New River Symposium 2024

APRIL 11-12, 2024 • RADFORD UNIVERSITY
STUDENT RECREATION & WELLNESS CENTER

RIVERS^3

RECONNECT | RESTORE | RECREATE
SYMPOSIUM 2024

New River Conservancy

Abstracts & Bios

THURSDAY 2:10 PM - 3:50 PM • Darter Room *Reconnect: Wildlife*

Joshua Mouser
Virginia Tech
Co - presenter: Zachary J. Loughman
West Liberty University

Joshua Mouser is a Ph.D. candidate at Virginia Tech. Joshua's research focuses on the ecology and conservation of stream ecosystems. Specifically, he is interested in understanding coarse-scale landscape changes and how to protect stream ecosystems in the face of those changes.

Crayfishes of the New River watershed and Factors Affecting Their Distributions

We lack basic data needed to make effective conservation decisions for many crayfishes, especially those that occur in the New River watershed (hereafter New River). Therefore, we investigated coarse-scale drivers of crayfish occurrence in the New River. Our results reveal that increasing human-mediated changes and invasive crayfishes threaten the persistence of native crayfishes in the New River.

Bryan L. Brown
Virginia Tech
Co - presenter: Robert P. Creed
Appalachian State University

Bryan L. Brown is an Associate Professor in Biological Sciences at Virginia Tech. He studies community ecology, primarily in stream systems, with particular foci on biodiversity patterns in river networks, symbiotic interactions, invasion ecology, and the ecology of crayfish and their symbionts.

Effects of non-native crayfish invasions in the New River Valley

While the direct effects of invasive crayfish on native crayfish have been widely documented, a lesser-known indirect effect may also increase the success of non-native crayfish invasions: the dilution of native symbionts of native crayfish. We have documented that invasive crayfish in the New River Valley tend to be poor hosts for native symbionts and have diluted the diversity and abundance of these symbionts at many highly-invaded sites.

Mariana Castaneda-Guzman
Virginia Tech
Co - presenter: Madison Harris
Virginia Tech

Mariana Castaneda-Guzman is a Ph.D. student in Fish and Wildlife Conservation at Virginia Tech. dedicated to using data analytics, especially in remote sensing and big data analysis, to address ecosystem health and climate change adaptation. Her current work aims to fill gaps in understanding the effects of landscape change on human and ecosystem health.

Development and Application of a Multiscale Model of Habitat Suitability for Candy Darter

Candy Darter (CD; Etheostoma osburni), a fish endemic to the New River basin, is an ecological specialist in fast-flowing, cool- and cold-water streams with minimal siltation. Due to widespread population declines and extirpations driven by excess sedimentation, increasing water temperatures, and hybridization with the introduced Variegate Darter (VD; E. variatum), CD was designated Endangered by the U. S. Fish and Wildlife Service in 2018. We developed species distribution models (SDMs) to assess the suitability of stream segments and watersheds for CD.

THURSDAY 2:10 PM - 3:50 PM • Darter Room *Reconnect: Wildlife*

Mike Pinder
Virginia Department of Wildlife Resources
Co - presenter: Maddie Cogar
Virginia Department of Wildlife Resources
Mike Pinder is the Nongame and Endangered Species Fish Biologist for the Virginia Department of Wildlife Resources. He has co-authored the Field Guide to Freshwater Fishes of Virginia and the original edition of A Guide to Virginia's Snakes.
Status of an Undescribed Endemic Sculpin in the New River Drainage, Virginia
Restricted to the upper Bluestone River system in Virginia and West Virginia, the Bluestone Sculpin (Cottus sp.) is one of eight endemic fish species in the New River drainage. Besides being undescribed, basic status, demographic, habitat preference information is lacking resulting in shortcomings for its management and conservation. Our study indicated that the species is secure from a single stochastic event; however, threats from residential and industrial pollution are still present. Future research will examine breeding period, fecundity, and diet, and assess age by analyzing otoliths.

