

# RIPARIAN BUFFERS IN THE TOWN OF HECTOR - DRAFT

Schuyler County, New York



## RIPARIAN BUFFERS

The purpose of this report is to evaluate riparian buffers in the Town of Hector and find riparian buffer areas that may benefit from tree or shrub planting. Riparian buffers are the vegetated zones that adjoin streams and rivers (Figure 1). This report focuses on buffers that are vegetated with trees or mature shrubs. Maintaining forested riparian buffers is a valuable tool to help the Town reduce the increased flooding that is predicted to come with climate change.

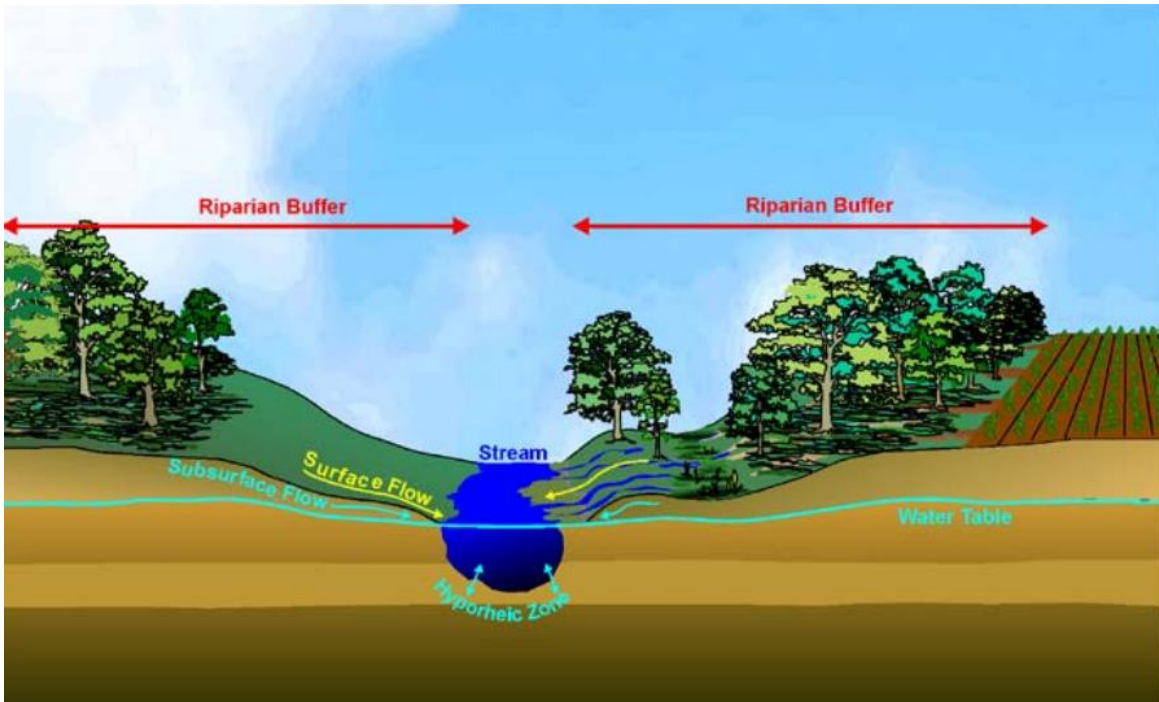


Figure 1. Riparian Buffers (From USEPA 2005)

## IMPORTANCE OF RIPARIAN BUFFERS

### Flood Reduction

Perennial vegetation along streams intercepts precipitation and slows water moving across the landscape, giving it more opportunity to infiltrate the ground rather than flowing quickly into streams. Water seeping into the ground also recharges groundwater. These benefits can reduce flooding of adjacent cropland and protect downstream communities from flood damage.

### Water Quality Improvement

Forested riparian buffers filter nutrients, pesticides, and animal waste from agricultural and residential areas. They intercept highway pollutants, such as vehicle exhaust, heavy metals, and salt, minimizing their transport into streams. Forested buffers stabilize stream banks, thereby reducing

streambank erosion and siltation of streams. Water quality improvements in streams also result in improved water quality in the downstream receiving waters, such as Seneca and Cayuga Lake.

