

Lower Chickahominy River Scenic River Assessment Report



Prepared By
VCU ENVS 591 Scenic Resource Policy and Assessment
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I. REASON FOR STUDY

The Scenic Resource and Policy Assessment course at Virginia Commonwealth University has compiled the following report of the Lower Chickahominy River. The course was led by Dr. James Vonesh, assistant director for VCU's Center for Environmental Studies, in association with Lynn Crump of Virginia's Department of Conservation and Recreation. The class used the Lower Chickahominy as a case study to learn the process of evaluating and designating a scenic resource.

The aim of the evaluation was to gain experience conducting scenic resource field assessments, as well as to understand regional community and state level implications of scenic designation. In preparation for the field assessment, the class learned the basis for comprehensive scenic evaluation in addition to the cultural, ecological and economic climate of the Lower Chickahominy region. Several in-class lectures featured experts in the fields of viewshed management, geographic information systems, natural resource economics, and environmental law, creating a complete knowledge base to be pulled upon during assessment.

A portion of the Chickahominy River stretching from Route 360 downriver to the Hanover-Henrico-New Kent County line has already been designated as a Virginia State Scenic River. The class intended to re-evaluate this designated section according to the VA state code section (§10.1-410.1); however, a recent hurricane caused dangerous flooding on the section, forcing the field evaluation to a lower, safer, stretch of the river. The section that was able to be evaluated starts immediately below Walker's Dam in New Kent County and ends ten miles downstream at River's Rest Marina in Charles City County. This section contains the Captain John Smith Chesapeake National Historic Trail and the Chickahominy Water Trail. This is thought to be where Captain John Smith, one of the original Jamestown leaders, was captured by Chief Powhatan (NPS). In addition to its historical values, this section of river provides ample recreational opportunities, offering the community access to the river's scenic beauty.

A. Benefits of Designation

A Virginia Scenic River Designation provides river stakeholders with many benefits including the following:

- The program is recognized by the Federal Energy Regulatory Commission, which ensures that scenic qualities of designated rivers are considered during licensing of federal projects

- The construction of any dam or impediment to the natural flow of a designated river must first be approved by the general assembly (§ 10.1-407)
- Local stakeholders have more input in the decision-making and management of their section of river
- The Department of Conservation and Recreation can help localities with an interest in protecting their designated rivers by assisting them in developing planning tools
- If localities choose to participate, landowners along the designated section can benefit from land use tax credits
- Designation symbolizes public recognition of a river's scenic qualities
- Property use by riparian landowners is not changed following designation (§ 10.1-408)
- State agencies are required to consider a designated river section's scenic assets during planning and permitting processes (§ 10.1-402)
- The scenic river evaluation conducted during the designation process provides documentation of a river's scenic qualities prior to any future alterations to them
- By promoting the scenic designation local business can benefit economically through increased recreational and ecotourism
- Opportunity for the locality to create a committee to help with the management of the river

B. Virginia Scenic River Designation Process

Scenic designation is a collaborative effort of the Virginia Department of Conservation and Recreation, cooperating state agencies, local and state governments, and Virginia's citizens with local support being a critical component of the process. Prior to the DCR assessing a potential scenic river section it must first receive a letter from a local government representative requesting an evaluation (Crump). The Virginia Scenic Rivers Act also provides an opportunity for community input during a public hearing before the DCR submits a recommendation of designation to the Governor and General Assembly (§ 10.1-403).

As part of the designation process, a scenic river evaluation must be carried out. Existing data pertaining to the potential scenic river are collected from cooperating state agencies, a review of relevant literature and maps, as well as geographic information systems to assess the qualities of the potential river segment. In addition to the desktop analysis a field study, where a team navigates and observes the entire section of river, is conducted.

The evaluation provides a numerical score, based on 14 criteria, of which a minimum value must be met to qualify for scenic designation. The evaluation criteria include Stream Corridor Vegetation, Modification to the Streambed and/or Stream, Human Development of the Visual Corridor, Historic Features, Landscape Diversity and Views, Quality of Fisheries, Natural Wildlife and Plants Along the Corridor, Water Quality, Parallel Roads, Crossings, Special Features Affecting the Aesthetics, Overall Aesthetic Appeal, Public Recreational Access, and

Significant Permanent Protection. The criteria were chosen to assess the quality of the scenic resource, and a summary of each can be found in Section IV of this document.

It is the DCR's responsibility to assess rivers under consideration for scenic designation and to report those that qualify to the Governor and General Assembly under The Virginia Scenic Rivers Act (§ 10.1-401). This report satisfies those obligations.

II. SUMMARY OF FINDINGS

The Chickahominy River is an 87 mile long Coastal Plain river and a major tributary of the James River Watershed which ultimately flows into the Chesapeake Bay. The river originates in Henrico County and travels through Hanover, New Kent and Charles City counties before reaching its confluence with the James River. An evaluation conducted by the VCU Scenic Resource Policy and Assessment Class of the Lower Chickahominy in New Kent and Charles City counties demonstrates that the potential river segment qualifies for designation into the State Scenic Rivers Program.