Price Sewell
Copperhead Environmental Consulting
Co - presenter: Shea Davis
Copperhead Environmental Consulting
Price Sewell has over 25 years of expertise working as a wildlife biologist across the eastern United States. In 2006, Price joined Copperhead Environmental Consulting and now spearheads their freshwater mussel, fish, and hibernating bat programs. During his time with Copperhead, Price has worked for state, federal and private entities across the eastern and midwestern United States and continued to pursue his passions for both aquatic and terrestrial wildlife.
Qualitative Analysis of Mussel Populations in the New, Bluestone and Gauley Rivers
Qualitative timed search surveys for freshwater mussels were conducted at 30 sites in the New River National Park and Preserve (NERI), 24 sites in the Gauley River National Recreation Area (GARI), and nine sites in the Bluestone National Scenic River (BLUE). When a mussel density of greater than one mussel per square meter was encountered, a semi-quantitative transect survey was conducted. Very little historic data is available for the Gauley River and historic mussel populations are assumed to have been sparse. Only four individuals of one species (Cyclonaias tuberculata) were found in BLUE. Mussel populations appear to have declined drastically in the Bluestone River based on surveys conducted during the 1980's to present day.

THURSDAY 2:10 PM - 3:50 PM • Salamander Room *Restore: Community*

Patricia Colatosti
Town of Christiansburg
Patricia currently works as the Environmental Program Supervisor for the Town of Christiansburg, implementing a variety of stormwater quality programs. She holds degrees in Biology, Forestry, and Education from Virginia Tech and Duke University and has worked as both a forester and a public-school teacher.
Public/Private Urban Stormwater Management: Crab Creek Beautification Project
An overview of the Town of Christiansburg's efforts to enhance community actions that reduce common pollutants in stormwater runoff. Discussion will include the Crab Creek Beautification Project public/private grant program, pet waste management, crowd sourced information, citizen science monitoring, and adopt-a-spot programs. Both challenges and successes will be highlighted.

Nicole Hersch
Plant SWVA Natives
Nicole Hersch has a background in landscape architecture, regional planning, and community design.
Plant SWVA Natives: A Guide to Gardening with Native Plants from Southwest Virginia
Nicole will share The Plant Southwest Virginia Campaign, including the importance of native plants, the new free resource, "A Guide to Gardening with Native Plants of Southwest Virginia", and a few inspirational native plant projects happening in Southwest Virginia.

Jesse Kelly
Nursery Natives
Co - presenter: Katie McFall
Feeding Appalachia
Katie McFall (Feeding Appalachia) & Jesse Kelly (Nursery Natives) are ecological landscapers, gardeners, community organizers, and restorationists. Based in Radford, Virginia, many of their efforts serve to benefit the overall health of the New River through advocacy, design, education, creative collaborations, community events and the ongoing planting of native flora.
Wild Edibles of the New River Valley
Food is all around us! The unique biodiversity of the New River Valley offers abundance with each season, ranging from berries and fruits, nuts, teas, mushrooms, herbs, spices, and even perennial vegetables -- some of which have been coevolving with humans here (in Virginia) for thousands of years. Many of these you may recognize from your backyard while others may be brand new. Learn quick ID tips for over 20 wild local edibles, how to prepare them, and some ways we can be good stewards while filling our plates.

THURSDAY 2:10 PM - 3:50 PM • Salamander Room *Restore: Community*

Mae Hey
Virginia Tech
Dr. Hey organizes weekly gatherings to help people return to their relationship with Land. Her work consists of teaching people to recognize plant relatives, to see opportunities with them, and to reciprocate care to them. Additionally, she teaches cooking workshops to promote sustainability through kin-centric ecology and close wellness inequities.
Learning to be a good relative to Land through foodways
Dr. Mae Hey organizes weekly gatherings to help people build or return to reciprocal relationship with Land, others, and themselves. Her work consists of teaching people to recognize plant relatives, to see opportunities with them, and to reciprocate care to them. Additionally, she teaches cooking workshops and hosts community gatherings around foodways to promote sustainability through kincentric ecology (being a good relative to Land, others, and yourself) and close wellness inequities involving food. This short talk will describe Dr. Hey's approach to healing local relatedness, damaged by colonizing processes and forces, for decolonizing and conscientizing our ways to living more gently with Place.