### Fish and Wildlife Habitat

Forested riparian buffers provide shade, shelter and food for fish, birds, mammals, reptiles, amphibians and invertebrates. Many fish move upstream or downstream as part of their life cycle (e.g., to spawn) and depend on a network of continuous vegetated riparian buffers. Wildlife such as birds, mammals and amphibians also move to find food, shelter or nesting habitat and benefit from the vegetated riparian corridors.

### MAJOR STREAMS IN THE TOWN OF HECTOR

Major streams in the Town of Hector are shown in Figure 2 and include Bolter Creek, Breakneck Creek, Bullhorn Creek, Hencoop Creek, Logan Creek (aka Raspberry Creek), Sawmill Creek, Spring Brook, Taughannock Creek, Hector Falls Creek and Tug Hollow Creek. All streams in the Town of Hector are classified as Class C or better by the New York State Department of Environmental Conservation, showing that they support fish and other aquatic organisms. Taughannock Creek and Hector Falls Creek are also capable of supporting trout.

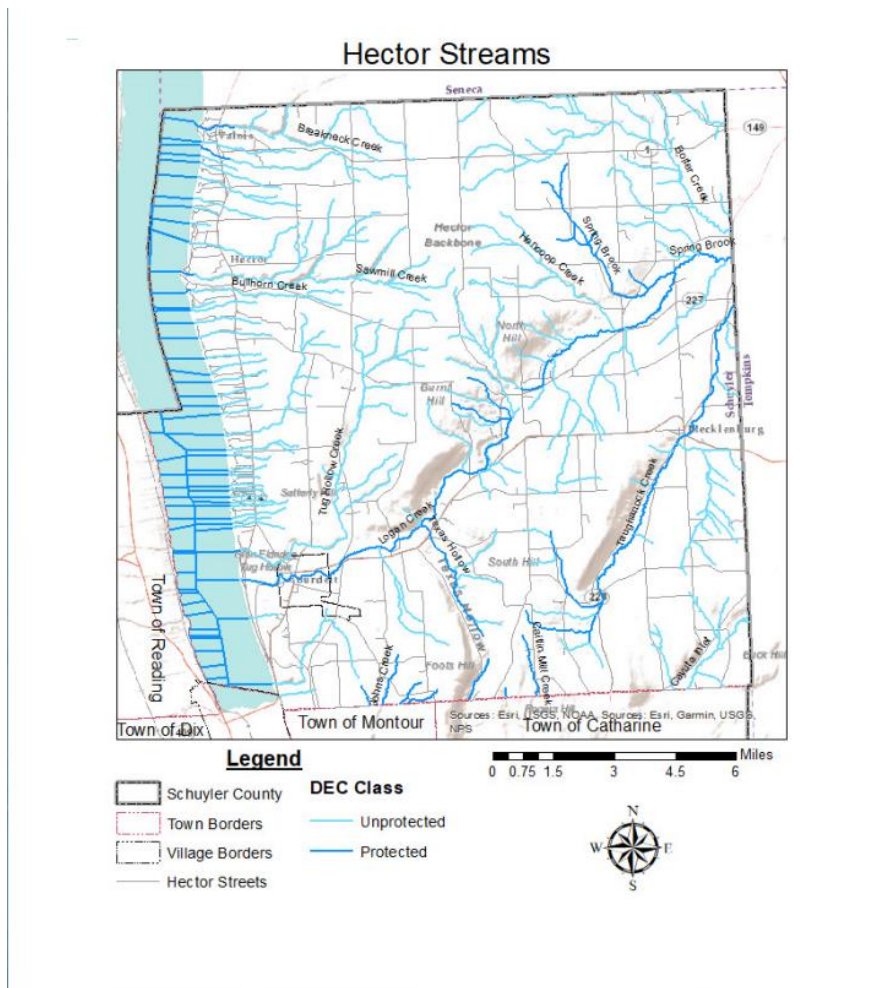


Figure 2. From Town of Hector Natural Resource Inventory (CCE 2021).

