



## A National Model for Urban Stream Restoration

by Dr. John Field, PG, and Peter Carney

Restoration of urban-impaired streams in the United States presents unique challenges from both a watershed management and scientific perspective. How can channel processes be returned to a natural state in a setting where many landowners are typically involved, numerous regulatory requirements must be satisfied, and the watershed stressors causing degradation of the streams remain in place? These and other issues had to be addressed as part of a recently completed stream restoration project on a portion of Long Creek in the heavily developed area near the Maine Mall in South Portland, Maine. The process

*Figure 1. Google Earth image of a portion of the Long Creek Watershed showing the location of the restoration reach and upstream reference reach.*

of getting to the finished result on Long Creek is considered by the United States Environmental Protection agency (US EPA) as a potential model for urban stream restoration throughout the United States. As described below, the restoration of Long Creek first required an understanding of what the problems were before devising and implementing solutions to resolve the identified issues both from the management and scientific perspectives.

*(continued on page 14)*





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Articles are not edited for content and may not reflect the position, endorsement, or mission of RMS. The purpose of this policy is to encourage the free exchange of ideas concerning river management issues in an open forum of communication among the RMS membership. Unless indicated, points of view are those of the author and not RMS.

## Executive Director's Eddy

### A few thoughts...

#### *Responding to rivers closing, then opening*

As the nation seeks stability in the face of our response to the COVID-19 pandemic, we know what we must do to prevent its spread and minimize risk to our colleagues, customers and loved ones. You and I have heard the guidance many times, born out by data.

As leaders, instructors and planners of systems that welcome people to the great outdoors, steep challenges continue as even federal guidelines must be interpreted by state or county filters. While it is pretty sad to know the absence of a narrow set of 'best' practices, never has our network been so important with both the knowledge you all possess and your eagerness to share.

To support river use management and as we return to rivers ourselves for work and play, we will continue to do our very best to offer opportunities to communicate COVID-19 response practices through messaging, posting and meeting. We appreciate our awesome network of volunteers and partners who have shared outfitter association guidance documents, samples of signage and, most importantly, their precious time as webinar or online meeting co-hosts.\* Please continue to send updates to jack@river-management.org or executivedirector@river-management.org.

#### *We know being on opposite sides of the table. Today's table is much wider.*

In the RMS community of individuals who 'study, protect and manage' rivers, members may find themselves on opposite sides of a policy or legal issue. As awkward as contentiousness can be, our professional diversity and the neutral arena that defines us can also serve us. Having met at a virtual or in-person event or participated in a river trip may help solution seeking before prospects to negotiate successfully fade.

A stretch, albeit a big one, is the wave of unprecedented energy that has emerged to demand that we face, head on, what causes us to be fearful of those who look or act differently. Calls across the

nation and around the entire world are not asking, but telling us to face the unfamiliar and threatening. Embracing such change makes reaching across an agency firewall seem like baby poop.

We are NOT a diverse community when it comes to the cultures we represent: if this were not top of mind for you this morning, look at the most recent photo of your work team, department, office, university, corporation and agency, and compare it to the one from five years ago. Yup.

While we are hardwired to nurture and protect physical, intellectual, and emotional belongings of our own tribe(s), we also possess the capacity to share and thrive with external or new communities once we identify common ground. Exercising both at once can be excruciating, and we may have never multitasked as we will, going forward.

We have not demanded of ourselves the imperatives of wholesale cultural change, for a day when Justice and Diversity can be discussed as components of our work and play versus campaigns for which sacrifice and personal harm are risked. Today is as good a day as ever to ask more from yourself, of me and of us — more than we have before. Heck, those who ain't scared of a Class III rapid should be able to navigate through fear of uncertainty — picking interim goals for the long game objective is to live together as happy neighbors and colleagues. This may involve big lifts, reinventing processes and influence in our organizations. We are breathing during a unique window of time in our lives when the risk of not leading a change may be a wholesale shift that leaves us behind.

As a daughter of an honest, hard-working, talented man who because of his looks was accused of being a threat to the United States; jailed twice for no cause; and followed by the FBI for nearly ten years subsequent to his 'parole,' I share the sentiment that Americans should not have to fear for having been born.

Given the type of work or study that surrounds you, careful listening is

## RMS President's Corner

### Greetings from the Confluence

For the last several nights and days, the sounds of river replaced the refrigerator and lawn mower noise of the home shelter. On the river, we were lulled to sleep by the moving waters and beaver activity, visited daily with local wildlife, and entertained by the water songs of the Red-winged Blackbirds. Now, at the confluence of the Uncompahgre and Gunnison, I find no better place than by these rivers to reflect on recent actions of the RMS community.

The work of RMS has never been more important or notable than during the last few months as the pandemic tentacles spread into our world. Under the leadership of Executive Director Risa Shimoda, RMS has been working diligently to support river managers navigate the uncertainty involved with implementing closures and restrictions, and then how best to reopen rivers in a safe and responsible manner.

#### *Executive Director, cont.*

probably one of your strengths. Please listen to the rising voices of a demand for Justice, hear the messages and do something to help. There will be no such thing as an act that is too small.

Thank you for being a member of this organization and for all you have contributed to our health and awesome diversity of thought and experience.♦

Risa Shimoda  
Executive Director

\* Kai Allen, Colter Pence, Jeff Novak, Judy Culver, Sheri Hughes, Amy Niles, Bob Stanley, David Cernicek, Team Confluence Consulting (Bo and Dan Shelby, Doug Whitaker), Lelia Mellen, John Wenck, Michele Tremblay, Ed Fite, Colin Maas, Nate Kluz, Jack Henderson, Helen Clough, Linda Jalbert, and others.



Risa and Jack Henderson, National Rivers Project Coordinator, continuously updated the RMS website with information from members related to river closures and openings, best practices for social distancing, safety guidance, and other public educational materials. Additionally, RMS hosted COVID-19 related meetings via virtual platforms to share current practices and interact with river managers, consultants, outfitters, private boaters and partners. Thanks, Risa for leading the charge and to the many members who were involved with organizing and facilitating discussions and to all who shared information and/or participated in the virtual gatherings.

In keeping with RMS tradition, we took a pause in the action to celebrate the 2020 RMS Awards winners. This year, we celebrate four individuals whose contributions represent over 100 years of dedication to river protection and stewardship. Tim Palmer, educator, advocate and author of *Wild and Scenic Rivers: An American Legacy* received the Frank Church Wild and Scenic Rivers Award for his lifetime of work in support of the National Wild and Scenic Rivers System. Angie Tornes, with the National Park Service Rivers and Trails Conservation Assistance program received the Outstanding Contribution to River Management Award for her 30 years of contributions to partnership development, public education, restored flows, and water trails in the Midwestern states. Bob Stanley, USFS Tuolumne River Ranger, received the River Manager of the Year Award in recognition for his leadership in river stewardship, leading by example, and working attentively with all user groups. James Vonesh, PhD Professor at Virginia Commonwealth University, was awarded

Outstanding Contribution to the River Management Society for his leadership and commitment to the RMS student-involved River Studies and Leadership Certificate Program, and for co-chairing the 2020/2021 RMS Biennial Symposium. Take time to read the article in this Journal that details the accomplishments and contributions. On behalf of the RMS Board of Directors, congratulations to Tim, Angie, Bob and James; thanks for your contributions to RMS and rivers nationwide.

The public's yearning for connections to rivers, open spaces and wild lands grows stronger each day. As we move deep into the summer season, more and more people escape from home shelters, and new and different river management challenges arise. The good news is that the public now have those opportunities to enjoy rivers safely and responsibly due to the practices put in place by many of you. Moving forward, our community will build upon the resources and shared learning experiences to address the many challenges ahead. We have each other.

Thanks for all you do. Stay healthy, safe and positive.♦

Sincerely,

Linda Jalbert  
RMS President





## Angie Fuhrmann is New River Training Center Coordinator

Risa Shimoda announces that we have selected Angie Fuhrmann to be the new River Training Center Coordinator. Angie replaces Steve Storck who left the position in January. Angie brings a diverse background having worked as a river guide for a number of years, including on the Rogue River, and having taught college level courses online.

In her cover letter sent with her resume, Angie said, “The best decision I’ve ever made was becoming a river guide. I could go on about the positive aspects it has brought to my life, from the confidence I’ve gained to the skills I’ve acquired. Yet, the greatest reward is being part of a supportive, inspiring, and undoubtedly unique network of river professionals.”

Angie holds a bachelor’s degree from Northern Arizona University and a Master’s Degree from Colorado State University in Collaborative Conservation and Anthropology. In addition to her guiding experience on the Rogue River, Angie conducted graduate research along the headwaters of the Amazon River in Peru, coordinated ecological knowledge workshops in Guatemala, and guided kayak trips in Baja California, Mexico. She also was the assistant Latin American Operations Manager and Whitewater Rafting Guide for ROW Adventures for five years. Most recently, Angie was the Youth Education Programs Coordinator for the Siskiyou Field Institute.

A resident of Jacksonville, Oregon, Angie will be joining the RMS staff on June 1. As all of our employees work from home, Angie will be able to rapidly integrate with the RMS staff and board and bring her skills to bear on coordinating the River Training Center as we move, temporarily, to an entirely virtual training environment. In addition to her other experiences, Angie has developed and taught 26 undergraduate anthropology courses entirely remotely using a variety of digital platforms.

All those involved with the River Training Center can be expecting to hear from Angie in the next few weeks as she comes on board and takes over the reins of this important program. Risa Shimoda was assisted in interviewing candidates and making her selection by James Vonesh of Virginia Commonwealth University representing the River Studies and Leadership Program, Steve Chesterton ex-officio RMS board member and Forest Service and Interagency Wild and Scenic River Coordinating Council liaison to RMS, Connie Meyers, retired director of the Arthur Carhart Wilderness Training Center, and RMS Secretary Helen Clough. Welcome, Angie!♦

## River Training Center Cadre Meets

River Management Society hosted a virtual meeting of the River Training Center (RTC) Cadre on May 13, 2020. About 25 people attended. Participants reviewed proposed course offerings, then focused discussion on the transition from in-person courses to virtual platforms.

Jodi Leingang shared her experience transitioning a planned one-week in-person workshop to a virtual event. They shortened the agenda to no more than five hours a day. They agreed to be flexible and understanding; realizing that folks might be working at home where they needed to address needs of family members and pets. They held breakout groups with mixed results. They were able to meet most, but not all, of their objectives.

Jodi pointed out there are three defined roles with a virtual event. It is essential to have a facilitator, someone running the technology in the background, and one or more notetakers. Jodi reminded us to be patient with the technology and the people. She suggested mixing up formats — PowerPoints, videos, maps. They had GIS and other technical support.

Other participants, including Cassie Thomas, Steve Chesterton, and Tom O’Keefe, shared recent experiences with virtual platforms. We recognized the need to use platforms that work for government employees and non-government participants.

We talked about having an archive of the training center’s presentation materials for all to share and review. RMS is researching options, and currently uses Huddle and a Google Drive. At this time, the archive is not complete nor organized in a fashion where materials are readily accessible to those not involved in a specific session. An area in the background of the RMS website has been established, but it is not populated with information. We are looking for a way to develop and maintain ongoing communication, and agreed that we need training on how to use the various virtual platforms.

RMS followed up by updating the spreadsheet of planned and proposed course offerings along with potential developers and instructors. The spreadsheet and notes from the webinar were sent to participants and others who have indicated interest. Recipients were asked to identify future interest in courses and availability to assist. The new River Training Center Coordinator, Angie Fuhrmann, will be following up in the near future.♦



## Bekah Price is New Communications Coordinator

RMS is excited to announce the arrival of Bekah Price to RMS as our Communications Coordinator. This position is brand new, so while she will be with us on a part-time basis, her contribution to the quality and consistency of our outreach capability is certain. Bekah brings to RMS skills as a freelance copy editor, reporter, and writer. She has developed the public relations program for a city school system in Eastern Tennessee, applying strategic branding to audience analysis, website development, traditional and social media, and event planning and support.

Bekah has also worked and led teams as a raft guide for ten years on Tennessee’s Nolichucky River. As such, her discipline, responsibility and grit needed to engage the coordination of many people and projects will complement her experience offering responsive customer service necessary to support and serve volunteers and partners.

Bekah graduated Magna Cum Laude from East Tennessee State University with a B.A. in Mass Communications, academic scholarships, and as a Kingsport-Times News Scholarship recipient. She was also name Kiwanian of the year in her local district. Welcome, Bekah!♦



# RMS Presents 2020 Awards at Virtual Events

We had planned to celebrate the recipients of this year's River Management Society awards at the symposium in Richmond. Instead, we were able to honor the award winners during two virtual events in May. Dr. James Vonesh received the Outstanding Contribution to River Management Society Award during the virtual poster session we held on May 12. The audience included a number of his students and colleagues from some of the other River Studies and Leadership Certificate schools. Through the Zoom platform we were able to see him, and Risa Shimoda shared what his plaque will look like.

During the River Managers Forum on May 14, RMS President Linda Jalbert announced the winners of the other three awards and described a few of their amazing accomplishments. About 100 of their colleagues were present on the webinar and listened in as Linda recognized Tim Palmer, recipient of the Frank Church Wild and Scenic River Award, Angie Tornes, recipient of the Outstanding Contribution to River Management Award, and Bob Stanley, recipient of the River Manager of the Year Award.