FRIDAY 10:20 PM - 12:00 PM • Darter Room *Recreate: Activies*

Joshua Carroll
Radford University
Co - presenter: Alexis Taylor
Radford University
The Water and Lands Recreation Opportunity Spectrum Along the New River
Water recreation along the New River and Claytor Lake continue to gain popularity, and Water Access remains one of the top priorities for the Virginia Outdoors Plan, backed by significant demand and use. One tool that has been used to help managers, planners, and communities better understand the resource they are charged with protecting is the Water and Lands Recreation Opportunity Spectrum (WALROS). This presentation will provide an overview of WALROS, how it can be used as a planning and management tool, results of data collected thus far, and aims to spark discussions for possible future uses on Claytor Lake and/or the New River.

Kristina Stefaniak
Radford University
Kristina Stefaniak is an analytical chemist with research projects incorporating analysis of water and soil samples collected in Southwest Virginia. Many of her projects are in collaboration with colleagues from biology and focus on local environmental issues that form connections with students and the community.
Using the River in our Backyard for Research in our Classrooms
Radford University is nestled next to the New River which offers unique opportunities for research projects embedded into the curriculum. This presentation specifically discusses two semester long research projects in analytical chemistry. The first looked at water runoff into the New River and the second involved collaboration between analytical chemistry, genetics, and microbiology to see if there was an effect on a closed industrial site on the New River. Integrating teaching and research into courses benefits the students, faculty, and community.

FRIDAY 10:20 PM - 12:00 PM • Darter Room *Recreate: Activies* Continued

Brooke Love
Inscape Creative, Co.
Brooke Love, Founder and CXO of Inscape Creative Company and a Radford University, MFA student, merges art, food, and nature to unite communities. With a background in marketing and design thinking for community placemaking, Brooke Love cultivates resilient food systems, nurturing dialogue and sustainability. Her work celebrates diversity while creating vibrant communal spaces that inspire connection and creativity.

The Art of Sustainability
In a world with increasing environmental challenges, innovative approaches to raising awareness and inspiring change is essential. This presentation by Inscape Creative, Co. shares the transformative power of murals as a compelling tool for promoting environmental preservation. Drawing on the intersection of art, education, and environmental advocacy, this presentation delves into the impact of public art installations in fostering a deeper connection between communities and their waterways.

Anja Whittington
Virginia Tech
Anja Whittington is an Associate Professor in Forest Resources and Environmental Conservation, specializing in Outdoor Recreation Management at Virginia Tech. She is an avid biker and has led numerous trips on the New River Trail with college students.

Bikepacking the New River Trail
Bikepacking consists of multi-day cycling on dirt roads, trails, and gravel. The New River Trail State Park in Virginia, manages a 57-mile linear trail along an abandoned railroad for cyclists, hikers and horseback riding. With multiple entry points and parking, along with options for camping or staying at the newly refurbished Inn at Foster Falls bikers can choose their own adventure. This presentation will share what is bikepacking, health benefits of bikepacking, and techniques for biking the New River Trail. It will also examine the recreational, educational, and economic value the trail offers to the region.

Charles Harmon Lytton
Author and Storyteller
Charles H. Lytton has watched the changes in New River for 73 years. Lytton has two degrees from Virginia Tech and is retired as Extension Agent Emeritus. He has authored seven books focusing on my life along New River, the region's people, and how the New River has influenced all of our lives.