## EVALUATION OF RIPARIAN BUFFERS IN THE TOWN OF HECTOR

Riparian buffers in the Town of Hector were evaluated using a combination of aerial photography and field inspection (generally at road crossings). We evaluated most streams that appear as blue lines on Bing Maps. Riparian buffer conditions were evaluated based on observations made in the spring and summer of 2022. This is a qualitative assessment and any further evaluation of riparian buffers and the need for buffer revegetation should be based on a more detailed assessment.

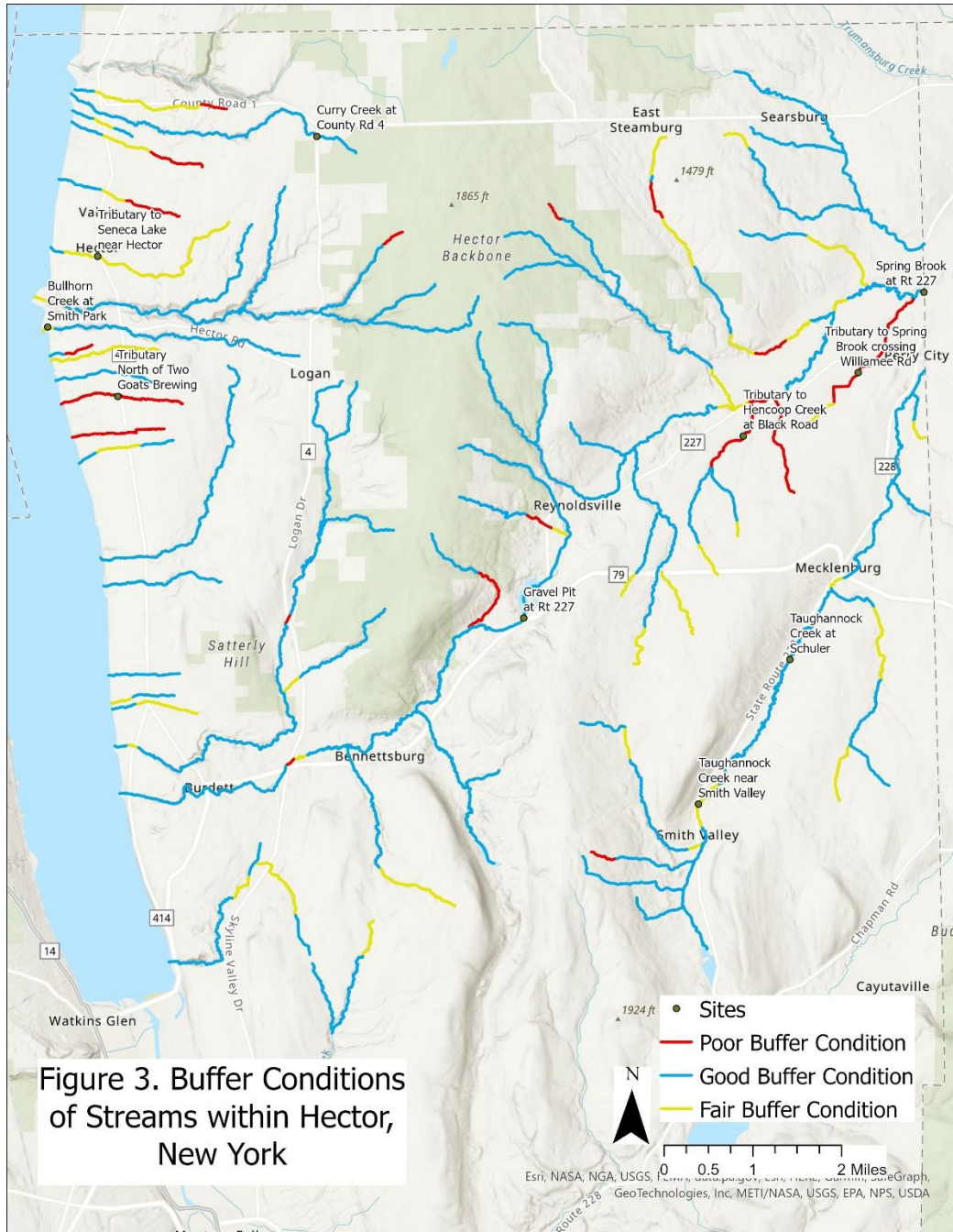
There are a variety of guidelines for riparian buffer widths. Buffers as narrow as 10 feet may be adequate to promote bank stabilization whereas 300-foot-wide buffers may be optimal for certain wildlife species (Hawes and Smith 2005). Optimal buffer widths may also vary depending on the size of the stream and steepness of the streamside area. For example, narrow streams generally need less of a buffer than wider ones. The NYSDEC recommends a riparian buffer width of 50 feet as part of their Climate Smart Communities Certification Actions (<https://climatesmart.ny.gov/actions-certification/actions/#open/action/96>).