Information on the awards and the amazing accomplishments of James, Tim, Angie, and Bob follow in this article. They will be the first RMS award recipients to have plaques with the new RMS logo. Former RMS President Dennis Willis continues to arrange and pay for fabrication and engraving of the plaques. They will be sent to the recipients when completed by his new fabricator in Utah.

## Outstanding Contribution to River Management

This award recognizes a history of contributions to the greater field of river management. Angie Tornes who works for the National Park Service in Milwaukee was selected as the winner. Angie has dedicated her career to protecting rivers and enhancing opportunities for public access. She has served in two aligning capacities in the National Park Service supporting and providing technical assistance to enhance recreation and conservation through the Hydropower and Rivers, Trails, and Conservation Assistance Programs for 31 years. Angie's exceptional leadership and technical expertise has benefited many communities in Wisconsin and across the Midwest. In her home region, partners affectionately refer to Angie as a "real river hero" for all of her work in negotiating recreation access. She is a strong river advocate specializing in partnerships, negotiation, and achieving win-wins.

Angie's work has resulted in enhanced partnerships, restored flows for recreation, new river access sites, recreation facility improvements, new land and water trails, and interpretive programming. She led recreation planning in partnership with We Energies for the Twin Falls Project. Based on Angie's recommendations and support, We Energies created a new popular regional park with new trails, accessible fishing area, canoe put-in and take-out, and interpretive kiosks.

Angie negotiated recreation enhancements for the Jim Falls Settlement Agreement with Excel Energy. These enhancements included recreation flow releases for the Chippewa River, canoe portages, universal access, shoreline fishing access, and trails.

Angie Tornes



The agreement dedicated \$4 million to fund natural resource protection. Many of the river access areas were incorporated into a water trail for the community.

Angie collaborated with partners on Grandfather Falls to study recreation use and boating potential along the Wisconsin River. This work ultimately resulted in establishing recreation flow releases for boating, a new trail to the river from the Ice Age Trail, and a protection zone along the riparian corridor.

She worked with the Inland Sea Society and the surrounding communities to establish a 90-mile water trail along the Bayfield Peninsula and Wisconsin Lake Superior shoreline. In collaboration with the Fox River Ecosystem Partnership, she facilitated a community planning process to develop a 200-mile bi-state water trail highlighting paddling as a way to explore the natural and cultural resources.

Angie is also a national leader in river management and has made substantial contributions to national guides and projects. Angie provided technical expertise and served on a team to guide the development of the River Access Planning Guide. This innovative guide was released in October 2019 and provides a framework for developing access to the river with users in mind. Angie organized the first training on the river access guide in the Ozarks in November 2019. This training served 40 river professionals in the Midwest region and helped advanced the river access planning field.

Angie served on a team to help guide the development of the Good, Bad and Unusual River Access Database. Angie helped develop and populate the national database with launch sites in the Midwest region. These examples will serve the national community of river managers. She also leveraged resources and facilitated the process to build the National River Recreation Database for the Midwest region resulting in hundreds of water trails and other recreation rivers being added to the database enabling the public to have easy access to recreation information near them.

## Frank Church Wild and Scenic Rivers

This award recognizes contributions focused on the management, enhancement, or protection of designated Wild and Scenic Rivers. Tim Palmer was selected for this award in 2020.

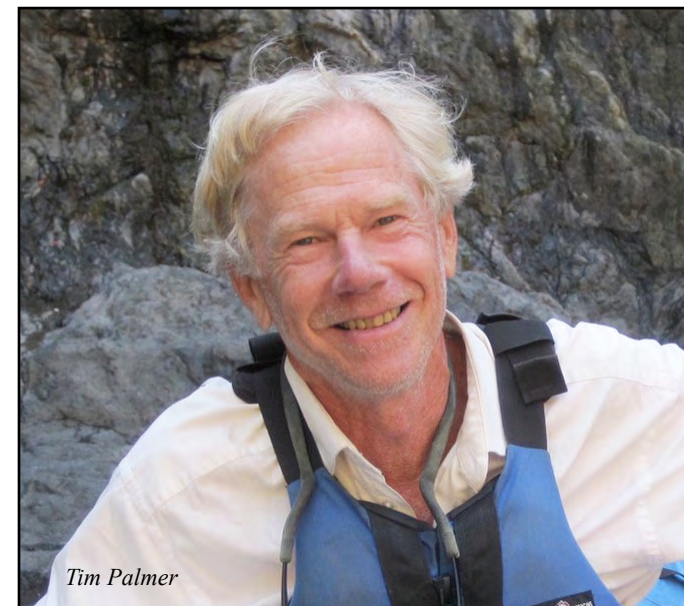
In over 40 years of working as a writer and photographer, Tim has published 25 books about the environment, the outdoors, and adventure travel. Tim says, "In my photography I try to capture images that make nature come alive in people's minds. I like to show not only what nature is, but also what it does and how it works. Ultimately, I want my photos and writing to instill a sense of wonder, passion, and commitment to caring for the earth and all its life." Tim considers his recent book, *Wild and Scenic Rivers: An American Legacy*, his most significant contribution to Wild and Scenic Rivers.

When called upon, or when an opportunity arises, Tim has helped build local partnerships to protect rivers. His work on the Kings and South Yuba in California was instrumental in getting them designated as Wild and Scenic rivers. He has helped conservation groups in Canada, testified on rivers in the U.S. Congress and in various states, and been the keynote speaker at many national river organizations' annual meetings. Tim has donated books to support river conservation causes. He has presented innumerable slideshows in a variety of venues, spoken at national conferences, including RMS symposia.

Tim has been a vital participant in educating the American public on the importance of natural rivers in our lives. During the 50th anniversary of the Wild and Scenic Rivers Act, Tim wrote a series of articles for the RMS Journal on what the Wild and Scenic Rivers program does for river conservation nationwide.

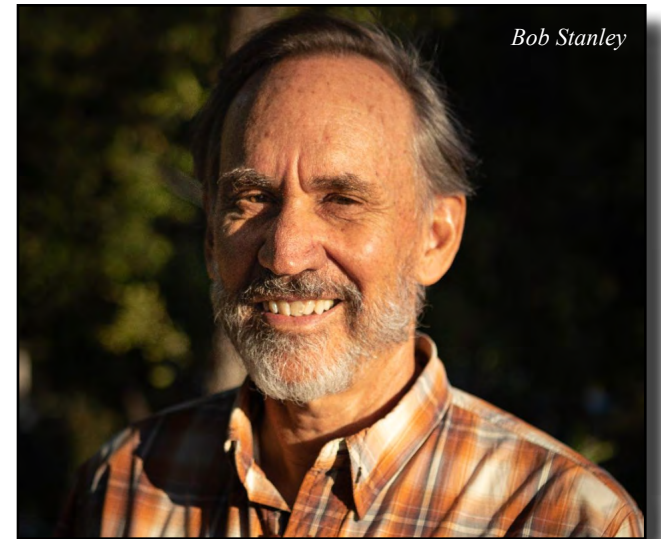
Tim's many books, articles and superb photos have reached and educated the public in a variety of ways over his long career. He has made himself available to state interests, local conservation organizations and interactive participatory groups to talk about protecting rivers and his love and enjoyment of being on them. His talks and slideshows at conferences and interest groups are well known by river lovers throughout the country.

Tim spent much of the 50th anniversary year of the Wild and Scenic Rivers Act lecturing on the importance of the system and sharing information through his books, lectures, and articles including the aforementioned series in the RMS Journal.



Tim Palmer

Bob Stanley



## River Manager of the Year

This award recognizes contributions that are field-oriented and location-specific, with a focus on recent accomplishments. Bob Stanley who works for the Forest Service in California was selected to receive the 2020 award. Bob is the lead river ranger on the Stanislaus National Forest, and his primary duties have been on the Upper Tuolumne, Lower Tuolumne, and North Fork Stanislaus rivers. Past work roles have included leading expeditionary hiking and river trips in North and South America; managing the Patagonia hiking program and Middle Fork Salmon whitewater program; and supervising wilderness operations of wilderness rangers and trail crews in the John Muir Wilderness for both the Mt. Whitney and White Mountain Ranger Districts.

Over the past few years, Bob has responded to the need for access improvements along the rivers where he works — focusing on the safety and utility of access routes to put-in and take-out sites on the Upper and Lower Tuolumne, remote environments that have been impacted by use, neglected from being a maintenance priority, and without a community voice. He has also seen unprecedented environmental shifts in the microcosm of the river that few see or understand, and has sought ways to share information from experts so that others who care about the 'T' may support its health and sustainability.

As the caretaker and host for those who visit national treasures like Cherry Creek and the Grand Canyon of the Tuolumne and, importantly, involved when emergencies arise from a river incident or accident, Bob has taken an attitude of care far beyond the checklist in his workplan.

Those who know the river and the forest have seen him share information broadly about issues affecting safe enjoyment of the river, and the health of the resource itself, inviting them to lend a hand, donate time, equipment and materials, and maintaining a dialogue that supports 'the village' that must work together for both the health and accessibility of these resources.

He has completed several enormous projects in his time in Groveland, simply because they are important. Two are the constructed access improvements at Meral's Pool (take-out for the Cherry Creek section and put-in for the Main Tuolumne) and the put-in to the exquisite Cherry Creek run. He has successfully recruited support from outfitters, guides, local businesses, the local public utility, Hetch Water & Power, and other volunteers. In 2019, the Forest Service Regional Office supported the Cherry



Creek project with federal funds, in part as a result of Bob taking his leadership and staff down the river during the Wild and Scenic Rivers 50th Anniversary year (2018). To encourage Forest Service staff to complete the paperwork and approvals for financial support last March, he wrote this poem:

“March has arrived! Are things well inside the place? Hope cobwebs aren’t using unused space!  
Yes, we swim in bureaucratic haste, busy with molehills piled on plates  
We can do the ramp at Cherry Creek; we can get approvals and help we seek  
We have most materials that we need, and 13 thousand to do the deed  
Our spirit accepts work that’s more and more, while burnishing our can-do legend lore  
Let’s get that letter to the file, planning and logistics will take awhile  
I write this entreaty with respect that’s due, persistence alone gets us thru  
Let’s get this project by done by fall, let’s sound the clarion horn ... for all.”  
— Bob Stanley

In 2019, Bob organized the most significant Pacific Chapter event in nearly a decade, *Rivers of the Pacific Slope Symposium* (April 19-21), hosting over 30 guests who traveled from far and wide to attend. The program, which had been planned for nine months or more, was challenged just beforehand by high water levels, necessitating major last-minute logistical changes. Daunting as this may have been for some, alternate plans were made easy by our lodging hosts, outfitter partners, and Bob’s reputation for thoroughness and thoughtful expertise.

Participants included river managers, scientists, historians, and regulators in a classroom setting before running the Main Tuolumne. The well-run river trip included a helicopter evacuation, and comments posted on the trip page by Brian Collins, PhD, PE, US Geological Survey, and Kristina Rylands, Regional Director, Naturebridge, reflected the sentiments of many — thanking Bob for his leadership and the expertise of his crew of experienced boaters.

Outfitter partners have wholeheartedly supported Bob’s nomination for this award: Scott Armstrong, Owner, All-Outdoors said, “I give Bob my 120% vote for River Manager of the Year. He is invaluable. Every year he is on the job something good is changed and accomplished.”

Marty McDonnell, Owner, Sierra Mac River Trips said, “He is an amazing ‘Can Do’ guy ... I wish more folks had the excitement and intelligence to serve the future needs. Bob is very worthy of such an award. I’m 100%+++ supportive.”

**Outstanding Contribution to RMS**  
This award recognizes contributions to the success of the River Management Society itself. James Vonesh, PhD, a professor at Virginia Commonwealth University in Richmond, Virginia, is this year’s award winner. He has contributed significantly to RMS as a leader in the

River Studies and Leadership Certificate (RSLC) Program by embracing strategic possibilities, welcoming inclusive collaboration, leading by example, and celebrating success with a large dose of modest confidence and a twinkle of curiosity in his eye. His work has accelerated the inclusion of students as we meet, get to know, and benefit from tomorrow’s river leaders, whether scientists or river managers, or both!

A freshwater ecologist, Associate Professor, and the Assistant Director of the Center for Environmental Studies at Virginia Commonwealth University (VCU), in Richmond, Virginia, James has been a member of RMS and advisor for the River Studies and Leadership Certificate for three years during which VCU, the first participating institution located east of the Mississippi in 2017, has grown to become the largest of the nine participating programs, roughly forty percent of the RSLC participant body. Three students have completed the certificate program; eight are expected to complete the program in 2020, and nine others are pursuing program classroom, internship and presentation requirements.

James recruits, engages and involves RSLC students in events to raise funds for extended river classroom programs and both attends to their needs or special interests related to ‘river work’ and gives them latitude to grow as RSLC leaders themselves. Importantly, RSLC events have placed the River Management Society and its programs before members of the public to grow awareness of the program by shining a light on his

certificate students. His team of instructors and students commanded a noticeable presence at the 2018 River Management Symposium and will play an important role leading and volunteering at the upcoming Symposium in Richmond.

He has led the development of the *River-based Immersive Education & Research (RIVER) Field Studies Network* which seeks to launch a national group of universities offering immersive, hands-on river programs through a grant from the National Science Foundation. He serves as the lead for a core team of RSLC Advisors, the River Management Society and a few other academics and a network of supporters which includes several dozen institutions.