A Little Fat Boy Growing Up on New River
Charles Lytton is a lifelong resident of Southwest Virginia and the author of 7 books about life along New River as seen through the eyes of a child. He has been described as a true Appalachian American boy. This presentation will focus on New River as Lytton remember it and the changes he has seen in the last 60 years. Its' people, the places, and the changes will be part of the presentation.

FRIDAY 10:20 PM - 12:00 PM • Salamander Room *Restore: Cleanups*

John Pence
Keep Ashe Beautiful
Mr. Pence is president of Keep Ashe Beautiful, a Keep America Beautiful affiliate. As a corrosion engineer, he spent his career designing systems and methods to extend the useful life of marine structures. His career in corrosion mitigation & prevention made him cognizant of materials resilience and their potential harmful effects on the environment. This ultimately led to his interest in minimizing the quantity of durable waste in our waterways and his involvement if Keep Ashe Beautiful.

Reducing Litter in our Waterways
The author will present data points and research information regarding the proliferation of litter in our communities, what are the most frequently encountered litter items that may infiltrate our waterways and what we can do to minimize the impact. Examples of previous initiatives taken place in Ashe County, North Carolina will be shown and further discussed. Finally, suggestions on how you can join the fight and make a big difference in enhancing the quality of life in your community.

Luke Stevens
Beckley Sanitary Board
Luke Stevens helps lead the stormwater program for the city of Beckley, WV. He is passionate about partnering in the community to enhance water quality and create sustainable opportunities in the urban watershed. Luke and his wife live in Beckley with their four beautifully energetic kids.

Trapping the Trash: Intercepting Floating Litter on New River Tributaries
The Beckley Clean Streams Initiative is an ongoing campaign to remove litter and raise litter awareness in the urban streams of Beckley WV. This project builds on the success of a 2022 Litter Control collaborative project between Beckley Sanitary Board and Piney Creek Watershed Association (PCWA). BSB and PCWA have been actively monitoring water quality in the Beckley urban watershed since 2018, and have seen the impact of floating litter in stream channels and along stream banks. Through a 2022 Litter Control Grant, BSB and PCWA installed two in-stream litter capturing “Trash Trout™” devices, in commercial and residential urban streams of Beckley.

Keith Andrews
New River Wildlife & Conservation Club, Inc. NRC, Grayson LandCare, VA DWR, BRDC
Co - presenter: Jason Harris
New River Wildlife & Conservation Club, Inc., VA Department of Wildlife Resources
As a lifetime outdoorsman and angler Keith Andrews began his relationship with the New as a college student at VT in 60’s and his career in Industrial Education and Human Relations has created intersections with the New ever since. Since retiring he has become more entwined as a conservationist with the New through his association with DWR, NRC, New River Wildlife & Conservation Club, Grayson LandCare, and the Blue Ridge Discovery Center.

August is Clean River Month in Grayson County
In the spring of 2021 based on the encouragement from one of the oldest conversationist groups in the county, the Grayson County Board of Supervisors issued a proclamation declaring August is Clean River Month in Grayson County. This presentation will provide an overview of how that proclamation has become a reality in Grayson County and is still growing.

FRIDAY 10:20 PM - 12:00 PM • Salamander Room *Restore: Cleanups* Continued

John Crockett
Friends of Peak Creek/ Pulaski County, VA
John Crockett is Director of Community Development for Pulaski County. He also is a board member of the Friends of Peak Creek, as well as the town's main street organization, Pulaski On Main. John is an active outdoorsman and loves spending time in the wilderness of Southwest Virginia and beyond.

Rural Resilience: Friends of Peak Creek and the Reliance on Grassroots Conservation Groups in Fostering Environmental Stewardship Throughout the Headwaters of the New
A slide presentation that outlines the importance of grassroots conservation in rural areas, notably Friends of Peak Creek and the headwaters of Virginia's New River. In larger urban areas, we see that municipalities have the capacity to provide programming surrounding environmental stewardship. However, in rural areas we see smaller organizational structures and less human resources to fill such roles. Thus, smaller communities rely heavily on grassroots organizations to provide the means for environmental justices. This narrative exemplifies many important professional roles in environmental sustainability across the state in comparison to the mission of grassroots environmental organizations in rural Virginia and the headwaters of the New River.

