

conserving the creek

WINTER 2020-2021 NEWSLETTER

Although this year has presented many challenges – and we’re obviously late getting our Family of the Kayaderosseras 2020 Holiday / New Years letter out – Friends of Kayaderosseras volunteers were able to make great progress this year. Some of those steps, as well as plans and discussions for 2021, are described below.

We also wanted to provide a big thanks to those of you that shared pictures and stories of life and work in the creek online this year. The creek again demonstrated its significance as a place for refuge and revitalization. Seeing the creek, and you in it, helped many of us during a difficult year!

Activities

Fall clean-up occurred on Nov 7. Owing to the importance of hard work and social distancing, the 33 participants covered a total of 19 different locations! Folks worked in small teams ultimately collect 1.08 **tons** of trash, including a full-size living room couch, a reclining chair and a dozen tires. A big thanks to County Waste for providing access to the dumpster (No delivery fee – thank you!). The creek clean-up included a really impressive turnout from the Ballston Spa High School student government team, which did a nice job of cleaning up Kelley Park. We also had a few newcomers as well as the usual suspects and really appreciate everyone's participation considering the circumstances. A job well done, Indeed!

In case you are keeping score, the Summer 2020 clean-up see’s the couch and raises a freezer.

Axe Factory updates:

Continuing efforts to clear the site of debris, improve access, and develop trails! With the help of Norm Bovee and his 4-wheeler and trailer, FoK volunteers were able to remove two dumpsters full of years-old scrap metal, appliances, and car parts. And yes, they threw in the kitchen sink!



We're also making incremental progress (soliciting plans and bids!) towards constructing a more organized space at the access point to Axe Factory Preserve off Axe Rd. The goals are to diminish parking pressure associated with visitors to the site, diminish erosion associated with the steep topography around the stream's valley, and increase access to the stream (for nature-enthusiasts, fishing-enthusiasts, history-enthusiasts, and those cleaning up the stream!). Keep a lookout for more opportunities in 2021 to help prepare this site for visitors.



Eagle Scout candidate Alex Duthaler, of Troop 11 Saratoga Springs, developed and designed plans for fencing along the top of the old foundation at Axe Factory Preserve. With manpower provided by adults and Scouts from his troop, Alex and company constructed a fine-looking split rail fence which will serve to protect both the site and visitors. Thanks Alex!

Re-imagining Signs and Symbols

The progress being made on the FOK website and at Axe Factory Reserve has encouraged us to consider the importance of identifying our work in a recognizable way. For example, if we're going to maintain marked trails to support access for nature- and fishing enthusiasts, should those trails have a distinctive logo? This sort of signage can help point folks in the right direction and, no less importantly, encourage visitors to FOK-supported locations to be mindful of the limits of those properties (what activities are encouraged versus discouraged, where the properties of our neighbors' start, etc.). One of our new favorites is shown to the right, and we look forward to introducing others at annual meeting in March.



Fish Stocking – a historical and comparative approach

We thought it might be helpful to take stock of the trout stocking, and put our efforts in the context of work by others in the region. Friends of Kayaderosseras generally stocks trout 1-2 times per year (6 times in past 4 years), and add an average of 670 fish during a stocking event.

We add rainbow, brown and brook trout, and the 4000+ fish we've added to the stream since 2017 were in a species ratio of approximately 10:2:1 (rainbow, brown and brook, respectively).