James is also a co-chair of the River Management Training Symposium *Mountain Creeks to Metro Canals* now to be held May of 2021 in Richmond, VA — a partnership among VCU, the Virginia Department of Conservation and Recreation, Virginia Commonwealth University, and RMS. As the ‘connection’ to the university, he has made it easy for RMS to meet and work with faculty and event planning staff.

We have James to thank for establishing a strong RSLC presence in the East, the opportunity to be part of the national consortium of river-based university programs, and a superb River Management Symposium co-chair!◆

James Vonesh



# Mountain Creeks to Metro Canals

## River Management Training Symposium

### Students Present Posters Virtually in May

by Lynne McCarthy and James Vonesh

Over 40 faculty and students participated in an online Zoom symposium the afternoon of May 12. The *Mountain Creeks to Metro Canals* Zoom symposium was created to support students that planned to share their research at the River Management Training Symposium originally scheduled for May 2020 and postponed to 2021 due to COVID-19. Eight students presented at the event, hosted by VCU Center for Environmental Studies (CES) in collaboration with Northern Arizona University (NAU) and the River Management Society (RMS). Katie Schmidt (M.S. ’20/CES) was the moderator and a presenter. Presentations included:

**Jack Ryan (VCU)** *Assessing the Feasibility of Freshwater Mussel Restoration in Urban and Non-urban Streams of Central Virginia*  
<https://www.youtube.com/watch?v=g9Tsdm7Dwm0&feature=youtu.be>

**Rachel Henderson (VCU)** *Microbial Source Tracking of Fecal Contamination in the James River*  
<https://www.youtube.com/watch?v=Mb7eaeF3dc8&feature=youtu.be>

**Ryland Stunkle (VCU)** *Flood Modeling of Riverine Rock Pools Using an Unmanned Aerial Vehicle*  
<https://www.youtube.com/watch?v=enPdtRNoOaw&feature=youtu.be>

**Richie Dang (VCU)** *Identifying Drivers of Ecosystem Production and Respiration in Riverine Rock Pools*  
<https://www.youtube.com/watch?v=HrIekJQ5iUM&feature=youtu.be>

**Andrew Davidson (VCU)** *Predicting Warming’s Impacts on Mosquito Control by Larval Predators*  
<https://www.youtube.com/watch?v=-C1-M3IYd-E&feature=youtu.be>

**Riley Swanson (NAU)** *Assessing Groundwater Resources in the Colorado River Basin: Quantifying Base Flow in the Greater Grand Canyon Region*  
<https://www.youtube.com/watch?v=JUfv7DOVEPg&feature=youtu.be>

**James Major (NAU)** *Utilizing Extant Conservation Policy to Fill Identified Gaps in Riverine Protected Areas*  
<https://www.youtube.com/watch?v=jJG6Rnw4ZBg&feature=youtu.be>

**Katie Schmidt (VCU)** *Let it Flow: Restoring Dry River Reaches in the Southeast*  
<https://www.youtube.com/watch?v=5sPb0j7hPk0&feature=youtu.be>

Questions were posed after each presentation, and a panel discussion ensued at the conclusion. Five of the students — Stunkle, Dang, Schmidt from VCU, and Swanson and Major from NAU — completed their Rivers Studies Leadership Certificate requirements with this presentation.

A surprise addition to the agenda came from Risa Shimoda, Executive Director of RMS, with the presentation of the Outstanding Contribution to River Management Society award to James Vonesh, Ph.D., Associate Professor and Assistant Director of CES, for his contributions and education in river health. (See page 8 for further details.) ◆



# Beavers, Blow-outs, and Bridges

by Tom Christopher

It was the first of November and the day began as one of the typical crisp, bright, sunny days that lull you into the false sense of hope that perhaps the aggravation of the coming winter was not worth worrying about. It was a beautiful day, with the final colors of maples and oaks falling from trees everywhere, especially since central Massachusetts had just received nearly four inches of rain in two back-to-back storms a few days before.

It was just after lunch when I received a phone call from a local produce farmer, Steve Violette, who was both a good friend and valued client who engaged our services many times over the years. Steve owns and manages Dick’s Market Gardens, a successful and popular farmstand in our area and also would bring his vegetables into eight farmer’s markets in the greater Boston area each week. “Tom, I’ve got a problem that I think you need to see. Can you meet me at the Lancaster Ave field?” “Sure, give me an hour,” I said. When I got there we walked over the old cart road that was used as access to other offsite fields that Steve had in production. The cart road crossed the Catacunamaug Brook, a perennial stream draining a substantial watershed and flowing into Lake Shirley, an important recreational resource for the community.

The stream had a culvert that had been constructed many years ago completely out of flat fieldstones, and the road bridge



Beaver dam. Photos: Tom Chistopher

itself was made out of old 8” X 12” timbers that had long bolts through the center. Needless to say the timbers were seriously deteriorated and a large, thick steel plate had been placed on top to reinforce the bridge. It was shaky but strong enough for tractors and implements to cross over the brook.

When we arrived I couldn’t believe my eyes. Beavers, our world’s most successful engineers, had constructed a dam that blocked the old fieldstone culvert and created a small pond that was nearly six acres in size. The culvert itself was seven feet wide and five and one-half feet deep so one could imagine the volume of water that would ordinarily pass through it. To make matters worse, the access road that was used to travel to other fields was now lost, destroyed completely when the force of water from recent storms over-topped the road and completely blew the road out.

Over the years our company, Christopher Environmental Associates (CEA), has had several experiences with beavers and how much impact these creatures can have when their hard work conflicts with human activities or needs. As much as I admire their genius and innate ability to create their habitat, I equally disdain how much work is necessary to deal with their construction.

In our state, Massachusetts, you just can’t remove a beaver dam; you need permits and there is a process to follow, so I immediately notified the town’s Conservation Agent Matt Marro. Once he saw the damage to the cart path and the potential for further roadway failure he understood that having six acres of a beaver pond rushing into Lake Shirley all at once might not be a good thing. An “emergency certification” was issued for the immediate repair of the roadway and removal of the beaver dam; however, I would need to meet with the Conservation Commission to develop a plan for dam removal and remediation. The Conservation Commission did approve our plan to remove the dam in stages as long as the water level in the pond would be lowered gradually in order to not carry silt and sediment into Lake Shirley or wetland areas that may lay adjacent to Catacunamaug Brook. Because this work was categorized as an emergency, CEA would have to file an “after the fact” *Notice of*



Stone culvert

*Intent* that would follow the regulations and guidance determined in the Massachusetts *Wetland Protection Act* and *River Protection Act*. CEA would also need to include the replacement of the old antique bridge with a new structure that would meet current bridge standards as part of the plan filing.

Shepard Excavating & Contracting of Townsend, Massachusetts, was selected for the beaver dam removal and rebuilding the roadway. We had previously worked with Gary Shepard and his crews and knew they had the ability get the job done. After the water level was lowered and no longer a danger to downstream resources, it was necessary to clear the debris and rebuild part of the washed out stone wall on the east side of the roadway.

Removing debris



Wall reconstruction



Clearing the debris and logs out of the roadway was a straightforward task — using an excavator with hydraulic thumb, large waterlogged tree trunks were broken up into short chunks, loaded onto trucks, and deposited elsewhere on farm property. Mud, sticks, and other debris that was part of the beaver dam were also removed in the same fashion; however, rebuilding the roadway was a bit more challenging. The east

side was completely blown out and the large rocks that were the supporting wall were gone or washed downstream out of the excavator’s reach. Fortunately, Gary Shepard was able to locate the right-sized stone at another job site in a nearby town and was able to hand-pick what we needed and deliver it to our project.

Building walls with large stone doesn’t appear very difficult when the wall is finished but it is a process that is painstakingly slow. Even when there is an excavator available to do the lifting, each stone has to be carefully placed, often turned, flipped over, cribbed, and backfilled — no easy task even under the best of conditions. Once the east wall was reconstructed and stabilized, the Shepard team trucked in large cobbles and gravel as an underlying base to the road and then topped it off with four-inch minus blasted granite rock for the final road surface.

As contractors and consultants, Shepard and CEA were very fortunate to have had several days of good weather and the beaver dam removal and road replacement was finished in just six days. This was the first phase of the project and although challenging, there was still a lot to be done if the old bridge was going to be replaced. It would be necessary to design an adequate structure that would fit within the roadway width going over the old stone culvert and still be wide enough to transport tractors and large farm implements. Since winter would soon be upon us, it was decided to spend that time talking to engineers and surveyors to come up with a plan and strategy.

Road repair



As CEA looked at this task, the obvious limitation would be the width of the roadway; at ten or eleven feet there was not much room to place a structure within the walls of the roadway just reconstructed. Over the course of the next year CEA had the site surveyed and met with structural engineers to determine what type of structure would be used. A wooden plank bridge anchored onto steel girders was one idea, and another was to cannibalize a heavy duty truck trailer frame and anchor wooden planks onto the frame. We had calculated once the old bridge was removed a concrete pad would be poured over the existing stone culverts and the steel girders or frame would rest on the pads. When this was presented to the Conservation Commission there was concern that weight on the old stone culvert sidewalls might cause their collapse. A redesign and new plan was requested — one that would not place any weight on sidewalls.



After further consideration a decision was made to use a steel and concrete reinforced bridge that would extend thirty feet in length and be placed on concrete reinforced abutments. By extending the length of the bridge, each abutment could be placed ten feet away from the edge of the fieldstone culvert and this would eliminate any stress or pressure that might cause culvert sidewall failure. Clearly, failure was not an option on this project.

Steel fabrication was not within the skill set of our company, so CEA contracted with Titan Corp. in Fitchburg, Massachusetts, to help with the design and construction of the bridge. The owner, Mike Zichelle, met with CEA at the site to get a grasp of the space limitations so he could come up with a design that would work. In his shop, using W12 X 50 wide flange steel beams he was able to fabricate a 30-foot long bridge with outriggers that extended the width to ten feet. The bridge deck was a galvanized composite with rebar spaced at one foot in both directions. Once completed, the entire bridge would be loaded onto a flatbed trailer, trucked to the job site, and set in place by a 60-ton crane. Titan would also fabricate the concrete forms that would be set in place by Gary Shepard's crew.

Excavation for the bridge abutments began on the south side of the brook as the excavator tracks straddled across both culvert sidewalls and the material was loaded onto a truck. The final tight space needed for the abutments had to be dug by hand and shoveled into the waiting excavator bucket. The crew had barely eighteen inches on each side of the abutment forms to work with or the stone road sidewalls would collapse. Once the excavation was done, the bottom rough grade was checked with a transit and the ground was compacted with a vibrating packer.

The heavy pre-constructed forms were brought to the site then carefully placed within the excavated area and the crew began the task of lining up both abutments. When one is working with steel there is not much room for error — it doesn't bend, and unlike working with wood construction, it is not easy to take out and cut a new piece that might fit better. It was critical that both bridge abutments line up correctly — that each corner was squared and both were perfectly level over a distance of thirty feet. Once the concrete was poured and set, and the forms

Forms over brook



stripped from the abutment, there would be less than one inch of play available for the final bridge placement.

Once the bridge abutments were in place and secured, the next task to complete was the removal of the old bridge. This was another case of dealing with unanticipated consequences and there was concern about three possible failure points. The first was uncertainty that the old wood timbers, even though bolted together in some fashion, would break apart or disintegrate when they were lifted off the fieldstone culvert walls. The second issue was, once lifted off of the culvert sidewalls, would any of the sidewall collapse into the stream? It would be problematic if it were necessary to have the crew working in water to retrieve fieldstone and then rebuild the sidewalls. Finally, there was the potential of portions of the old bridge falling apart during the move, striking one of the abutments, and knocking them out of square or off grade. One could tell each member of the crew was nervous and everyone knew there would be only one chance to get this right.

Removing rotted base of bridge



As we pulled off the heavy steel plate that stretched across the old wooden timbers, we discovered that we had neighbors watching us work throughout the project. We counted eight or ten large water snakes that had been living under the timbers until we arrived, and they quickly slithered away or dropped into the stream when the timbers were pulled apart.

Once the old bridge was removed and we were able to determine the condition of the top of the stone culvert wall, there was concern that if water were to collect behind the stone, the seasonal freeze-thaw process would eventually cause the culvert to collapse into the streambed. It was decided to clean the soil from the top of the stone and install a concrete cap. Originally proposed as a support for the bridge, the cap would now serve as a stabilizing function and a deterrent to the weathering process.

With the site stabilized, and the abutment forms finally poured and cured, it was time to set the bridge in place. To prepare for the move, CEA arranged for a police detail to manage the heavy traffic on a busy country road and also worked with the local DPW to erect safety signage for unloading the bridge. Mike Zichelle had arranged for a crane with a 60-ton capacity to meet



us at the site and the crew set up stabilizing pads once the crane was in place. A short time later, the bridge arrived on the back of a 40-foot trailer, chains were removed, and the crew started to rig the bridge with cables to lift the bridge in a level and stable position for moving.

Two tag lines were tied to the bridge to keep the load from spinning or swinging back and forth, and the crane slowly lifted the bridge from the truck deck. Once free, it turned clockwise to position the bridge directly over the concrete abutments. There was tension in the crew as the steel frame was lowered... it was "truth time"... were the abutments set properly and would the frame fit? With a great sigh of relief, not only did the bridge fit, each abutment left just one-half inch to spare. That's pretty good work for a first-time effort.