This evaluation determined that a ~10 mile segment of the Lower Chickahominy River qualifies for State Scenic River Designation. This stretch of river, from Walker's Dam in New Kent County to River's Rest Marina in Charles City **is being recommended for designation.** The lower Chickahominy River features vast marshes and cypress trees along much of its shoreline. It is a nationally recognized section of river for its largemouth bass fishery, and also provides excellent opportunity for fishing yellow perch, white perch, and black crappie. It's home to Atlantic Sturgeon, an endangered species, as well as two federally threatened species. A nationally recognized historic water trail runs through this section of the lower Chickahominy River, and it features several other points of historical significance.

For this designation process to move forward, the local governing bodies of New Kent and Charles City counties must show support for the designation by approving resolutions endorsing the designation. The local boards will then have a state legislator sponsor a bill to designate the river segment as scenic.

III: CORRIDOR STUDY MAP

The proposed section of the Chickahominy is a ten-mile section of river flowing predominately east through Charles City and New Kent counties (Fig.1). Shortly after the section takeout and marina is the confluence with the James river, of which the Chickahominy is a major tributary. This report focuses on the ten-mile section from Walker's Dam in New Kent County to River's Rest, a marina in Charles City. A GIS map shows the rivers corridor through the proposed section.

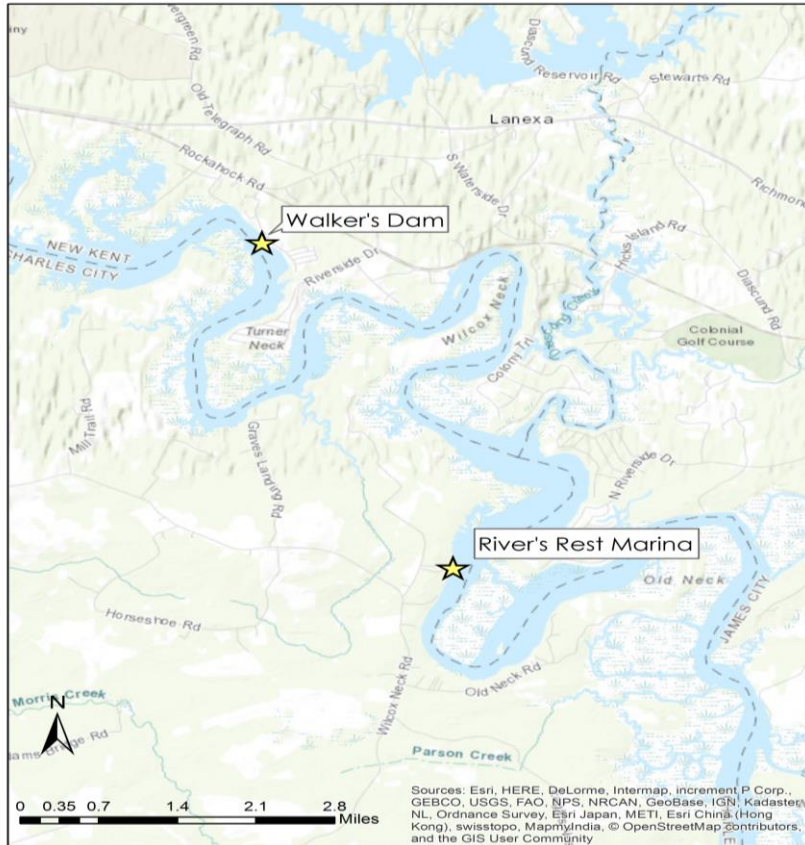


Figure 1: Map of Lower Chickahominy River through New Kent and Charles City Counties from Walker's Dam, to River's Rest Marina.