Lynn Crump
Scenic VIrginia
Lynn Crump, PLA, retired from the Virginia Department of Conservation and Recreation where she worked on scenic resources with the Virginia Outdoors Plan, Byways Program, and Scenic Rivers Program. With Scenic Virginia she manages the statewide scenic recognition program which helps Virginia's communities identify their scenic viewsheds.

New River Scenic Views: You don't know what you've got till it's gone
This session is intended to help provide an understanding of the value of scenery/viewsheds and to demonstrate how communities can identify their most treasured views.Visual landscape character is an essential component of the local sense of place and community belonging. This session will demonstrate Scenic Virginia's protocol for identifying and recognizing treasured views and will go through an evaluation exercise on how to apply the Scenic Virginia Viewshed Protocol for acceptance to a Viewshed Register.

FRIDAY 1:10 PM - 2:10 PM • Darter Room *Reconnect: Mountain Valley Pipeline*

Donna Pitt
Protect our Water, Heritage, Rights

Presenters are members of Mountain Valley Watch (MVWatch), an arm of POWHR (Protect Our Water Heritage Rights), whose purpose is documenting and reporting environmental issues related to the construction of the Mountain Valley Pipeline (MVP). MVWatch volunteers perform aerial and field monitoring of MVP construction for water contamination, slope failure, soil erosion, stream channel damage, and harm to adjacent properties, in order to assure compliance with environmental regulations.

Mountain Valley Pipeline, LLC's Assault on the Headwaters of the New River

In this presentation we will provide an overview of the Mountain Valley saga and the environmental damages that have continued to occur and be mostly ignored by the Virginia Department of Environmental Quality. Without any sort of analysis of topography and geology, Equitrans took the shortest, least politically powerful route for its Mountain Valley Pipeline (MVP) to the purported energy need in the Southeast. We fought back. We became Mountain Valley Watch. And for eight years we held MVP to starts and stops because of their failure to adequately limit environmental damage.

Jonathan Czuba
Virginia Tech
Co - presenter:Donna Pitt
Mountain Valley Watch

Jon Czuba is an Assistant Professor in the Department of Biological Systems Engineering at Virginia Tech. His research primarily focuses on how sediment is transported in streams and rivers and how it affects water quality, vegetation, and biota.

Sediment Pollution in Sinking Creek from MVP activities

For over 10 days, sediment from a highly turbid spring, affected by activities for the Mountain Valley Pipeline (MVP), entered into Sinking Creek, a tributary of the New River. This presentation will describe what is known about the incident, to what extent the impact on Sinking Creek can be assessed with available information, and what is unknown that limits a full impact assessment. This presentation will mostly focus on quantifying the transport and fate of sediment delivered to Sinking Creek between January 27th and February 6th prior to sediment-control efforts. This presentation will also highlight what is not known and what limits a full impact assessment.

Ernst H. Kastning
Geologic Consultant

Dr. Ernst Kastning is a retired Professor of Geology at Radford University. He has researched caves and karst nationwide for over 50 years, including the entire Appalachian Mountain region. He has published widely on this subject.

Sinking Creek, Giles County, Virginia: A Significant Karst System under Environmental Threat

Sinking Creek, near Newport, Virginia is a quintessential stream on carbonate bedrock. It is a prime example of stream piracy during the geomorphic evolution of the Appalachian Mountain landscape. Over the last few decades, it has been subjected to potential environmental threats, including massive infrastructure projects that have been proposed to cross its valley and adjacent mountains. A new massive natural-gas pipeline has been emplaced beneath a significant stream segment in February 2025. Progress in implementing the pipeline at this location and future conditions and impacts are being monitored.