The three most stressful phases of the project — excavation, abutment construction, and bridge placement — were now complete, but there was still more work to do before the project would be finished. The concrete deck needed to be poured and the grade of the road would require elevation to meet the level of the bridge. Another subcontractor was hired and tasked with finishing the deck of the bridge, and the Shepard crew delivered material and graded the road to bring the job to completion.

Looking back, CEA tries to analyze what we may have learned in tackling a job with so many variables and opportunity for failure. Regardless of what you think you know, it is important to be aware of what you *don't know* about a site. One must have reliable resources to fill in those gaps and work with experienced subcontractors who know how to get the job done. Safety is critically important and no one wants to see an employee or subcontractor hurt in a fall or because work conditions may be challenging. Working in and around water makes conditions much more difficult, but it can be done safely. Construction sequencing is critical and no project can afford to have expensive equipment sitting idle or construction crews waiting for materials to arrive. That being said, plan for delays and have other tasks available when those delays happen.

To put a closing perspective on this difficult project, I'm glad we took the challenge and grateful the work was completed without incident. The project was difficult but its success preserved access to offsite food production, protected a headwater stream, and avoided pollution of Lake Shirley. It also demonstrated that working within the framework of local and state regulations, it is possible to have a successful outcome in spite of those constraints. This year, a new family of beavers has taken up residence and is busily working away building a new dam. ♦

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*Management perspective*

Long Creek is a coastal, freshwater, low-gradient, urban stream with a drainage area of 3.5 square miles in the heart of greater-Portland, Maine’s shopping and commercial center. Although development of the watershed began in the 1940s, water quality impairments began to be formally documented in Long Creek in the 1980s. The federal Clean Water Act (CWA), first passed in 1972, required states to adopt water quality classifications. The Maine Department of Environmental Protection (Maine DEP) subsequently devised a four-tier classification system for fresh surface waters in the state including classes AA, A, B, and C where AA waters are of the highest quality. Long Creek is primarily comprised of Class C waters requiring suitable habitat for fish and other aquatic life (*e.g.*, macroinvertebrates). Some pollutant discharges are allowed to cause some changes to aquatic life as long as the receiving waters are only minimally affected.

Under Section 303(b) of the CWA, states are required to regularly list streams that do not meet their state water quality classification. In 1998, Maine DEP first listed Long Creek as an impaired water body, a regulatory status that remains in place to this day. Subsequent studies by Maine DEP (DEP, 2002) and the US EPA (EPA, 2007) documented the causes of impairment to be low dissolved oxygen levels, decreased large woody debris, high water temperatures, high suspended solids, and high levels of metals with many of these linked to impervious surface areas that currently encompass 28 percent of the watershed. To ensure action was taken to address the identified impairments, the Conservation Law Foundation (CLF) filed a petition with US EPA in 2008 (CLF, 2008) requesting that stormwater discharges from impervious surfaces within the watershed be required to obtain National Pollution Discharge Elimination System permits under the requirements of the CWA. Subsequently, US EPA determined that stormwater discharges from the dozens of properties with one acre or more of impervious area required a permit for the discharge of stormwater, presenting a problem to the numerous individual landowners in the watershed with limited experience in dealing with regulatory matters.

Ultimately, conditions in the stream channel largely determine whether the streams are listed as impaired. Maine DEP has developed a biomonitoring methodology for correlating benthic macroinvertebrate populations with the attainment of the four water quality classes. Attaining Class C (and Class B in small portions of the upper watershed) conditions will be necessary before Long Creek will be removed from Maine DEP’s list

of impaired streams and will require coordination between numerous landowners, towns, and regulators to implement stream restoration projects that improve conditions for those macroinvertebrate species indicative of suitable water quality and overall stream health.

*Science perspective*

A geomorphic assessment was completed of Long Creek to understand the existing conditions on Long Creek and how human activities in the channel (*e.g.*, undersized stream crossings), on the floodplain (*e.g.*, addition of artificial fill), and over the larger watershed (*e.g.*, impervious surfaces) have altered natural channel processes and morphology (*i.e.*, shape and dimensions). The assessment ultimately identified that undersized crossings, artificial fill on the floodplain, and increased runoff from impervious surfaces have all played a role in altering the natural conditions of the creek, contributing to channel incision, bank erosion, the exposure of a clay hardpan on the channel bottom, and the loss of wood and flow complexity in the channel. The result is poor habitat for those macroinvertebrate species that serve as the State’s primary indicator of a stream in good health. Due to the absence of such indicator species, the State has listed Long Creek as an urban-impaired stream.

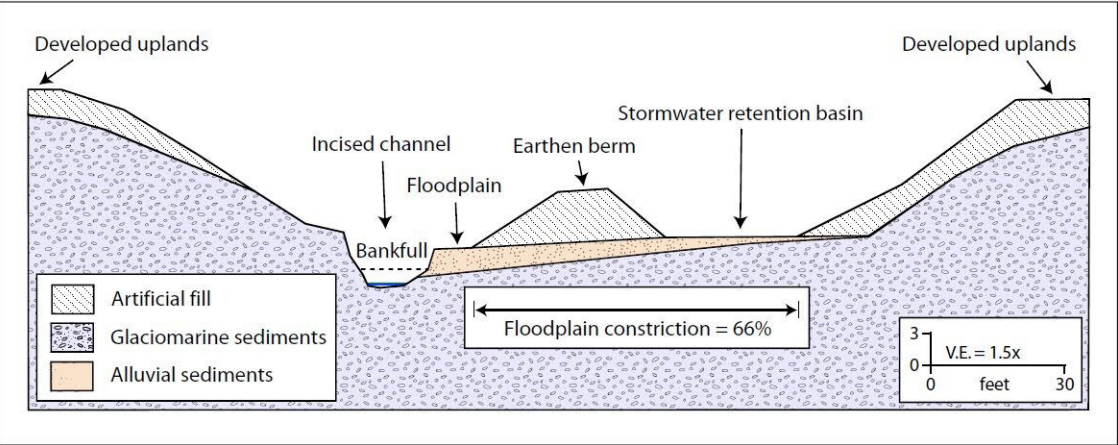


Figure 2. Cross section in the restoration reach showing how artificial fill and an earthen berm severely constrict the natural floodplain.

The 2,000-foot recently restored section of Long Creek that is the focus of this article (Figure 1) exemplified these various human impacts and resulting problems. Artificial fill added to the side slopes between the floodplain and the higher surface on which the commercial developments are found has narrowed the floodplain from an undisturbed width of more than 200 ft in the reference reach to less than 85 ft in large portions of the restoration reach where the channel’s bankfull width is 15 ft. (The reference reach conditions remain relatively natural and forested despite being just upstream of the restoration reach because the area is within the flyway of Portland’s Jetport where development is forbidden.) The floodplain was further constrained to less than 10 ft wide in one section of the restoration reach area where a stormwater retention basin was built on the floodplain with an enclosing berm built near the edge of the channel (Figure 2). The constrained floodplain, along with excess runoff from the impervious surfaces, has increased flow velocities in the channel. This resulted in the simplification of the channel (*i.e.*,

limited wood retention in channel) and the removal of fine organic matter and sand on the channel bottom, exposing the clay hardpan underneath. While hardpan is exposed on only 10 percent of the channel bottom in the reference reach, that value exceeded 35 percent in the restoration reach. The prevalent clay hardpan and the absence of wood in the channel did not provide suitable habitat for macroinvertebrates in the restoration reach. Consequently, restoration was deemed necessary to provide the channel complexity and floodplain access necessary to create and sustain the conditions required for macroinvertebrate colonization.

**Solving the Problems**

*Management perspective*

While CLF’s petition was pending before US EPA, the City of South Portland received a grant under Section 319 of the CWA to study the possibility of implementing a watershed-based restoration plan for the Long Creek Watershed to better understand and identify potential solutions to the problems associated with urban impairments in the Long Creek Watershed. Under the resulting Watershed Management Plan (FBE, 2009), a series of coordinated restoration efforts would be undertaken on behalf of those landowners, towns, and other entities requiring discharge permits and willing to cooperatively implement the plan. These cooperating entities would sign on to a “general permit” that would provide permit coverage for the entire category of similar stormwater discharges in the watershed and obviate the need for individual landowners to obtain an “individual permit”. The general permit would reduce duplicative efforts and ease coordination with regulatory agencies.

In 2009, Maine DEP issued the *General Permit — Post Construction Discharge of Stormwater in the Long Creek Watershed* that incorporated cooperative implementation of the activities identified in the Watershed Management Plan as a permit condition. Those choosing not to engage cooperatively in implementing the Watershed Management Plan were required to obtain an individual permit for their discharge, although 96 percent of the regulated impervious surface area ultimately fell under the general permit and the Watershed Management Plan. The plan is unique in that it offers the key incentive of collectively undertaking projects. Under the plan, large in-stream restoration projects that span multiple properties can be designed and constructed as a single project. Similarly, stormwater treatment projects can be built on out-of-the-way land that serve multiple parcels, rather than having individual property owners constructing multiple individual stormwater retrofits on already developed parcels. Creating the mechanism to implement these collective projects has resulted in a lower cost per acre for treating stormwater impacts.

Funding for projects identified in the Watershed Management Plan is acquired through a

\$3,000 per-acre-of-impervious-surface annual fee levied on each permittee. To manage the funds, technical development, and permitting that must be completed for each project, the four municipal entities within the watershed formed, by way of cooperative agreement, a quasi-municipal special district known as the Long Creek Watershed Management District (LCWMD). All permittees falling under the general permit are required to enter into a “Participating Landowner Agreement” that allows the District to construct projects identified in the Watershed Management Plan on their property and to carry out good housekeeping, pollution prevention, inspection, maintenance, and monitoring activities.

The in-stream restoration project highlighted in this article was identified in the Watershed Management Plan. The completion of the restoration project was the culmination of a series of meetings of an “expert review panel” convened by LCWMD that prioritized the restored reach among other sections of Long Creek and its tributaries that were considered. Permits to construct the project were required from the U.S. Army Corps of Engineers, Maine DEP, and the City of South Portland. In addition, LCWMD had to secure easements from nine landowners to construct the project over 2,000 feet of stream and adjacent floodplain. Clearly, the large restoration project, and associated benefits, would not have been possible without the management framework created to address the urban impairments in the heavily developed watershed.

*Science perspective*

The project design focused on techniques that would restore natural channel processes to Long Creek and enhance habitat for the macroinvertebrate species indicative of a healthy and naturally functioning stream. Construction was completed in Fall 2019. First, log jams were constructed completely across the channel (simulating features in the reference reach) to restore flow complexity and a channel substrate of fine sediment and organic matter (leaves, fine detritus) (Figure 3). In less than five

Figure 3. Constructed full-spanning log jam in restored reach of Long Creek showing flow complexity created as flow passes over and through the structure five months after construction. Two other constructed log jams are visible in background.





months after the completion of construction as leaves, branches, and other materials have accumulated on the upstream face of the log jams, water is cascading through the structures, oxygenating the water, and creating numerous microhabitats in close proximity (*i.e.*, fast and slow currents, deep and shallow water). To reduce flow velocities in the channel and ensure the benefits of the log jams are sustained, a berm constricting the floodplain (Figure 2 and Figure 4a) was removed in order to restore a portion of the floodplain (Figure 4b). Although a more complete restoration of the original floodplain width was not possible due to commercial developments on the artificial fill, high flows less than two months after project completion were



Figure 4. Long Creek restoration included a) removal of a stormwater retention berm to b) reconnect a portion of the floodplain.

reach consensus on mutually acceptable solutions to problems resulting from urbanization of the Long Creek Watershed. With LCWMD established, the participating landowners are now able to undertake larger more impactful projects that would otherwise be impossible to complete individually on their own properties – an arrangement also preferred by the regulatory agencies and more beneficial for the creek itself. By identifying the factors impacting channel form and function in the restoration reach and comparing that with conditions in the less disturbed reference reach a technical scientifically-sound plan was designed and implemented that reduced the impacts

result, often quickly unravel as the streams readjust and respond to the unaddressed human-influenced conditions present in the watershed. While some of the specific restoration techniques used on Long Creek may not be applicable elsewhere (such as channel-spanning log jams on larger streams), the management structure established and more scientifically sound process-based restoration approach used could serve as a national model for implementing more effective and sustainable restoration projects on urban-impaired streams across the country.◆

*Dr. John Field, PG, is President of Field Geology Services. Mr. Peter Carney serves as Executive Director for the Long Creek Watershed Management District.*

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Figure 5. Reconnected floodplain inundated for the first time in more than 40 years following a rainstorm less than two months after project construction.

able to spread out on the floodplain in the restored area for the first time in more than 40 years (Figure 5). Future monitoring will establish whether macroinvertebrate populations are responding to the restoration and if the water quality impairments are being reduced.

Conclusion

The successful restoration of a critical section of Long Creek in South Portland, Maine required the development of a sound management structure in consort with a site-specific restoration plan. The Long Creek Watershed Management District was established to navigate and build the sensitive relationships between multiple landowners, regulators, towns, and other interests in order to

of human development (*e.g.*, removal of floodplain encroachments) and returned natural features to the channel (*e.g.*, log jams) to restore the natural processes necessary for improving and sustaining high-quality macroinvertebrate habitat (*e.g.*, flow complexity, deposition of fine nutrient-rich sediment) and overall stream health.