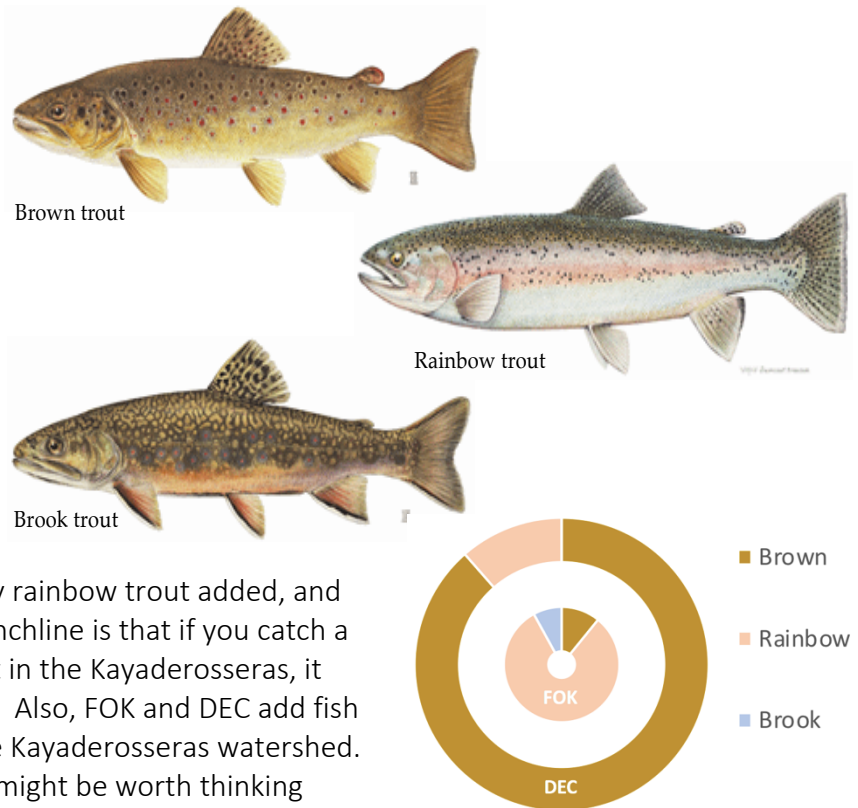
For comparison, the DEC stocked ~8200 fish in the Kayaderoserras and tributaries in 2020, and that is ~7x what FOK added in that same year. Or, if you like, FOK stocking boosts the state's stocking by an additional 15%, or nudges the likelihood of catching a fish by 15%. There are also differences in what the organizations are adding to the streams. For example, the DEC stocking in 2020

added ~8 brown trout for every rainbow trout added, and added no brook trout. One punchline is that if you catch a stocked rainbow or brook trout in the Kayaderoserras, it likely arrived as a result of FOK. Also, FOK and DEC add fish in different locations within the Kayaderoserras watershed. Those differences in approach might be worth thinking about, particularly in the context of considering goals, diversity of fish, the importance of consistently following a particular set of best practices, etc.

DEC monitoring (electro shocking) at three sites in the Kayaderoserras (at Rt 29 and further upstream) in April and July of 2012 and 2013 detected stocked brown trout, wild brown trout, and brook trout in a ratio of approximately 14:3:1 (respectively). That sampling also suggests that wild brown trout become more common in those sites in July than April (both in terms of absolute numbers and as a proportion of the trout community), whereas numbers of stocked brown trout (the most common fish overall) drop by ~70% from late spring to mid-summer. Whether these changes reflect differences in survival versus upstream/downstream movement by the fish isn't clear from that sampling. In those two years, Brook trout were absent from one site, present only during spring in another (albeit in both years), and consistent from springs to summers in the third site.

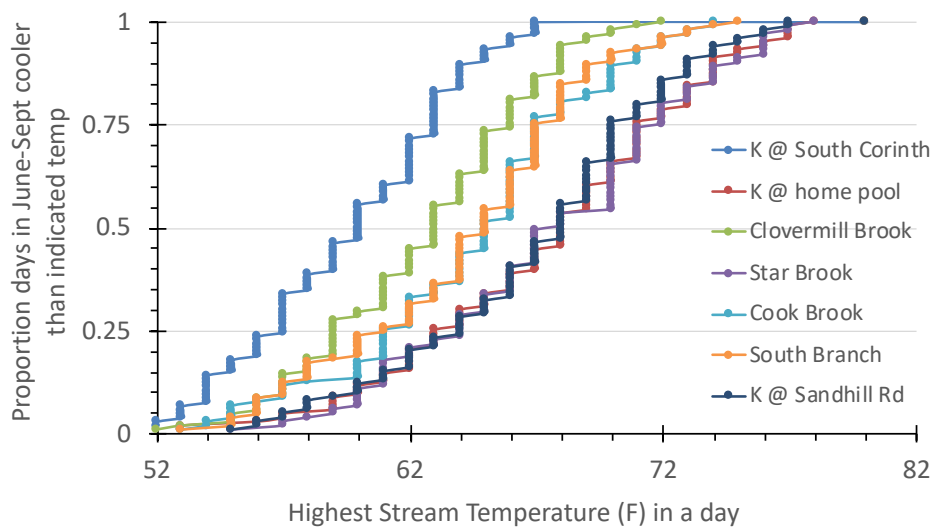
Stream Monitoring and Education – temperature data

This fall a pair of Skidmore students (Jenna Wilhelm and Eliana Colzani) organized and interpreted stream monitoring data collected in the past by members of Friends of the Kayaderoserras. The goal of the project is to characterize the differences in thermal regimes of different local streams, as well as the same streams over time (across months and years). Water temperature is important for many fish and insects, and can also inform processes such as decomposition wherein the resources in autumn leaves become available to the animal communities living in the streams. Stream temperature can be influenced by water sources



(e.g., melting snow, rainfall, springs), and can be regulated by the cover provided by forested riparian areas. As a result, stream temperature may also be influenced by *loss* of forest cover as well as changes in places where water can sit and warm up, whether a retention pond, beaver meadow, or pavement.