The purpose of this evaluation was to find riparian areas in the Town of Hector that could derive the greatest benefit from tree or shrub planting in the buffer area. If the stream margin had approximately 20 - 30 feet or greater of tree and shrub cover on both sides (assessed visually; not measured), the riparian buffer was rated good (blue). If the stream margin area was made up of generally less than 20 feet of tree and shrub vegetation or was interrupted in sections by areas of lawn or agriculture, the riparian buffer was rated fair (yellow). If the streamside area was largely devoid of trees or shrubs, but consisted of predominantly agriculture or residential lawn, the riparian buffer was rated as poor (red).



## QUALITY OF RIPARIAN BUFFERS IN THE TOWN OF HECTOR

The good news is that most sections of streams in the Town of Hector were rated as having good riparian buffers (Figure 3). Very few stream sections had fair or poor riparian buffers.



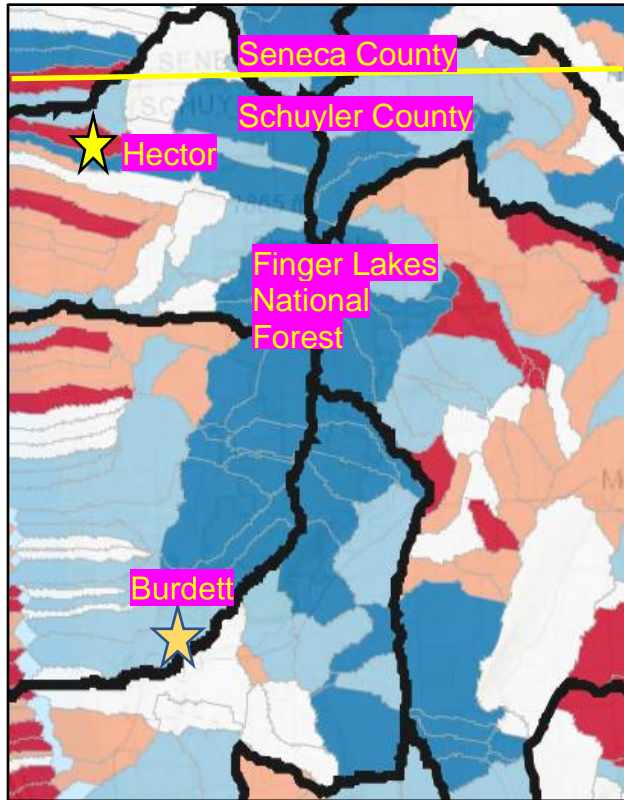


Figure 4. New York State Riparian Assessment – Catchments (NYSDEC 2017). See text for explanation of colors.

The results shown in Figure 3 are largely consistent with the assessment data from the New York State Riparian Opportunity Assessment (NYSDEC 2017). This NYSDEC document identifies locations where enhancement of riparian buffers will produce tangible benefits to water and habitat quality. Figure 4 shows an image taken from this statewide riparian assessment within the approximate boundary of the Town of Hector. Streams were given comprehensive scores that reflected a measure of ecological stress and ecological health. In general, dark blue and light blue areas have good riparian quality, white and tan areas have fair riparian quality and areas in red have poor riparian quality.

## RIPARIAN BUFFERS RATED AS GOOD

Riparian buffers rated as “Good” provide ecological and water quality benefits to the adjoining stream. Most of the Finger Lakes National Forest has riparian buffers rated good as part of this assessment (and with a high comprehensive score from the NYSDEC riparian assessment – see Figure 4). Good riparian buffers are characterized by mature trees extending at least 20 feet laterally from the edge of the stream on both sides of the stream. These streams are kept shaded and cooler by overhanging vegetation, providing benefits to fish, amphibians, reptiles, and aquatic insects. These high-quality buffers provide nesting and foraging habitat for birds and mammals, as well as wildlife corridors. Examples of good riparian buffers are Shown in Figures 5 and 6.