FRIDAY 1:10 PM - 2:10 PM • Salamander Room *Reconnect: Water Quality & Stewardship*

Joey Aloi
Future Generations University
Joey Aloi is the Appalachian Program Director for Future Generations, which engages in research, learning, and action for inclusive sustainable community change through agroforestry. His published academic works touch on environmental ethics, economic transition, philosophy of technology, environmental justice, agrarianism, and the role of the forest in Appalachian foodways.

Making Bank on the Bank: Finding Value in Appalachia's Riparian Buffers
The Appalachian Program of Future Generations University has developed a series of primers and videos which showcase a handful of crops grown in the riparian buffer area under a healthy forest canopy. Like many other parts of the Appalachian region, the New River watershed is a land made to serve conflicting uses. This presentation summaries and showcases the primers and videos, and explains the unique manner in which community development and conservation come together in the work of the Appalachian Program.

Tom Hammett
Virginia Tech/Future Generations University
Tom Hammett is Professor in Sustainability, Innovation and Design in the College of Natural Resources and Environment at Virginia Tech, and Research Professor at Future Generations University. His work is at the nexis of agriculture and natural resources, where he seeks opportunities for local nature-based enterprises producing non-timber forest products and specialty crops.

Realizing a dream: linking sustainable enterprise development with sound forest management - the case for Black Walnut Syrup
Virginia Tech and Future Generations University have been collaborating on projects in the region that foster sustainable nature-based enterprises. For several years, the focus has been on maple syrup, a product with a deep heritage in the New River Valley and surrounding areas. Recently, we have built on the experience with sugar maple, and have conducted research and outreach with another tree syrup - black walnut. Black walnut is plentiful and well suited to many sites in the region. Our outreach and research projects have focused on tree syrup and non-timber forest products. Many in the area request assistance to assess the potential for tree saps. Our team has developed demonstration sites and conducted outreach activities with landowners at several sites including Tazewell, Montgomery, and Giles Counties. Research is needed to gather input from landowners, evaluate the potential for sustainable economic development, and incorporate black walnut in forest management plans. We will discuss black walnut syrup' potential to foster sustainable development, build community resilience, and ensure sustainable land management.

FRIDAY 2:20 PM - 3:40 PM • Darter Room *Reconnect: Technology & Ground Truth*

Alexander Miele
Virginia Tech

Linking Streamflow Trends with Land Cover Change in a Southern US "Water Tower"

Characterizing streamflow trends is important for water resources management. Streamflow conditions are critical drivers of all aspects of stream geomorphology, sediment and nutrient transport, and ecological processes. Using the non-parametric modified Mann-Kendall test, we analyzed streamflow trends from 1996 to 2022 for the Southern Appalachian (SA) region of the U.S. The forested uplands of the SA receive high amounts of rain and act as a "water tower" for the surrounding lowland area, both of which have experienced higher than average population growth and urban development. Our results show that 42 drainage areas are experiencing increasing trends in their precipitation, and 1 is experiencing a negative trend. A total of 71 drainage areas are experiencing increasing trends in either their annual streamflow minimums, maximums, medians, or variability, with some experiencing changes in multiple. From our models, it is suggested that agricultural expansion is associated with increasing minimum streamflow trends, but increasing precipitation is also positively linked. With this information, water managers would be aware of which areas are experiencing changes in streamflow amounts from LCC or precipitation and could then apply this in planning and predictions.