IV. ENVIRONMENTAL ANALYSIS

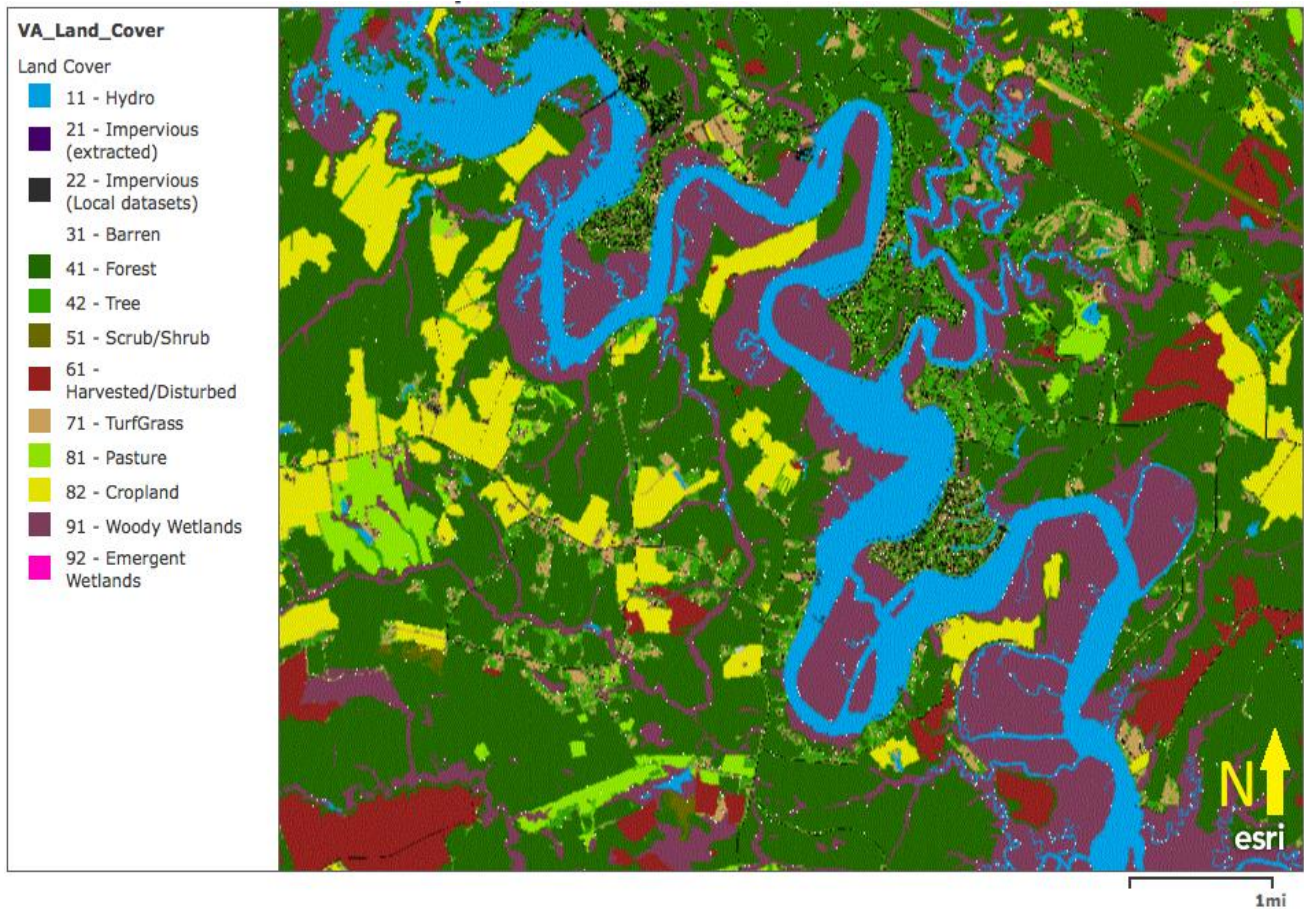
This section flowed heavily through forests and wetlands with no signs of stream modifications. There were no signs of visible water pollution and no signs of industrial or commercial development, only river houses. There were signs of minimal land pollution, including a tire and a boat motor located on two small sandbars. Downstream of Smith Island, the most beautiful cypress trees were spotted; we learned about their knees and how they help stop sediment loads. Historical areas, such as the Chickahominy Water Trail, are important to history being nationally significant.

This section is overcome with lily pads, swamps full of larger cypress trees, and a large diversity of other plant species. This river holds multiple species that are protected. Bald eagles were spotted, nests included, as well as a sighting of sturgeon. We started canoeing at the base of Walker's Dam, and also came across multiple fisherman and speedboats and learned that this river is known for having an excellent fishery. This river was rated a continuous area of wetlands, with little change in views. Water quality had high sedimentation and bacteria levels, as well as being able to see one small stretch of parallel road. Due to the passing hurricane of the time, the

area was disturbed with the remnants of a high water line. Lily pads were muddy and some crushed, trees overturned, and multiple duck blinds were in bad condition (more than likely due to the weather conditions over time). Overall, the aesthetic beauty of this river was plentiful and flourishing with little change in landscape, but the land has changed due to development around the river.

A. Stream Corridor Vegetation

This section of the Chickahominy River primarily flows through woody wetlands and forested areas, as defined by the Virginia Geographic Information Network (Fig. 2). Much of the river is lined with mature and large Bald Cypress and Blackgum (tupelo) trees, with some pines, Red maples, and smaller Hazel alders mixed in. Plant coverage is widespread and consistent along the banks with only a few small areas containing only grass or shrubs. Yellow pond lily and pickerelweed are very common in the shallows along the riverbanks. These aquatic plants provide shade under the water for fish to congregate in. Watts Point is particularly notable because one can easily paddle their canoe or kayak through a thicket of cypress where the water ranges from a few feet to a few inches deep.



