group dependent. No definite schedule can be made in advance. But over these two days we hope to set crab pots, go into the marsh, investigate the town, canoe, scrape for soft crabs, eat delicious local foods, etc etc. Katy will also lead us in some activities that are designed for the classroom, as well as provide info on the



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We will be loading up around noon on Friday and heading back to Cedar Hill Marina. We should be back to our cars mid-afternoon.

<b>Additional Resources:</b>

<b>Course Evaluation</b>
Participants are given an opportunity to complete a comprehensive evaluation after the course. Participants will receive an invitation to complete the course evaluation through Survey Monkey on July 28 <sup>th</sup> . We use the information to strengthen our programming and we appreciate your feedback.