Andrew Foy
Department of Geospatial Science, Radford University

Using Deep Learning to Detect Land Cover Change and Correlate with Water Quality for the New River

The land cover composition of a watershed is a critical multivariant factor that affects the water quality of river systems. There have been numerous studies on land cover change in the New River Basin, but most use low resolution satellite imagery, are not recent, and don't directly correlate to changes in water quality. This research investigates land cover change in the New River-Peak Creek HUC10 (0505000115), which encompasses Claytor Lake in Virginia, from 2010-2022, using high resolution orthophotography and deep learning. Advancements in AI have led to expansive growth in the applications of deep learning for remote sensing. There are new deep learning models, which are excellent at learning and characterizing complex land cover semantics, producing high-quality land cover data. This paper reviews the observed benefits of using deep learning methods and demonstrates the applications for assessing land cover effects on water quality. The land cover change in the watershed and the riparian buffer zone of HUC10-0505000115 were statistically analyzed to detect/predict changes in water quality data. There were noticeable benefits to using deep learning to analyze land cover change, but challenges remain in correlating those multivariant changes to statistically significant differences in water quality.

FRIDAY 2:20 PM - 3:40 PM • Darter Room *Reconnect: Technology & Ground Truth*

George Allen
Virginia Tech
Dr. George Allen is an Assistant Professor in the Department of Geosciences at Virginia Tech. Dr. Allen received a PhD from UNC Chapel Hill in 2017. He is the head of the Global Rivers Group at Virginia Tech, which focuses on river and lake processes using satellite observations and models.

The State of Global Rivers and Lakes: Monitoring Surface Water Resources from Space
Rivers and lakes serve as a primary source of water to humans and freshwater ecosystems yet they are being dramatically impacted by human activities. This talk will review the current understanding of the state of rivers and lakes at the global scale including recent work showing changes in the influx of sediment into waterways, the global boom in dam construction, and the decline of water storage in large lakes.

Yohtaro Kobayashi
Virginia Tech - Biological Systems Engineering
Yohtaro Kobayashi is a PhD student in the Department of Biological Systems Engineering at Virginia Tech. Starting from his time as an undergraduate research assistant, he has utilized remote sensing at every step of his academic research career. His interests with remote sensing lie in water quality and water quantity.

Estimation of Light Availability on River Water Surfaces using Remote Sensing and Geospatial Data
Light availability on water surfaces is important for water quality and aquatic ecosystem metabolism. It directly impacts the amount of photosynthesis that occurs which has a control on the nitrogen and carbon cycling. The amount of sunlight that reaches the surfaces of water bodies depends on atmospheric conditions, topography, channel azimuth, and the density of canopy cover. Estimating light availability for a single location is challenging as it requires deploying high-frequency light monitoring sensors. However, estimating at a larger scale, such as the New River network, is impractical and requires modeling to extract estimates.

Here we present results from a new light availability model that was adapted from the StreamLight model by Savoy et al. (2021), applied to the Contiguous United States and by extension, to the New River and surrounding streams. StreamLight is driven by in situ measurements for site parameters and uses remotely sensed and modeled data for downwelling shortwave radiation flux, leaf area index, and riparian canopy height. If in situ measurements are not available, StreamLight assumes that the channel conditions are bankfull with steep slopes. Our adapted version of StreamLight is fully driven by remotely sensed data and model driven hydraulic geometry estimates to approximate river water and channel geometry. An estimate of light availability will assist in understanding the conditions of the surrounding river network around the New River.

FRIDAY 2:20 PM - 3:40 PM • Salamander Room *Reconnect: Perspectives*

Cameron Lockett
Virginia Tech
Co - presenter: Cameron Braswell
Virginia Tech

Lockett is a master's student at Virginia Tech studying how invasive species affect symbiotic relationships. Their studies focus on invasive crayfish in the Virginia Mountain Lake Region and how they impact symbiotes found on native crayfish in the region.