Bob Thomas monitored water temperatures in a number of local streams from 2001-2010. Here, we synthesize a subset of those records. Descriptions from seven stream locations – including different sections of the Kayaderosseras as well as local feeder streams – between June 15 and Oct 1, 2006 (the hottest part of the year for water temperatures) are shown in the figures below. These visualize stream temperatures in the context of *cumulative frequency distributions* – something that may sound complicated but is actually quite legible once you get the hang of it. Briefly, the horizontal axis indicates stream temperature; in these 7 locations in during that period in 2006, maximum daily water temperatures ranged from 51 to 78° F. The vertical axis describes the proportion of those days (June – Oct) where maximum in-stream temperatures were equal or less than the indicated temperature. We can use the intersections between information on the two axes to draw some preliminary conclusions about where to find the cold waters preferred by trout.



For example, 75% (that is, 0.75) of days in the Kayaderosseras at South Corinth were cooler than 63° F (see intersection of blue line, indicating Kayaderosseras at South Corinth, with 0.75 and 63° F). You can see that the temperature regimes of the seven stream reaches differ quite a bit. The Kayaderosseras at South Corinth is colder than three thermally-intermediate water bodies (Clovermill Brook, Cook Brook, and South Branch of the Kayaderosseras), and several locations are quite a bit warmer (Star Brook, Kayaderosseras at Sandhill Rd, and Bob Thomas’s “home pool” in the Kayaderosseras at West Milton).

We could also examine this information with an eye towards particular users and their preferred temperatures. For example, Brook trout are native to these waters and are New York’s official state fish. The DEC describes Brook trout as *generally living in small-to moderate-sized streams, lakes, and ponds, wherever cool (below 72 degrees Fahrenheit) water is available*. If we used that 72° F as a criterion, these seven streams differ in terms of suitability for Brook Trout. Every day in summer 2006 in the Kayaderosseras at South Corinth - and 99% of days in

Clovermill Brook - was colder than this threshold. Ninety-three percent of the days were sufficiently cold in the South Branch of the Kayaderosseras and Cook Brook, and this figure drops to 75-80% in the remaining reaches.

Although these descriptions are limited to individual locations, and one particular year, they underscore that the thermal conditions necessary to support Brook Trout occur in the Kayaderosseras watershed. To the extent that the fish move to follow preferred thermal conditions, individuals may also “ebb and flow” within connected portions of the watershed as conditions change over time. For example, in the home pool in the Kayaderosseras at West Milton, 25% of the days between June-Sept were $\geq 72^{\circ}\text{F}$ (i.e., warmer than that preferred by Brook Trout). Although many days in July and August exceed that threshold, average maximum daily temperatures had already dropped to 61°F in September. That particular location is inappropriate for independently supporting brook trout throughout the year and might be a poor site to find brook trout in mid-summer but may nonetheless contribute valuable habitat – and connectivity - during many periods.

One take-home point is that the smaller streams and tributaries vary quite a bit in temperature. The Kayaderosseras is not only one stream! This work also begs a number of follow-up questions. Within a particular site, how representative is one year for another? Do the relative differences among streams remain consistent across years? Has the landscapes and riparian zones adjacent to stream reaches in the Kayaderosseras watershed changed over time in way that influences in-stream temperatures? How is habitat suitability informed by other variables besides temperature? We have years of additional Thomas temperature records to work through, and it may be worth revisiting some of those locations with some new thermometers!

COMING UP, FOR THE CALENDAR:

- MARCH 15. ANNUAL MEETING, with details to follow regarding the arrangements. Online participation is encouraged!
- MAY 1. SPRING CLEAN-UP
- MAY 16. CREEK TENDERS PADDLE
- SUMMER will also include sessions devoted to Axe Factory Preserve and other sites, but these aren't yet fixed on the calendar. Stay tuned!
- SEPT 18. PEDAL THE CREEK
- NOV 6. FALL CLEAN UP

STAY CONNECTED

Website: kayaderos.org

www.facebook.com/FriendsoftheKayaderosseras/

Twitter: @Kayaderosseras