Virginia Geographic Information Network (VGIN) | Virginia Geographic Information Network (VGIN) | VA-DCR, Natural Heritage | VITA, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA

Figure 2: Land cover along and around the studied section of the river. Most of the shoreline is covered in woody wetlands or forest, with a few small sections of cropland and pasture adjoining the river between Wilcox Neck and Turner Neck.

Starting from Walker’s Dam and moving down the river towards Rivers Rest Marina, there is a noticeable difference between the eastern and western banks in the amount of naturally vegetated buffer at least 100 feet wide (shown in red in Fig. 3). The eastern bank winds around the Chickahominy Shores community on Turner Neck and in the community, there are many houses and properties against the water with minimal tree coverage. However, grasses and smaller natural plants are still prevalent. The rest of Turner Neck is undisturbed wooded wetlands. Beyond Colonial Harbor Marina there are a few other residential areas with buffers less than 100 feet.

On the western bank the largest area without a natural buffer is along Wilcox Neck where cropland is within 40-80 feet of the water (shown in green in Fig. 3). There are a few places between Wilcox Neck and Turner Neck where land classified as pasture comes to within 100’ of

the water, however there is currently no significant raising of livestock in any of them. These areas are shown in light green in Fig. 1. Overall on the eastern shore there is nearly 4 miles of shoreline without the vegetation buffer while on the western shore only 0.5 miles is not buffered. In total, just over 20% of the shoreline lacks the 100-foot buffer. Most of the river is surrounded by healthy and vibrant vegetation which will fluctuate throughout the year and continue to provide scenic views and beauty.



Figure 3: Stream Corridor Vegetation Buffers. The red and green lines show areas without a 100' wide natural vegetation buffer on the shoreline. The blue line is the route taken for this Scenic Assessment

B. Riverbed and/or River Flow Modifications

There are no manmade structures that impede the flow of the river along this section. Walker's Dam is near the beginning of the section, but is not included. The Thorofare Canal (Fig. 5) falls along this section and allows boaters a shortcut around Big Marsh Point, but natural vegetation

has grown around it and it is well established. It looks like a natural part of the river, as there are many small naturally offshoots. There are many constructed duck blinds (Fig. 4) in various states of condition, however they pose no obstruction to the flow of the river or to boat traffic.



Figure 4: An image of one of the larger duck blinds found along the section of the lower Chickahominy River being assessed.



Figure 5: This map displays modifications to flow along the Chickahominy River, like The Thorofare labeled in red, and historical features, like Cole's Ferry and Smith Island.

C. Human Development

Urban and rural development are evaluated separately in this section. Urban development encompasses city and town related commercial and industrial structures, while rural development refers houses, cabins, barns, industrial buildings or clusters. The scenic assessment only takes into account the portion of these structures that are visible during full leaf foliage.

On the Lower Chickahominy River, there is no significant industrial or commercial development visibly hindering scenic quality or recreation experiences. However, residential areas are frequent and evident (Fig. 6). Surrounding riverside communities sprawl to the banks of the river and are represented by a parcel map (Fig.7). On average, there is at least two structures or clusters (up to five dwellings or other structures located immediately adjacent to one another) per mile of the visual corridor. There are a few marinas featuring restaurants and campgrounds along the river such as Rockahock, Colonial Harbor, and River's Rest, but these buildings are generally set back from the shore or situated on an inlet.



Figure 6: Image of a typical residential cluster along the river section.



Figure 7:
Map of

addresses and tax parcels along the Lower Chickahominy.

D. Historic Features

Established in 2006, Chickahominy Water Trail, which is a leg of the Captain John Smith Chesapeake Historic Trail, runs through the entirety of this section of the Chickahominy River and well beyond. It is a nationally recognized water trail and holds great significance for early U.S. history.¹ The Chickahominy River is also an important aspect of Indigenous culture. Seven different towns inhabited by the Chickahominy Tribe were marked on this section of John Smith's map. The Chickahominy peoples used the river as their main source of transportation. Smith Island, where John Smith was supposedly captured by Native Americans, also falls along this section of the Chickahominy River. The previously mentioned Thorofare Canal is also worth historical mention, as it is rumored that slaves dug out the canal sometime during the Revolutionary War. During the Civil War, the vast marshes along the Chickahominy River prevented the Yankees from capturing Richmond sooner. Cole's Ferry (Fig. 8) was a widely used location up through the Civil War to ferry supplies across the river with pontoon boats. Although none are state or nationally registered, many other historic lodges, houses, and boat landings or crossings fall along this section of the Chickahominy.²



Figure 8: An interpretive sign found along the Chickahominy River containing information about the water trail.