New Relationships: New Problems

Symbiosis is integral to the life history of most multicellular organisms. The potentially disruptive effects of invasive species on native host-symbiont relationships is an emerging global change threat. Invasive species compete with natives for essential resources such as food and habitat. Another resource invaders may affect are native symbionts. Sinking Creek & Stroubles Creek, two streams that lead into the New River, are experiencing the effects of invasive hosts on native ectosymbionts. In our study we examined the prolonged effects of native symbionts (branchiobdellidan worms) on invasive and native crayfish hosts. Our results show that growth rates vary between the three species under similar experimental conditions. Invasive hosts can alter native symbiont and host populations depending on their relationship with native symbionts. This interaction can change the biodiversity and landscape of the New River.

Stella Cybulski
Appalachian State University: HOPE Lab
Dr. Brooke Towner
Appalachian State University

Cybulski is finishing a Master of Public Administration focusing on nonprofit management at Appalachian State. She worked eight years in the nonprofit sector before returning to school full-time to further her education with the dream of lifting up the nonprofit sector. She will be a Ph.D. candidate at Clemson University beginning Fall 2024.

Chasing Bugs not Balls

Spending time in nature settings and being physically active have positively impacted children's and adults' physical and mental health. The United States Department of Health and Human Services recommends 60 minutes of daily physical activity (PA) for children (2018). Today, only 24% of children meet that requirement. In addition to promoting physical and mental health, spending time in nature and PA has been shown to have brain health benefits for children improving cognition and academic performance. This session will share a recent study conducted using leisure intervention of physical activity and nature to boost students' academic performance, physical fitness, and mental health. The study investigated PA levels throughout the school day, the influence of classroom (indoor/outdoor) setting on PA levels, teachers' perceptions of student behavior/engagement/content knowledge, and the influence of classroom setting on student enjoyment. Exploring innovative strategies and encouraging teachers to use movement/PA in outdoor environments has the potential to lay a foundation for promoting the well-being and quality of life of our children in elementary schools

FRIDAY 2:20 PM - 3:40 PM • Salamander Room *Reconnect: Perspectives*

Continued

Benjamin Erlandson
The Upper New, Inc.

Dr. Benjamin Erlandson spends as much time as possible outside, exploring the New River Basin, switching gears between fiction, nonfiction, and visual arts. As a reader, a writer, a photographer, a filmmaker, and an independent scholar, Ben constantly explores intersections of narrative, knowledge, belief, learning, assessment, and behavior change.

Wilderness and (the Coddling Of) the American Mind: Can we recreate responsibly?

To understand responsible recreation in the 21st century, we first explore connections between Wilderness and the American Mind (Nash, 1967) and The Coddling of the American Mind (Lukianoff and Haidt, 2018), including observed and potential manifestations of the "three great untruths" and several forms of distorted automatic thinking. Ingold's (2018) anthropological "terms of environmental engagement" will be compared with demonstrations of self-efficacy (e.g. Bandura) and the subjective perils of self-assessment. Considering this current age of Surveillance Capitalism (Zuboff, 2018), taken to the extreme of Surveillance Ecoism, how far will we need to go to make ourselves responsible for our individual and collective actions as a species? Example cases within the Upper New River Basin will serve as pragmatic demonstrations of potential learning experiences for concepts of responsible recreation discussed throughout the presentation, including a longitudinal multi-use proposal for the currently defunct Bluffs Lodge in Doughton Park, as hub for interspecific basin boundary agency and transactional experiences.

Rick Van Noy
Radford University

Rick Van Noy is a professor of English at Radford University and the author of four books, including Borne by the River: Canoeing the Delaware from Headwaters to Home. He is a past organizer of the symposium and frequent New River paddler.

Borne by the River

What do rivers mean to us culturally? What do they mean to us spiritually? How do our lives braid together with rivers? What is to "read and run" a rapid? This session will be a reading from Borne by the River (Cornell UP, May 2024). The book is about the Delaware, not the New, however Van Noy is a long-time paddler of the New and helped revive the New River Symposium in 2007 with Rick Roth. Van Noy will talk about the history and culture of the Delaware River, and suggest comparisons to the New.

3:45 - 4:00 Closing Remarks in the Walleye Room

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New River Conservancy