Stream restoration has become a billion dollar industry in the United States with many failures and limited documented success (Miller and Kochel, 2010; Cockerill and Anderson, 2014). The currently widely used form-based restoration approaches impose idealized natural channel conditions on the landscape that are often not in equilibrium with their urbanized settings and, as a

Generous Attitudes Generate Gratitude



by Gary G. Marsh

At the start of the pandemic, as I was pulling into the entrance of a local store, I recognized a buddy in his pickup truck talking to someone in the parking lot. I stopped and rolled down my window to say hello while maintaining the appropriate ‘social distance.’ The person standing said, “Watch out, Mike has the ‘macaroni’ virus!” alluding to Mike’s recent eating habits and waistline. Thank goodness self-quarantine hasn’t defeated our sense of humor, though it appears may change our world forever.

Although this virus has postponed some, if not most, of our enjoyable activities, events, family outings, and plans, we hope it will end soon. As you may know, the River Management Society (RMS) Training Symposium, Mountain Creeks to Metro Canals, in Richmond, VA, has been rescheduled for May 18-21, 2021. On the upside, this provides planners and organizers an additional year to garner sponsors, speakers, and resources for another exciting networking opportunity. On the flip side, RMS greatly depends on this signature event every two years to help fund talented staff (our Executive Director, Journal Editor, River Training Center Coordinator, Communications Coordinator, GIS and Project Assistant, and interns) as well as critical operating expenses. Since this financial support will be delayed a year in the budget cycle, I am encouraging those members who are able to help sustain the momentum and progress RMS has achieved to date.

With some 400 active members, RMS is an efficient, creative, and fiscally responsible steward of a small annual operating budget. Our members have played a key role in the success of RMS in the past, and I imagine we all would like to see an increase in services and programs built up by our Chapters and the Board’s leadership. The national RMS Board of Directors will be preparing a 2021 calendar year budget in October at its annual meeting. This exercise will no doubt involve hard choices based on this year’s (2020) funding shortfall due to Covid-19 restrictions. Ideally, membership dues and symposium/workshop registration fees will remain the same, and we will be able to maintain our quarterly RMS Journal. The stability of RMS depends on steady momentum from consistent funding, networking, and training. The wealth of RMS emphasizes the richness of its membership. The more we know about RMS (and its members), the more we appreciate what our small nonprofit can do. Giving back is one way to express gratitude for what RMS has done for each of us.

RMS is largely a volunteer organization. We rely on members lending leadership skills as Chapter or National officers and Board members — there are vacancies in the Pacific, Midwest, Southeast and Canadian Chapters. We encourage members to submit nominations for the annual RMS awards, serve on a committee, or enlist new members (by also considering the gift of membership!). We appreciate those who organize and host Chapter river trips and workshops. We often invite members to write Journal articles, and speak on behalf of RMS within your community. We enjoy publishing your book reviews, poems, float or ‘flipping the boat’ stories. Some of you have grant-writing skills that we’d love to tap. Some of you have already started stockpiling articles for our live and/or silent auctions that will take place in Richmond, VA, next year. Everyone has a role to play.

Financial donations are necessary and important to any organization. Giving is a private and confidential matter — freely motivated without coercion, imposition, or gimmick. Those who are not able to give financially should not feel obligated to do so. RMS also relies on those who give their time, energy, passion, and expertise. We should not give to compete — for prestige or recognition — nor desire for anything in return. While it may not be the right time, and you may not have the resources to give, be assured that your generosity of attitude always generates gratitude from RMS. When it rains, it pours, and river momentum increases. Thanks to you all, water still flows downhill, even in a drought.◆

Please review ways to give. As you may know the IRS has delayed filing 2019 taxes until July 15, 2020. For those who can, please consider a donation, in-kind donation, or monthly donor program. In addition, check out the many other tax-deductible options at this link: <https://rms.memberclicks.net/donate>

You may also want to glance at the RMS Strategic Plan (2017-2022) to see where the organization is headed: <https://rms.memberclicks.net/plans-and-policies>

Mentoring is yet another opportunity: <https://rms.memberclicks.net/mentoring>

You may also want to get involved with our River Training Center: <https://rms.memberclicks.net/training>

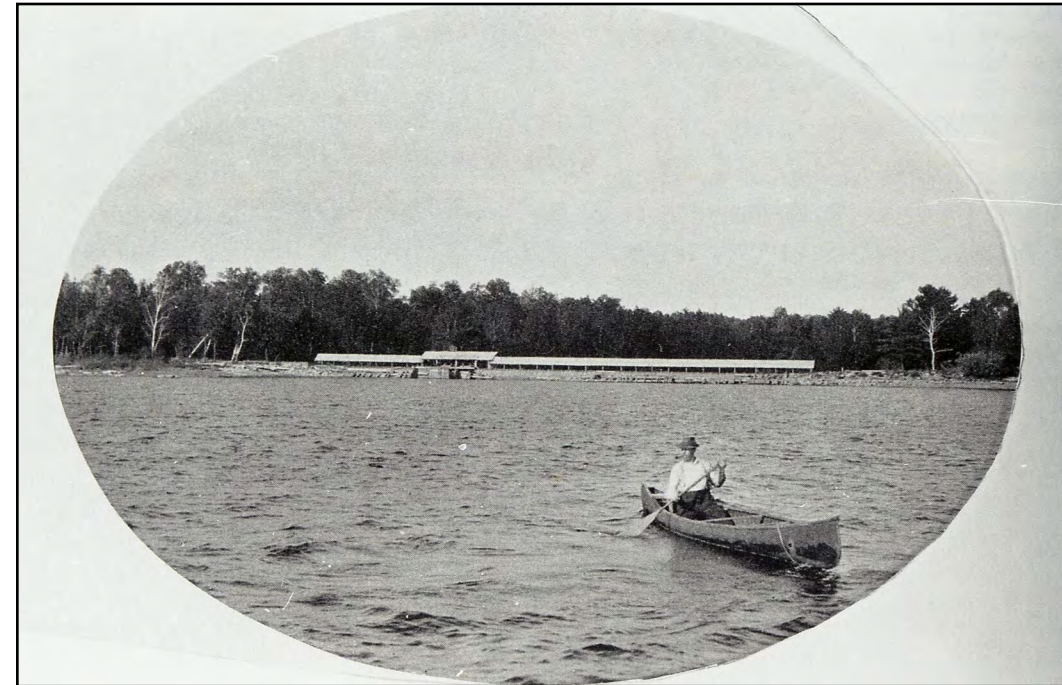


# Lock Dam

by Matthew LaRoche

Rebuilding a dam on a National Wild and Scenic River is no small undertaking — especially when that dam is 60 miles from the nearest town and has no road access. Lock Dam, originally called Chamberlain Lake Dam, is a historic structure nestled on the northeastern shore of Chamberlain Lake. This dam changed the flow of water from flowing north down the Allagash River, to flowing south down the East Branch of the Penobscot River.

The dam was first constructed in 1841 at the natural outlet of Chamberlain Lake. It was the centerpiece of an ingenious scheme to bring Allagash pine logs to Bangor sawmills. A second



Chamberlain Dam, Maine, 1920s.

dam was built at Telos to control the flow of water down Webster Stream. Hence, 270 square miles of drainage was redirected into the East Branch of the Penobscot. Logs cut on the headwaters of the Allagash could then be driven to the lucrative lumber market in Bangor!

Utilizing an old winter road, the wood facing (that protected the dam from ice and wave action) was replaced with rip-rap during the winter of 2008-2009. Then in 2014, a dam inspection revealed significant deterioration of the three-foot metal discharge culvert and gate mechanism. An engineering firm was hired to assess both Telos and Lock Dams. The firm recommended the replacement of the outlet structure at Lock Dam and significant repairs to correct leakage at Telos Dam. Stopgap repairs were made at Telos Dam to buy some time to identify the funds needed for the repairs at Telos. The replacement of the outlet structure at Lock Dam was deemed the more critical repair and was undertaken during the fall of 2018.

The old winter road used to access the dam was upgraded to summer standards to support the construction equipment

necessary for repairing the outlet structure. Pinnacle Hill Engineering was contracted to design a replacement and oversee the construction of the outlet structure. The design team, Maine Department of Inland Fisheries and Wildlife (IFW) biologists, and Bureau of Parks and Lands (BPL) staff met at Lock Dam in early July 2017 to measure water flows, the stream channel, and to discuss options for fisheries enhancement downstream from the dam. As a result of that meeting, a proposed flow regime was agreed upon and a new outlet structure was designed to meet the water flow requirements.

BPL hosted a stakeholder meeting in October 2017.

The meeting included representatives from: Maine IFW, Maine Land Use Planning Commission, Army Corps of Engineers, National Park Service, Contracted Engineers, and BPL. The design was subsequently modified to reduce the visibility of the outlet structure and maintain the criteria that was used to designate the Allagash Wilderness Waterway (AWW) as a “Wild River” under the provisions of the Wild and Scenic Rivers Act.

The existing 3-foot metal corrugated culvert with gate lifting mechanism was replaced with a 4’x 8’ precast concrete culvert downstream from the gates. The section upstream from the gates is a 10’x 6’ box culvert. The larger diameter upstream section incorporated

a bend away from the campsite to reduce the hazard at the inlet of the structure.

The new outlet structure is wood-faced on the upstream side of the dam and the gate lifting mechanism is placed back from the intake to minimize visibility. Discharge from the dam flows over a timber crib sluice that incorporates a three-foot drop as a barrier to non-native fish species, should they become established above Allagash Falls.

The new outlet structure was designed to provide a flow of 300 cfs which simulates a spring flushing flow to clean the stream channel in Martin Stream. The AWW ran a 310 cfs flow for two weeks in late April and early May. This flow did a good job of cleaning the upper section of Martin Stream and enhanced the spawning and rearing habitat for whitefish and brook trout in the stream. Twelve brook trout redds were counted in Martin Stream in early November but no whitefish were observed in the brook on the November field visit. The new outlet will also provide for a higher flow during the winter (20 cfs) when fish eggs are subject to freezing.

The new outlet structure is a win-win for all stakeholders. It maintains water levels in Chamberlain and Telos Lakes, provides recreational flows for canoeists and fishermen, and enhances fish spawning and rearing habitat downstream from the dam. The new outlet structure was constructed with a permit from the Army Corps of Engineers, in full compliance with the Waterway’s National Wild and Scenic River designation.

Lock Dam is one of several culturally important historical sites in the AWW. It is a popular camping location for canoeists paddling this famous stretch. The dam-keeper’s house, where Milford Kidney and his wife, Maine author Dorothy Boone Kidney, lived for 28 summers, is still used by waterway personnel and volunteers for overnight accommodations as needed. The cabin will also be used for a newly initiated Artist in Residence program for the Waterway.

The cost of the outlet replacement structure was slightly over \$800,000. Project funds were allocated from the AWW Capital Account, matched with federal dollars from the Land and Water Conservation Fund. ♦

*For more information, contact: Matt LaRoche, Superintendent, Allagash Wilderness Waterway (matt.laroche@maine.gov)*



Above: Discharge culvert, before rebuild. Below: After rebuild.





# Partnership Wild and Scenic Rivers Meet Again

by Fred Akers

For well over a decade, the Partnership Wild and Scenic Rivers (PWSRs) program rivers have been meeting about every other year, creating a biennial event. The last meeting was on the Westfield River in Massachusetts, in July of 2017, and the most recent three-day meeting occurred on the Great Egg Harbor River in New Jersey, in September of 2019. While there are many goals and values to be gained by taking the time to travel long distances on the East Coast to meet with other Wild and Scenic River professionals, the main purpose of the event is to provide a forum where Wild and Scenic River management dynamics can be shared and celebrated. PWSRs are managed through a unique partnership between National Park Service (NPS) river managers and local non-federal river managers. Given that the PWSRs program is now 28 years old and growing rapidly, this biennial event provides a wonderful opportunity for longtime NPS and local river managers to renew old acquaintances, and for everyone to meet new people and share knowledge and experiences about Wild and Scenic River management. Given the rapid expansion of PWSRs with the addition of three new rivers in 2019 as part of the Dingell Act, the meeting was open to 16 PWSRs from nine states on the East Coast. Forty-one local and NPS river managers from 14 PWSRs and nine states (NJ, DE, PA, FL, MA, NH, CT, RI, VT) attended, including support staff from the NPS Washington Office. Sunday, September 15, was the travel and gathering day. The event was held at the Pier 4 Hotel right on the Great Egg Harbor Bay. Following a meet and greet with buffet, conference attendees walked out to a scenic overlook on the bay to catch the sunset. On Monday, September 16, attendees boarded a tour bus to the main business meeting held at the Atlantic County Park's Warren Fox Nature Center. A special event occurred that day, where Helen Mahan, NPS Rivers, Trails and Conservation Assistance Program Manager, announced that Jamie Fosburgh, longtime NPS PWSRs Program Manager, was officially designated Chief from Acting Chief.