¹ The water trail follows the path of John Smith as he traversed Virginia's waterways. The Chickahominy River was used heavily by Native Americans and early settlers for transportation and trade. Without this crucial relationship, the settlers in Jamestown may not have survived.

² Fish House lodge, Poplar lodge, Oak Tree Lodge, and Pine lodge are found on this section. Along with Potter's Field, Peace Hill Neck, and McClellan's Bar.

E. Landscape

This section of the Chickahominy River is a tidal freshwater river beginning north of Richmond, VA. It begins parallel to the James River with a deciduous forested floodplain and becomes brackish in its lower reaches where it joins the James River and eventually flows into the Chesapeake Bay. The river naturally separates the counties of City of Richmond, Henrico, New Kent, Charles City, and James City. The section of interest, the lower Chickahominy River, begins at Walker Dam and is bordered by fresh-to-brackish wetland plants and cypress trees. The landscape is mostly flat and open in this section and provides a broad view throughout the meandering channel.

F. Quality of Fishery

The Chickahominy River is known for its excellent-quality fishing opportunities. As a tidal river the Chickahominy is dynamic, with fluctuating water levels sensitive to floods and tides. For the 2017/2018 fishing season, the Chickahominy River and the James River were both rated first for best largemouth bass fisheries by the Virginia Department of Game and Inland Fisheries. In fact, the Chickahominy is a nationally significant largemouth bass fishery, providing anglers with an exceptionally high catch rate for largemouth bass in the 1-3-pound range. Juvenile largemouth bass recruitment into the adult class remains strong, indicating a perpetually robust fish population. During the scenic river evaluation, almost all anglers were fishing in bass boats specialized for largemouth bass fishing (Fig. 9).



Figure 9: Anglers in a bass boat seeking largemouth bass on the Chickahominy River.

Introduced channel and blue catfish are in great abundance in the Chickahominy and provide thrilling fishing experiences for sport fishers. Other species, such as black crappie, yellow perch, chain pickerel, and carp are catchable at particular seasons. Exciting species of “living fossil” fish such as Atlantic sturgeon, longnose gar, and bowfins are native to the Chickahominy, with sturgeon being a federally-protected species. Some historically common species such as river herring and alewife currently are under a fishing ban in order to restore the dwindling species. Conservation efforts may prove effective at returning these prey-fish to their former numbers in this predator-heavy river.

G. Special Natural Fauna

The Chickahominy is home to a variety of significant species, recognized at both federal and state protection levels, which are identified by the The Department of Game and Inland Fisheries (DGIF) Fish and Wildlife information service. This section of the river is inhabited by Atlantic sturgeon, a federally endangered species, ranked at global and state level as S2 and G3, meaning there are 6 to 20 estimated populations left in the state (Fig. 10). The river is also home to two federally threatened species, the Red Knot and the Northern Long-eared Bat. It is known or likely that the river is home to state recognized endangered species including the Black Rail (S1/G3), of which less than 5 populations are estimated statewide, and three additional species of Bat, as well as state recognized threatened species such as Mabee’s Salamander, Henslow’s Sparrow, and Loggerhead Shrike (S1/G4) also estimated to exist in less than 5 populations statewide.



Figure 10: Atlantic Sturgeon breaches in Virginia (West, 2018).

The edges of the lower Chickahominy are abundant with small marshy creeks featuring Bald Cypress (Fig. 11). The Bald Cypress- Mixed Tupelo Intermediate Swamp is ranked at the S3/S4 level, meaning while it is abundant in some areas, it is limited in range, and outside factors may increase its vulnerability in the long term. Aquatic plants such as pond lilies, arrow arum, and pickerelweed are also frequent. In addition to the birds listed above, the Center for Conservation Biology maps Bald Eagles nests throughout Virginia and identifies at least 5 nests along this river section.



Figure 11: Bald Cypress lining river corridor at Watts Point.

H. Water Quality

The water quality on the Chickahominy is generally good, but has high sedimentation and bacteria levels and low pH and Dissolved Oxygen. The evaluation criteria specify that the river is graded on its visible pollution levels, not any chemical makeup or unseen contaminant. The level of litter observed on the section was remarkably low considering the amount of traffic it sees on a daily basis and there was no visible pollution. The Chickahominy has moderate turbidity and high sedimentation. Turbidity refers to the amount of suspended organic and inorganic material whereas sedimentation refers to the amount of sediment or eroded earth that has gotten into the river. The sedimentation along with the finish quality of the Chickahominy visibility into the water (JRW).

In 2010 the Chickahominy River did not meet water quality standards and is now undergoing an action plan to evaluate Total Maximum Daily Load. Discharge is strictly limited on the river because it is used as a water source for Newport News. The water quality is enhanced by the wetlands and is generally safe for swimming and fishing.