Figure 5. Examples of Riparian Buffers Rated as Good. Taughannock Creek at Schuler on Left. Spring Brook at Rt. 227 on Right. See Figure 3 for locations.



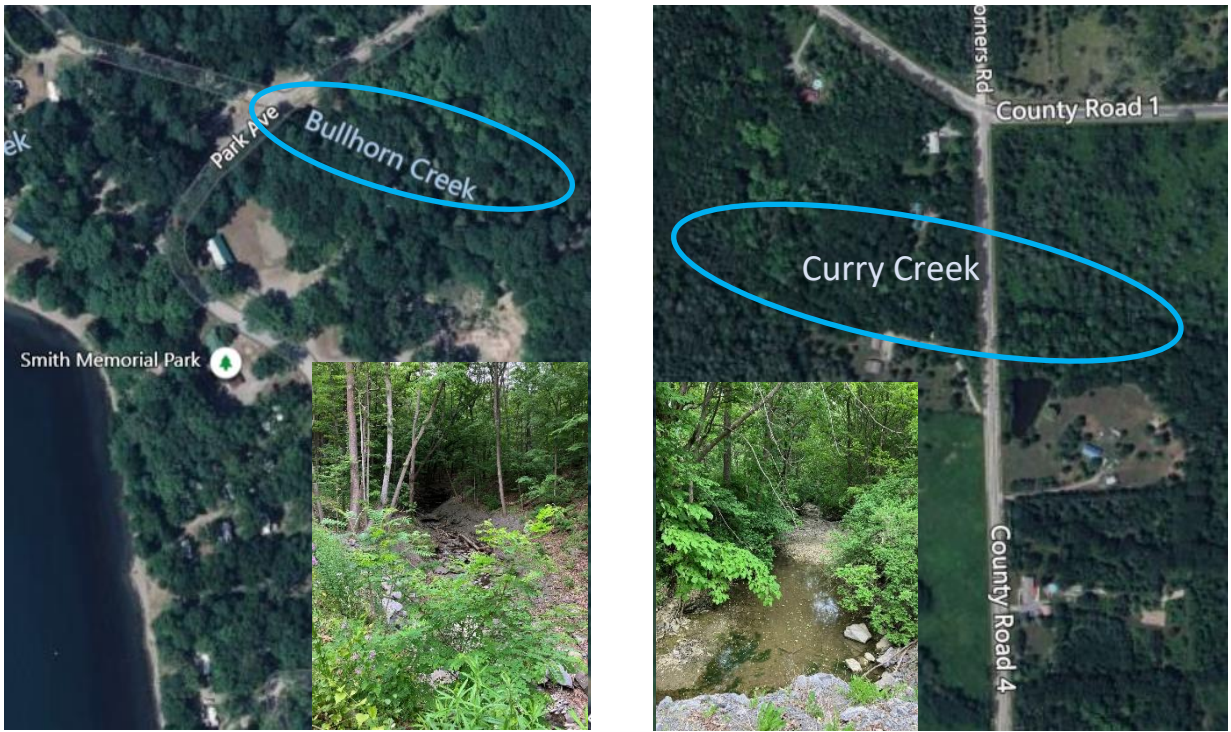


Figure 6. Examples of Riparian Buffers Rated as Good. Bullhorn Creek at Smith Park on Left. Curry Creek at County Road 4 on Right. See Figure 3 for locations.

### RIPARIAN BUFFERS RATED AS FAIR

Riparian buffers were rated as “Fair” if they were generally less than 20 feet wide or if there were small riparian stretches with no riparian buffer. Examples of fair buffers are shown in Figures 7 - 9.



Figure 7. Riparian Buffer Rated as Fair. Logan Creek Near Gravel Pit at Rt 227. See Figure 3 for location.