- Agenda items for this part of the event are summarized below:
1. Great Egg Harbor River Administrator Fred Akers - welcome and introductions.
  2. Eric Husta from Atlantic County Parks presented about the County Park System and its support for the Great Egg Harbor National Scenic and Recreational River.
  3. PWSRs Chief Jamie Fosburgh welcomed everyone and provided a program and budget review.
  4. Corita Waters and Rita Hennessy from the Washington Office provided an update on PWSRs strategic support activities from their office.
  5. Shana Stewart Deeds from the Upper Missisquoi and Trout WSRs in Vermont provided an overview of the PWSRs Toolkit, which is housed on the River Management Society website at <https://rms.memberclicks.net/PWSRToolkit>.
  6. The three brand new PWSRs (Wood-Pawcatuck Rivers, RI & CT, Nashua-Squannacook-Nissitissit Rivers, MA & NH, and Lower Farmington River/Salmon Brook, CT) gave introductions.
  7. PWSRs Questions and Answers Forum

After the business meeting concluded, the conference attendees boarded the bus and returned to the Pier 4 Hotel to get ready for a dinner event, held at the Seashore Science Center in Somers Point. Fred Akers provided a slideshow presentation about the host Great Egg Harbor River, and Alison Field-Juma from the Sudbury, Assabet, Concord WSRs in Massachusetts provided a presentation on the First Report Card for the Sudbury, Assabet, Concord Rivers that measured a selected set of river quality metrics (<http://www.oars3rivers.org/our-work/riverreportcard>). After dinner, NPS River Manager Jim MacCartney from New Hampshire led the group in a rousing Wild and Scenic River Trivia contest. On Tuesday, September 17, it was time to take a boat tour of the tidal section of the Great Egg Harbor National Scenic and Recreational River. The 4-hour tour was on a 45-foot pontoon boat named the Duke O' Fluke, available May through October for nature tours, evening charters, and fishing for flounder, bluefish, seabass, and weakfish. The weather cooperated, and everyone had fun on the tour before heading home in the afternoon. We look forward to learning from and sharing with each other in the future. Thank you to all of the participants who made our meeting a success! ♦





# Wild and Scenic River Advocates Join Forces



by Lisa Ronald

This winter, Wild and Scenic River organizations from across the nation came to Washington D.C. to further 11 different river protection campaigns from Oregon to Florida. This alliance — the Wild and Scenic Rivers Coalition — formed during the 50th anniversary of the Wild and Scenic Rivers Act in 1968 as a vehicle for river groups large and small, national and local to collectively advocate for the protection of existing and potential Wild and Scenic Rivers. The Coalition hosted the first Wild and Scenic Rivers Hill Week in early March. Here are some of the outcomes of Hill Week 2020 and goals for the next Hill Week in 2021.

### Support Successful River Protection Campaigns

By elevating a common message of river importance along with that of individual Wild and Scenic River bills to our nation’s legislative leaders, the Coalition is creating a more favorable national climate for and cohesive dialogue around river protection. This means that the localized river protection campaigns and stewardship efforts of Coalition member organizations are more likely to be successful in this or subsequent Congresses. During Hill Week, nearly 40 meetings took place to deliver that common message of river protection importance to Congressional offices, House and Senate Natural Resources Committees, and agency leaderships.

### Nurture and Cultivate Legislative and Stewardship Relationships

The graduation of bills to laws depends greatly on legislative relationships built over many years, sometimes decades. Similarly, relationships with river management agencies—the Bureau of Land Management, Fish and Wildlife Service, Forest Service, and National Park Service—are foundational to successful non-profit/agency partnerships that further common river stewardship goals and tackle difficult problem. While individual river organizations maintain relationships with local offices throughout the year, Hill Week was an opportunity for face-to-face connections with career office staffers and key relationship cultivation through Coalition-organized committee and agency leadership and programmatic staff meetings.



*Jack Henderson with a map displaying the prospective Wild & Scenic Nolichucky River designation.*

### Ensure Adequate Funding for River Stewardship

The work of stewarding existing Wild and Scenic Rivers falls on the ever-fewer shoulders of those working for the river management agencies. Funding cuts, consolidated positions, collateral duties, and numerous vacant or perpetually-acting positions, both in the field and in leadership, make this a critical time to advocate for appropriations. During Hill Week, discussions with agency leaders and D.C. appropriations experts has catalyzed the Coalition to begin developing strategies and relationships that better position it to influence future river-related appropriations.

### Create a Shared Space for Knowledge and Expertise Exchange

The broader knowledge base represented within the Coalition provides opportunities for members to learn, share, and identify synergies, which increases everyone’s ability to problem solve. During the Hill Week kick-off workshop, first-timers joined seasoned lobbyists who provided mentorship and shared proven strategies. Engagement with invited speakers from non-river-focused non-profit organizations provided valuable perspectives from environmental organizations with varied or expansive conservation portfolios as well as expanded interest in the Coalition’s work beyond the river sector.

The Wild and Scenic Rivers Coalition’s goals include building greater river advocacy capacity, protecting designated and potential Wild and Scenic Rivers, supporting river professionals, and improving internal and external river values communication.

To learn more, contact WSR Coalition Coordinator, Lisa Ronald (below) at: [lisa.a.k.ronald@gmail.com](mailto:lisa.a.k.ronald@gmail.com) or (406) 396-3607. ♦



*Members of the WSR Coalition — Alison Field-Juma (left) and Christine Dugan (second from right) from the Sudbury, Assabet & Concord Wild & Scenic River Stewardship Council and Lisa Ronald, Coalition Coordinator (right) — meet with Danielle Fulfs of Rep. Katherine Clark’s staff.*







Pre-COVID Harpham Ramp, Deschutes River, OR.

# River management during the COVID pandemic:

## A survey of river professionals

Dan Shelby, Bo Shelby, and Doug Whittaker  
 Confluence Research and Consulting  
 Contact: shelbydotdan@gmail.com, (541) 231-4442  
 May 2020



### Acknowledgement

We sincerely thank the many river managers and river users nation-wide who completed the survey, often including thoughtful written comments. You are the experts who know these special places, and the time you took in the midst of the COVID crisis reflects your unwavering commitment to caring for our nation's rivers. Confluence donated time and resources to collect, analyze, and report the data, and Risa Shimoda at the River Management Society provided the sampling list and web-based forums for inviting respondents and disseminating results.

### Executive summary / overall conclusions

Confluence researchers developed the following conclusions based on our analysis of survey responses; conversations over the past three months with dozens of people who care about river management; and involvement with COVID-related webinars, operating plans, and other documents sent to us by agency staff, outfitters, and others. **This conceptual summary is provided up front, followed by an introduction, study methods, and reporting of data and comments.**

#### Interest in sharing

A common narrative from the federal government regarding COVID guidance is that state and local jurisdictions should take precedence; a subsequent corollary is that national land managing agencies have not been collecting, disseminating, or assessing such information. Basic CDC guidance addresses interactions in outdoor settings, but specific and consistent protocols for public recreation use are absent. Some states are trying to fill this void, but **most on-the-ground decision-makers are wading through these issues on their own** as they open their rivers and figure out what guidance to provide. **There is a clear imperative to share information** – managers want to know about problems, who is doing what, and solutions that work. This survey can help start that process, but there is a need to follow through. We are unaware of any organized effort beyond the work donated for this study (by Confluence, RMS, and the river managers and users who completed the survey).

#### It's early

Many rivers are opening for the season as summer arrives, so they have not yet seen seasonal use increases. Others are opening as states begin to relax varying forms of COVID stay-home restrictions. While some have begun to develop COVID-related protocols for river use, few have much experience with new situations or how river users will respond to them.

#### Diverse agency responses

The “easy” choices are fully closed or fully open, but most rivers are in the more difficult territory in between, and there is inconsistency among responses. This may reflect state and/or local differences, but there is inconsistency across jurisdictions in the same area or on the same river, and even within agencies. This is confusing for river users, who are already challenged with learning new norms for how to conduct themselves on river trips.

#### Asking for good behavior, rather than enforcing it

For the most part, agencies are depending on social pressure and informal norms rather than enforcement. The focus is on educating river users about reducing densities, keeping distant, and practicing good sanitation. The open question is how well this works over time, as river users see a variety of behaviors and enforce informal social norms differently. In some places one might get sanctions for not wearing a mask, while in other places a mask might bring ridicule. As case rates change and people become comfortable in different settings, it is unclear what norms will be followed, and norms will probably vary by region.

#### Sh\*t still happens

As one comment noted, “As usual, it comes down to poop and

litter.” Restrooms remain a major concern as possible vectors for COVID infections. If closed or un-stocked, visitors may vandalize facilities or create nearby human waste problems. If stocked, toilet paper or hand sanitizer may be stolen due to perceived shortages. Open restrooms may require more frequent cleaning by staff that require PPE or have other duties. A common response is leaving restrooms open, but encouraging visitors to bring their own TP.

#### Crowding occurs at accesses, with fewer problems on the river

Put-ins, take-outs, and associated parking lots are the pinch point. Common remedies are to block off some areas, suggest more organized queuing, and consider scheduling to flatten the peaks. Few have yet implemented the latter more intensive management options.

#### Mixing households is challenging

Commercial trips have avoided mixing households by separating groups into independent boats, or suggesting customers organize their own pods for charter trips. Shuttles are particularly problematic. Sanitizing buses is one issue, but it is hard to keep households distant within vehicles. Some outfitters are contemplating capacities of 15-18 in buses that pre-COVID carried 50. Others are planning to shuttle every household's car – a boon for shuttle drivers if that is an industry. Private trips have similar challenges.

#### Going forward

This survey and report are the start of what should be a larger project. As the summer season progresses and COVID restrictions change, it's important to document the changes in management and see what works and what doesn't. Survey respondents have shown themselves to be a committed panel of river experts, and it would be great to follow up with them to share creative new ideas.

### Introduction

The COVID-19 pandemic has created a unique time in America's history, from national lock-down to subsequent re-emergence. We have fundamentally shifted our behaviors and how we interact, including the ways we conduct recreation on public lands and waters. As of May 2020, the US is moving towards opening states and/or areas within them, but the chances of a normal summer recreation season are slim.

Rivers are managed by many agencies across federal, state, and local jurisdictions, and there are no standards providing specific direction about how to adjust management in these unprecedented times. As one respondent put it, “It's everyone's first pandemic.” Coupled with uncertainty about how COVID will progress in the coming months, it can be hard to see a way forward.

The River Management Society (RMS) sponsored a recent Confluence webinar on this topic; over 100 people signed up, representing federal/state/local agencies and NGOs/outfitters/private boaters from Alaska to Florida. Follow-up mailings, unsolicited operating plans sent by outfitters and managers, and a second RMS webinar with state river managers show continuing



*interest in best practices and good ideas* from across the country. In the absence of national initiatives to assess COVID mitigations and reopening strategies, Confluence and RMS have worked to fill the void by systematically surveying river professionals about these topics.

The goal of the survey is to organize data about river management strategies such as closures, social distancing, and sanitation practices during the pandemic. Because of the rapidly changing environment, it was important to establish baseline information and document ideas before the summer season began, without waiting for funding or other action from agencies challenged by the COVID crisis.

Methods

Questions focused on assessing river use, and documenting management decisions about issues such as parking and access, restrooms, distancing on ramps and on the river, commercial and private use, communication strategies, education/enforcement strategies, and compliance.

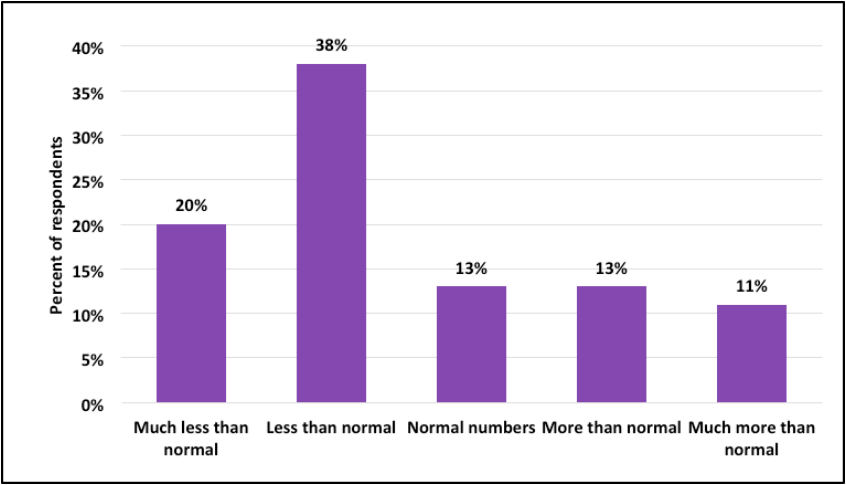
- The survey was initially sent on May 7, 2020, with reminder invitations on May 11, 18, and 20.
- The survey was sent to everyone on the RMS membership list; this includes staff in federal, state, and local agencies, staff at non-governmental (NGO) conservation or recreation advocacy organizations, academics, environmental consultants, and outfitters, private boaters, and anglers. 323 people clicked the link, and 76 of those (25%) completed the survey. Many respondents are in river management positions, although others were invited to report on rivers they knew. Respondents might best be characterized as an expert panel.
- Respondents were from 24 states and all parts of the country.
- Most respondents answered for river segments (68%) or groups of sites on a river (24%), a few for a single site (3%).
- Respondents reported on rivers managed by a variety of agencies, including several with overlapping jurisdictions (so totals below add to greater than 100%). Respondents were not representing official policies, but managing entities included US Forest Service (40%), Bureau of Land Management (36%), National Park Service (18%), counties (16%), cities/ towns (13%), state parks (12%), state resource agencies (10%), non-governmental organizations (10%), US Fish and Wildlife Service (9%), and Bureau of Reclamation (1%).
- In addition to checking fixed-choice responses, many people typed in individual comments. Example comments are given to represent the range for each subject area.