I. Parallel Roads

There is approximately 400 feet of South Waterside Drive visible from this particular section of the Chickahominy River (Fig.12). Based on the amount of residential development along this section of the river, significant residential and developmental noise was to be expected during the canoe evaluation. During the actual assessment, there was minimal car noise and little to no car visibility while on the river. There is approximately 1,000 feet of the CSX Transportation Railroad visible from this particular section of the Chickahominy River. Train noise was much lower during the evaluation than was initially expected. There is less than 3% of parallel roads within 300 feet of the designated 10-mile section. The yellow shaded area gives a general idea of how much of the road and railroad can be seen from the river.

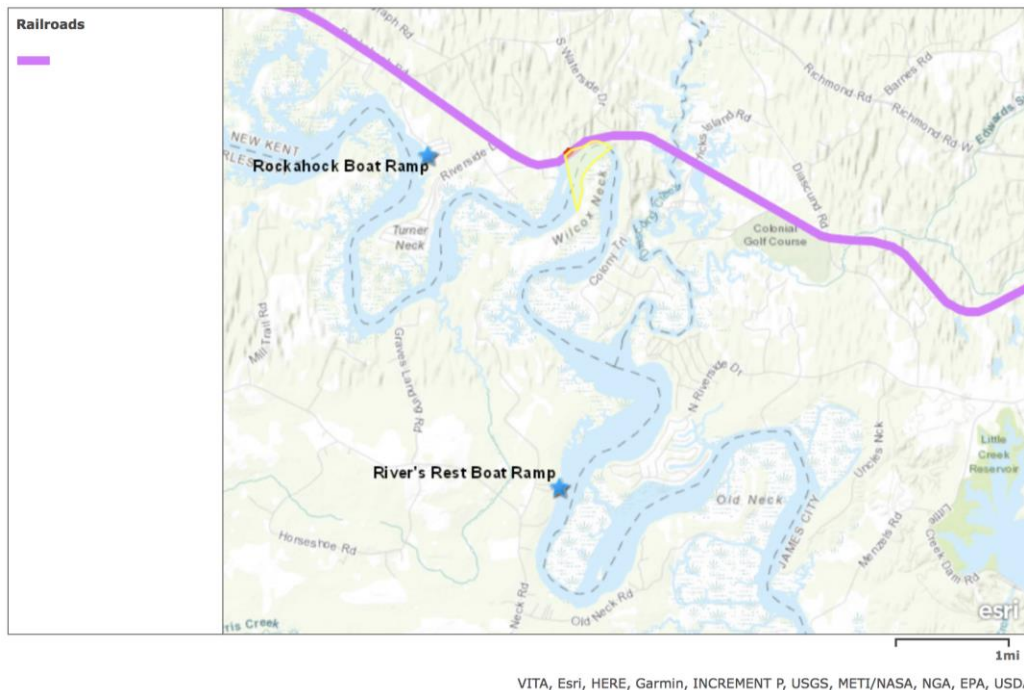


Figure 12: Map of Parallel Roads Along the Chickahominy River

J. Crossings

Roads, railroads, bridges, pipelines, power lines, and communication lines all qualify as crossings. These are things that cross over the river and create a visual impact on the river corridor. Crossings may not be as intrusive as some other forms of human development such as, parallel roads, industrial developments and sections of housing. On the reviewed section of the Chickahominy River there were no crossings. For a majority of this section there was only development on one side of the river. Since the other side was mostly undeveloped riparian forest there were no crossings.

K. Special Features Affecting River Aesthetics

This section of the Chickahominy has a winding corridor that gives a unique feel to visitors as they travel the river. The bends in the river provides for a higher variety of foreground views but doesn't allow for many background views (Fig.13). Even though human development is prevalent among some parts of the corridor the windiness hides some of the development because around each bend your view is altered. The width of the river does not stay consistent throughout this section. The tributaries of the river offer the chance to experience a narrower river corridor.



Figure 13: Canoers paddling around a bend in the Chickahominy River.

The Chickahominy River boasts bald cypress trees along the edge of the river in many areas (Fig 14). The trees cover a significant amount of the shoreline. In addition to the fully visible trees there are also cypress knees that poke out of the water. This adds diversity to the view of the marsh land adjacent to the river.