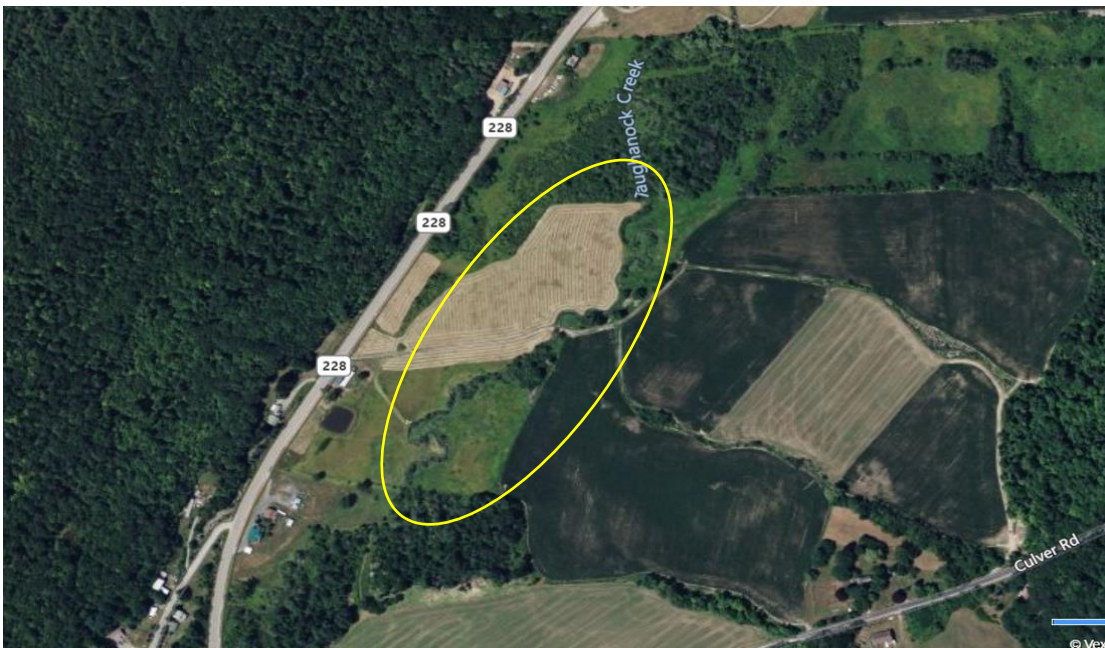


Figure 8. Riparian Buffer Rated as Fair. Taughanock Creek Near Smith Valley. See Figure 3 for location.



Figure 9. Riparian Buffer Rated as Fair. Hazlitt Road Tributary to Seneca Lake. See Figure 3 for location.

### RIPARIAN BUFFERS RATED AS POOR

Riparian buffers rated as “Poor” have no forested or shrub vegetation next to the stream other than scattered trees. Poor riparian buffers are rare in the Town of Hector and are typically along headwater or ephemeral streams. They are also generally in areas where agricultural activities directly border the stream. Examples of poor riparian buffers are shown in Figures 10-12.





Figure 10. Tributary to Hencoop Creek at Black Road. See Figure 3 for location.



Figure 11. Tributary to Spring Brook Crossing at Willamee Road. See Figure 3 for location.



Figure 12. Tributary North of Two Goats Brewing. See Figure 3 for location.

### RIPARIAN PLANTING PROJECTS

The next steps to improving riparian buffer vegetation and stream integrity in the Town of Hector would be to evaluate buffer areas identified as poor or fair on property owned by landowners that are interested in steamside planting. There are programs that can help in supplying trees and shrubs at low or no cost and the Town of Hector could assemble a group of volunteers to plant the trees and shrubs. The NYSDEC has a “Buffer in a Bag” program as part of its “Trees for Tribs” Program (<https://www.dec.ny.gov/animals/77710.html>). They supply bags of 25 tree and shrub seedlings to public and private landowners by an application process. Both the Natural Resource Conservation Service and U.S. Fish and Wildlife Service have programs to restore fish and wildlife habitat or install environmentally beneficial conservation practices.

[https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?cid=nrcs144p2\\_015693](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/?cid=nrcs144p2_015693)

<https://www.fws.gov/program/partners-fish-and-wildlife>



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<https://www.nynhp.org/projects/>

[statewide-riparian-assessment/](#)

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