*Question-by-question results are provided below.* For each topic we report simple frequency distributions and example comments from individual respondents. It is important to recognize that *the overall goal is to represent ideas about best practices.* Because the respondents are not a random representation of all rivers or river managers nationwide, *percentages in the different response categories should be viewed as roughly approximate* rather than definitive.

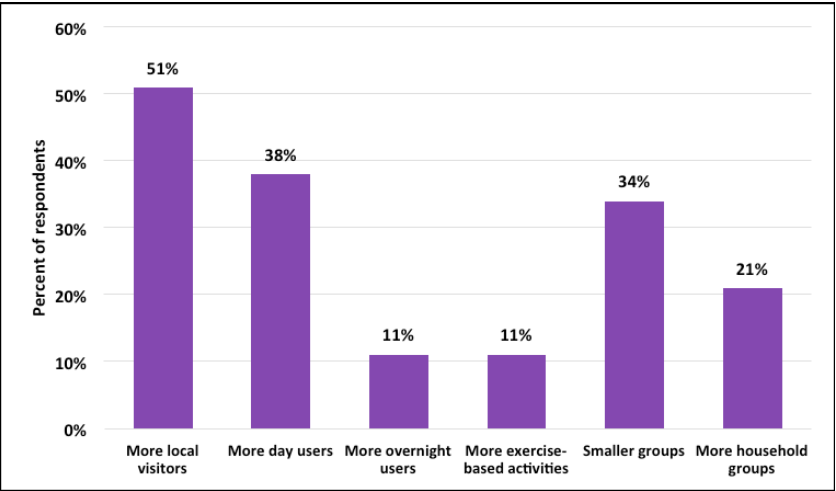
Results

Current use

*How much use has been occurring at your river since the COVID-19 outbreak?*



*Have you noticed changes in activities or user types since the COVID-19 outbreak?*



Example comments from individual respondents about numbers and types of use:

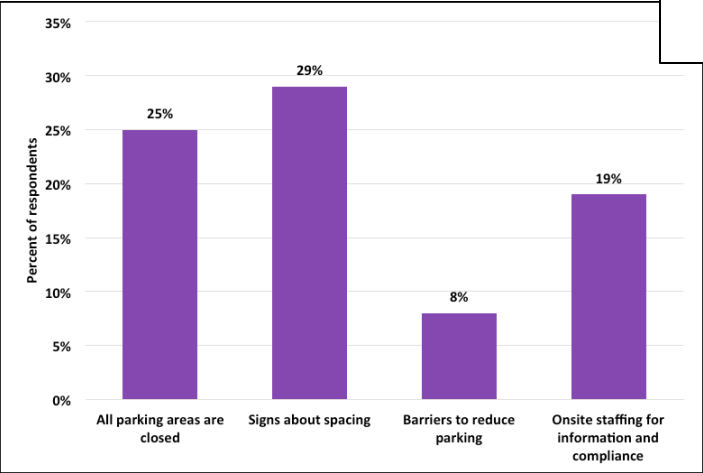
- TONS of recreational boaters from all over the state, but no commercial outfitters (this is typically high season).
- The high increase in use has been by hikers (hiking along the Appalachian Trail), not by boaters, however it has impacted our access areas.
- Much more than normal for hike-in fishing, less than normal for wilderness float trips.
- On-water activity has been typical for this time of year;

much higher numbers of people walking and biking along the river.

- Developed sites are closed so use has been pushed to dispersed forest camping.
- Boaters are going to boat. My general sense is that we’re seeing normal or greater use for spring runs. Locals are doing more local runs on other segments.
- The state closed travel from out of state except for essential services. That leaves in-state only and mostly local users. This will likely change soon.
- We are still in our off-season so there is very little use of any kind.
- No outfitted use currently. Out of state and county not welcomed by locals. Poor behavior by locals on COVID behaviors.
- The rivers are just opening up for the season. We are expecting a small increase in local use and a decline in non-local use.
- Significantly more people running/walking/biking their shuttle.
- No commercial groups, but private boaters have been functioning about the same as a typical year.

Parking at access areas

*What parking actions have you taken at your river? Check all that apply.*



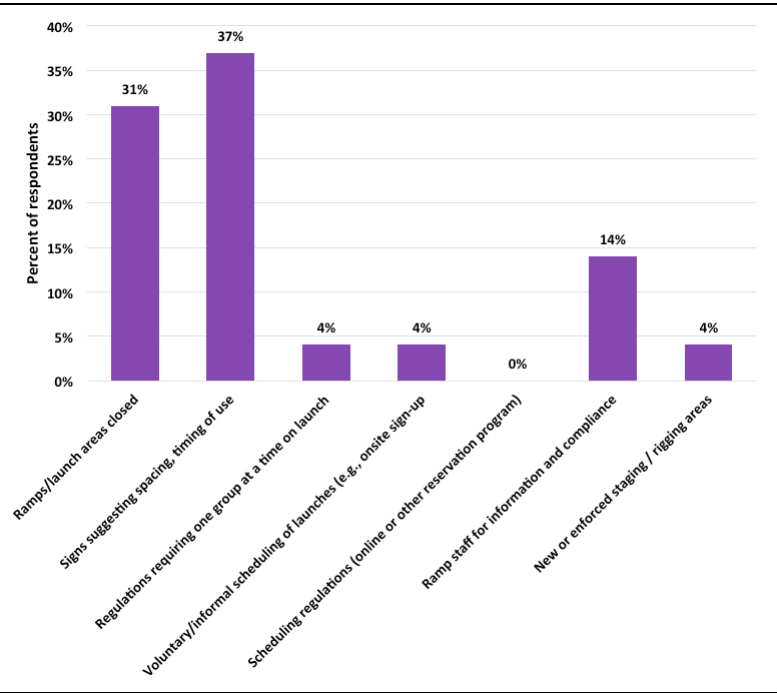
Example comments from individual respondents about parking:

- When on-site, field staff provide public information. Everything is open as usual, and mostly unstaffed as usual.
- Parking space is at premium in most of our developed boating sites. Crowded boat put-ins/take outs will be difficult to police. People will have to be courteous to each other. Unfortunately, I have seen poor behavior already with social distancing.
- Some parking areas closed (e.g. national forest, some state parks), but only those which are over- crowded.
- All parking areas are open and fully packed with overflow roadside parking at levels rivaling 4th of July.
- No major changes, but we do have some onsite staffing at the put-in to help limit the number of individuals at the boat ramp and in the parking areas at one time.
- Entries are dispersed enough that crowding, or even

interactions, would be rare. Climbing area lots are fenced off and signed “closed.”

Boat ramps

*What actions have you taken at your river’s access points? Check all that apply.*



Example comments from individual respondents about boat ramps:

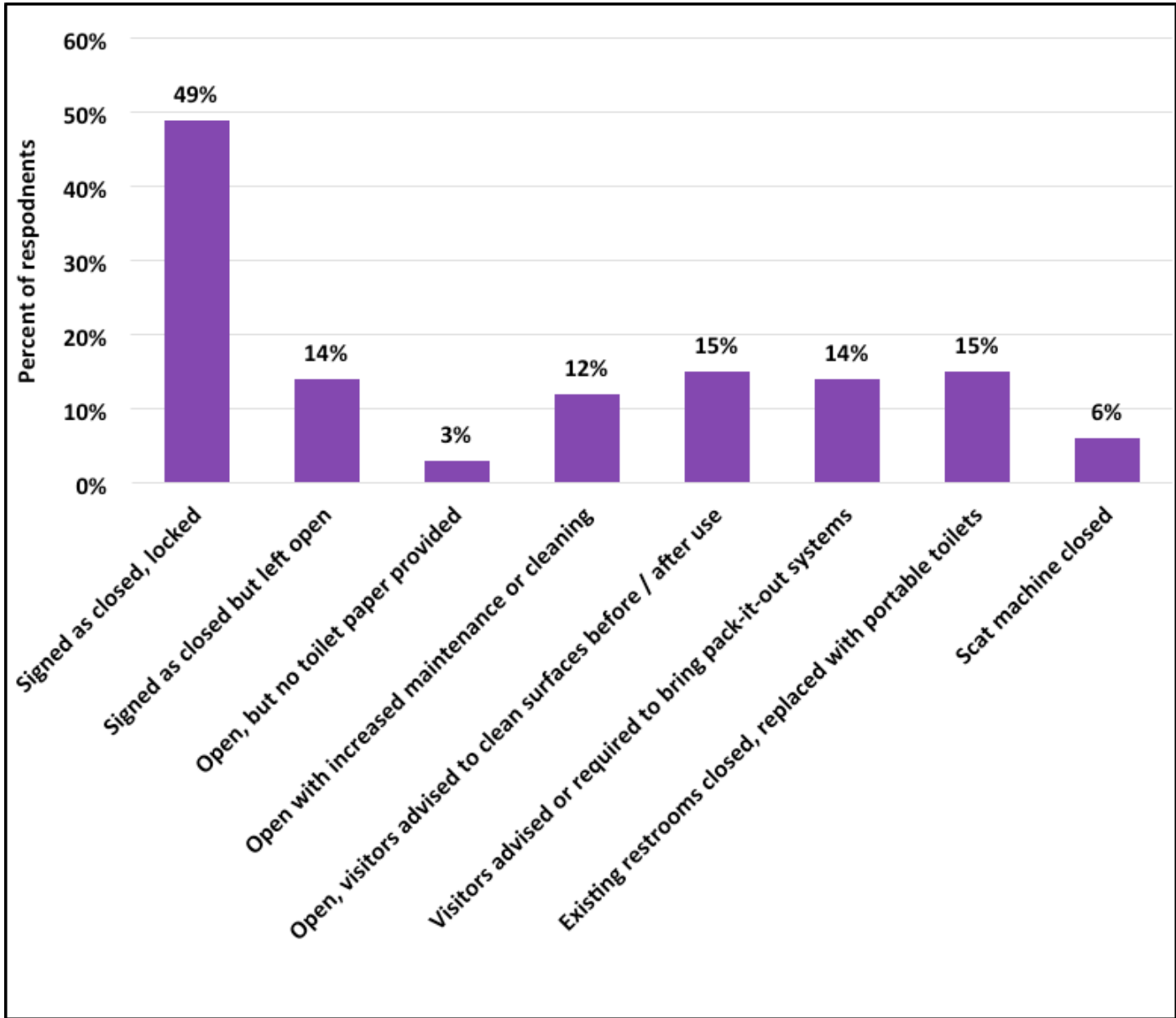
- Managing traffic will be challenging. Signs and advanced direction at check-in would be wise.
- Mostly the same, but if a seasonal dock is usually in place, they have not been put in the water yet. Staff is reduced for maintenance, help, etc.
- Again, very mixed bag across the state. As we enter reopening now, some ramps have modified parking, traffic and launch lanes, setting up rigging areas away from staging areas, etc. New signage noting social distancing is also in place in some areas.
- The take out is not staffed, so people are on their own to follow suggested spacing.
- Variable depending upon jurisdiction. During peak shutdown, certain ramps were over capacity on warm spring days.
- Up to the outfitter/visitor.
- With phased-in reopening, “household” groups can remain together, groups of 10 will be allowed in Phase 1 counties. Social distancing encouraged at beaches and gravel bars, but is not well enforced.
- We don’t have any restrictions on physical distancing. We have posted signs on our kiosks regarding the Governor’s guidance, but it’s well known that folks don’t read the signs we post or listen to the guidance provided by other agencies (they continue to travel out of state to recreate).
- No rafting of boats on waterways. Must remain underway at all time unless exigent circumstances or



- anchored for fishing.
- Use still not causing these kinds of problems, as far as I know.

### Restrooms

What actions have you taken regarding restrooms at your river?  
Check all that apply.