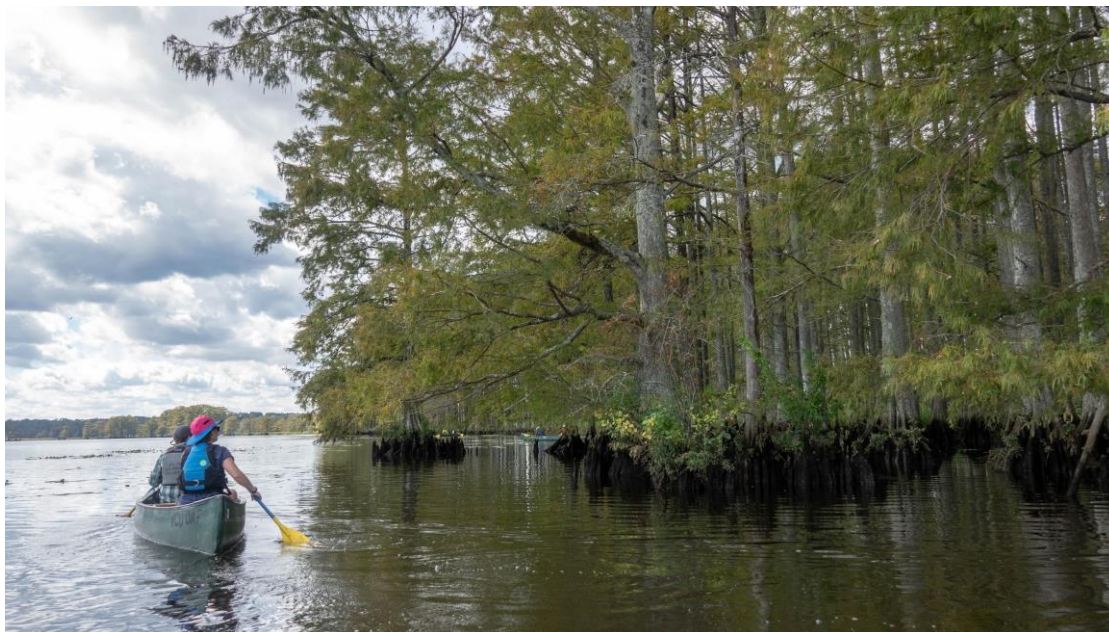


Figure 14: Clusters of bald cypress trees in the Chickahominy River.

Adjacent to Colonial Harbor Marina, there is an island. Smith Island is a small island in the middle of the river corridor (Fig.15). This distracts from some of the industrial development at the marina that would typically affect the view. This also allows for unique recreation activity because paddlers, boaters, and swimmers can peruse the island.



Figure 15: A Google Maps image of John Smith Island and River's Rest Marina.

Along the side of the river there are some sandy banks with a small cliff separating the waters edge and the rest of shore (Fig 16). This section has different foliage than the other marshy sections filled with cypress trees. There was holly and other types of trees that were visible on this river bank. This is not the most common feature though. Marshes dominate one side of the river while grass and development dominate the other.



Figure 16: Small cliff and sandy bank along the river

L. Public Recreational River Access

There are four main access points on this section of the Chickahominy River they are, Rockahock, Riverside, Colonial Harbor, and Rivers Rest (Fig. 17). Most of these charge a small fee averaging around \$10 for use. Rockahock is very developed with an event space, camping, a restaurant, and ample parking. It is good for motorboats and canoes/kayaks but may not be a good place to swim. Riverside marina is a smaller access area, it has a campground and a bare-bones boat launch. Colonial Harbor was the only marina without a fee, it was not very busy and was less developed. Rivers Rest was similar to Rockahock in that it had a restaurant, but it was not as spacious as the first marina. Rivers rest had a large boat storage area at the front with many large yachts. Along with these marinas that anyone could access (for a fee) there are many privately owned docs and river houses where homeowners can access the river.



Figure 17: the five main river access points along this section of the Chickahominy. Rockahock, Riverside, Colonial Harbor, and River's Rest.



Figure 18: Photos from left to right, Rockahock, Colonial harbor, Riverside, and River's Rest.

M. Land Conservation

In 2007, Wilcox Neck was permanently preserved by Elizabeth and John Bocoock as a conservation easement. Wilcox Neck is a *private* conservation easement. The Wilcox Neck easement that overlaps the evaluated section is shaded in yellow (Fig.19). Approximately 27% of the designated section is within the conservation easement.

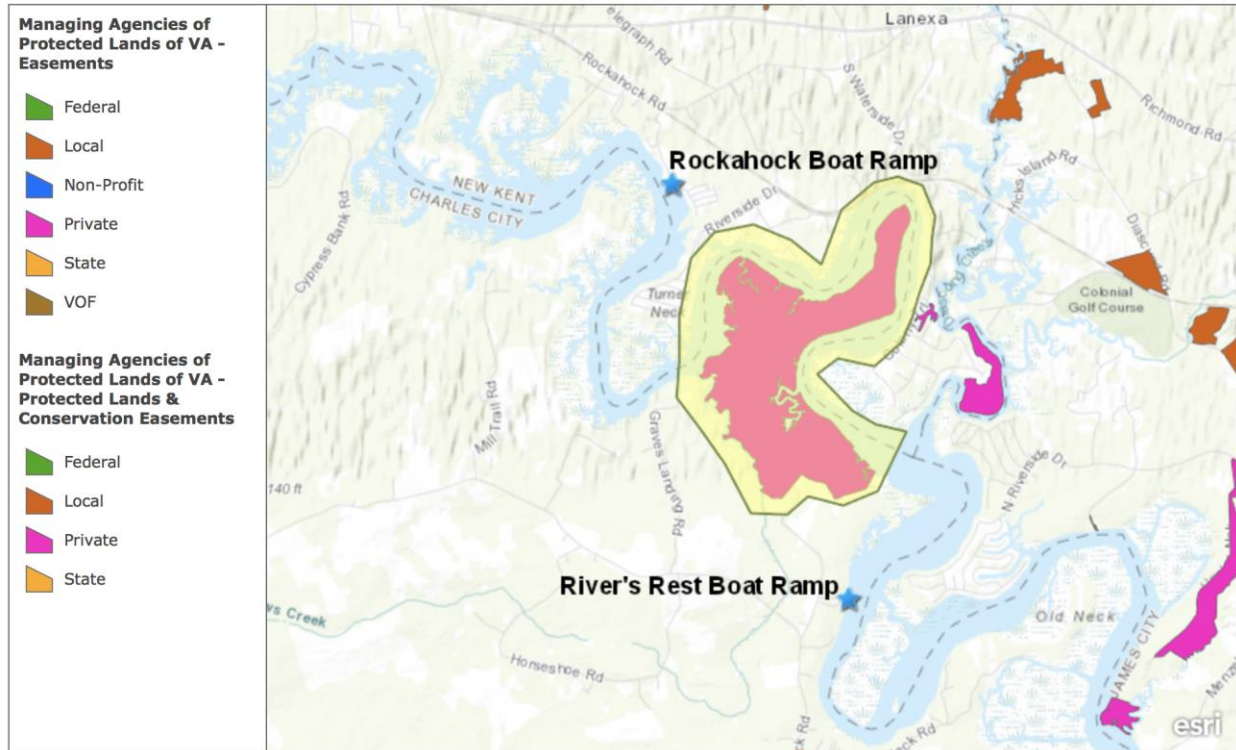


Figure 19: Map of Chickahominy River Protected Lands & Conservation Easements

V. LAND USE AND OWNERSHIP

Much of the assessed section is lined by woody wetlands protected by the Tidal Wetlands Act. There is much more residential development on the New Kent county side concentrated in a few communities that are adjacent to the protected wetlands, leaving no room for new urban development along that side. Homes visible from the water are well-maintained and pleasant to look at. Outside of the residential areas in New Kent county the land is mostly privately owned and zoned as agriculture, but it remains mostly covered in vegetation, either as forests or wetlands. On the Charles City county side nearly all land is zoned for forestry or agriculture from Walker's Dam to just past Watt's Point. The conservation easement covering Wilcox Neck and the extensive wetlands both upstream and downstream of it will ensure the land remains protected and beautiful for years to come. Both New Kent and Charles City counties make

extensive mentions of the river, as well as its conservation and preservation in their most recent Comprehensive Plans.

VI. CONCLUSIONS AND RECOMMENDATIONS

The Lower Chickahominy River serves as the border between New Kent, Henrico and Charles City counties. Designation for the Lower Chickahominy River into the State Scenic Rivers program is recommended by this assessment from Walker's Dam in New Kent County, downstream to River's Rest Marina in Charles City County.

This section of the Lower Chickahominy River passes by several sections of residential and agricultural development, as well as multiple marinas. Many of these developments are beyond a 100' buffer of the riparian zone and hidden by thick tree cover, making them only visible by satellite imagery. This area features nationally recognized largemouth bass fisheries and is commonly used by power boaters, anglers, and duck hunters. However, a large conservation easement, held by the Department of Game and Inland Fisheries, prevents public encroachment, and protection of cypress swamps by the Chesapeake Bay Preservation Act maintains its scenic quality.

The Captain John Smith Chesapeake National Historic Trail runs through this section of the river. Additionally, there are many historic sites along the section that have yet to be studied for registration with the Department of Historic Resources.

The Lower Chickahominy Scenic River study has resulted in the following recommendations relative to scenic river designation, protection, administration, and management:

1. The ~10-mile segment from Walker's Dam in New Kent County, downstream to River's Rest Marina in Charles City County, should be designated as a component of the Virginia State Scenic Rivers Program.
2. The Department of Conservation and Recreation should be designated as the administering agency.
3. It is recommended that an advisory committee be organized and appointed by the Director of the Virginia Department of Conservation and Recreation (§10.1-401.4). The committee will consider interests and issues of the scenic river section as well as assist and advise the Director and local government with the protection and management of the scenic river section (§10.1-406.1). The duties of the Chickahominy River Advisory committee will be to advise the administering agency on any federal, state, or local government plan to approve, license, or construct facilities that would alter the natural, scenic, or historical values which qualify the Chickahominy River for designation.

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(STURGEON) ¹

Photo by Don West for *RichmondOutside.com* at

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