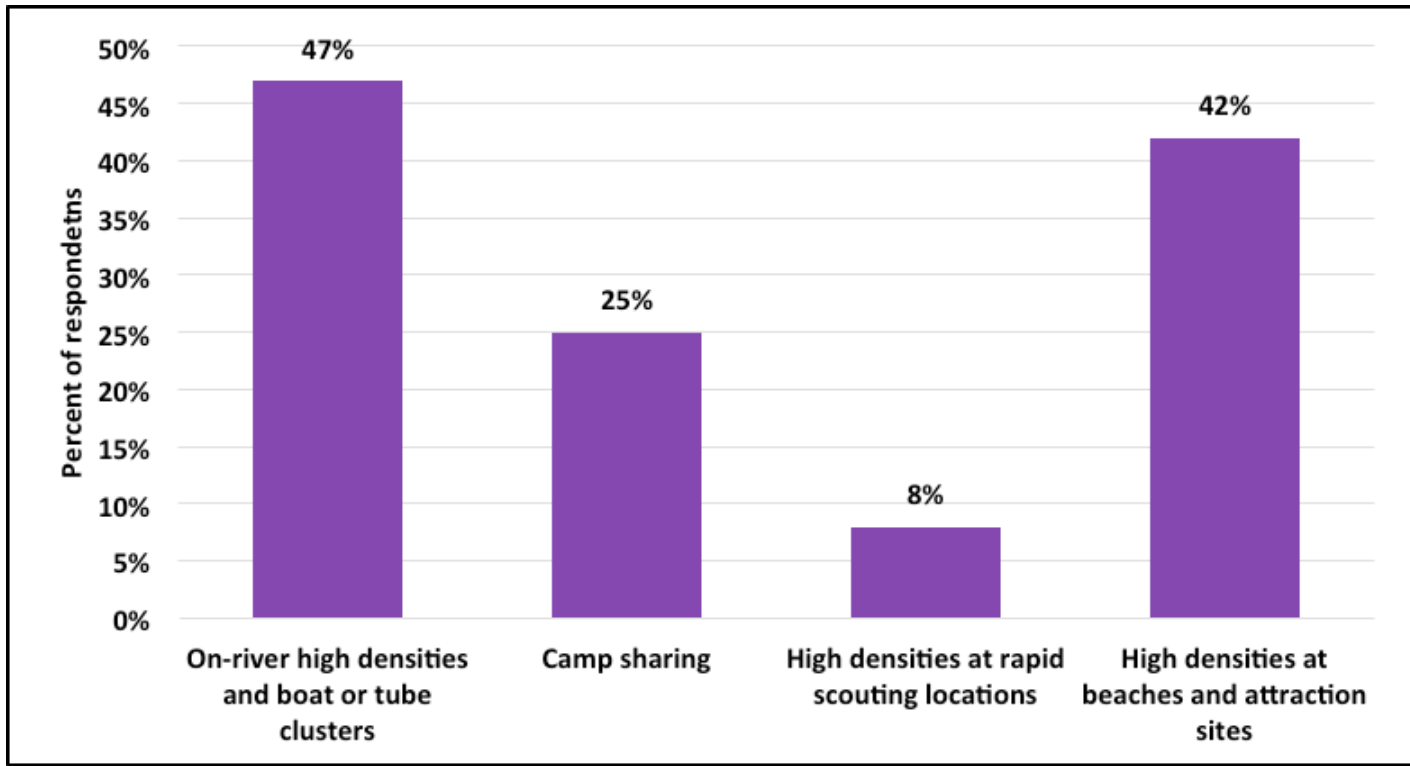


### Example comments from individual respondents about restrooms:

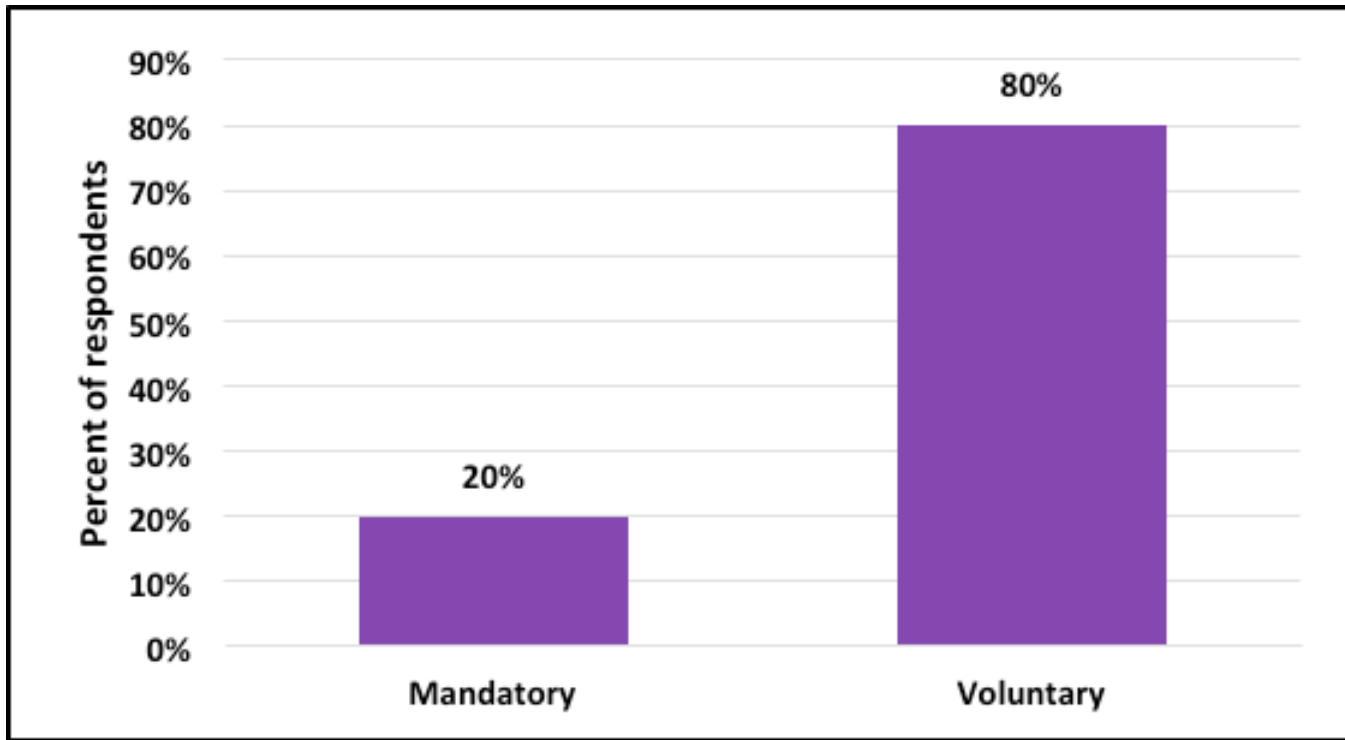
- For double-vaults: one side closed; after 7 days we close the side that was open, clean the side that has been rested for 7 days; repeat every 7 days. For low-use single vaults: leave open until they become unacceptable, then close them for 7 days; after 7 days, clean and re-open.
- Due to additional cleaning requirements with CDC Guidelines, have used contractor to supplement cleaning.
- We've seen multiple approaches across the state, often depending on remoteness of facility. New direction is
- that toilets that will not receive twice-daily cleanings will be signed but remain open. Some counties have locked the restrooms but provided contracted portable toilets.
- Bathrooms by our office open/maintained. All bathrooms in adjacent segment closed/locked, no signage. Desperately need vault toilets to be open. Toilet paper litter around ramp area never seen before.
- There has been a lot of discussion on what to do with the restrooms. State leadership doesn't want to close any bathrooms. However, we are not allowed to clean the restrooms with the lack of PPE. So, we have our bathrooms open without TP--which has caused an increase in vandalism. Some sites have seen less activity since COVID (maybe folks are nervous to use public facilities).
- Toilet open but I'm not allowed to clean & supply TP. Other personnel may be doing this but I'm not in the info loop.
- Has depended on whether the bathrooms are on State, County, or City property.

### Distancing education/regulation

Have you used physical distancing advice or requirements at your river to avoid...



Are the distancing actions you listed above mandatory or voluntary?



### Example comments from individual respondents about distancing:

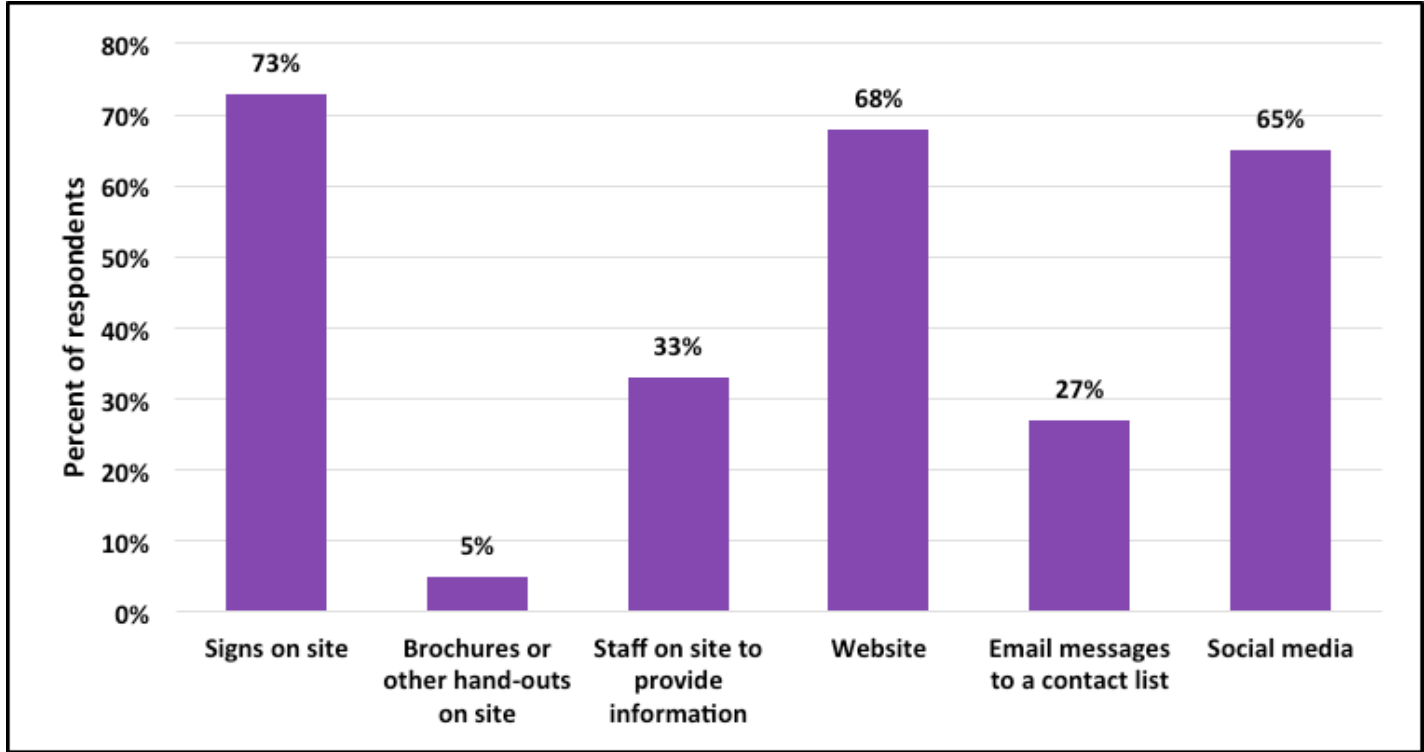
- Advise commercial outfitters that they are expected to follow state guidance.



- All freshwater beaches just now allowed to open; online payment required for those requiring a fee.
- Assigning launch times would help. Pushing down take-out instructions to the trip leader at the put-in will help at take-out.

Communication approaches

What communication approaches are you using? Check all that apply.



Example comments from individual respondents about communication approaches:

- All registrations, including payment, are now being conducted via phone, two days prior to their launch date.
- Flyers and video sent to customers of the outfitters giving the safety precautions.
- Folks have called our contact representative for information on recreation site availability. As previously mentioned, our sites are open to the public, but our contact representative has reiterated the governor’s order on social distancing. Our agency’s social media pages are encouraging recreation... even for out of state travelers.
- Some signing at ramps, but most not up to date regarding COVID. No staff presence.

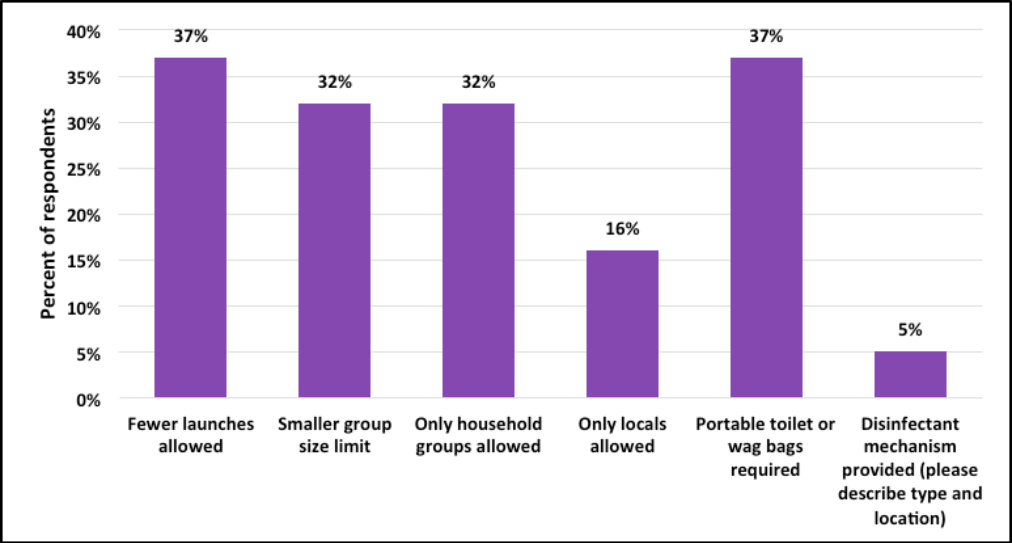
Private boater management

What actions are you taking to manage private boating use? Check all that apply.

Example comments from individual respondents about private boater management:

- All groups are encouraged to bring and use sanitizing products.
- Our river season begins in a couple of weeks. Most [private boaters] use a commercial horse packing service to get gear to the launch site, and the horse packer is not operating yet.
- No changes. Watch out for yourself.
- Family groups only.

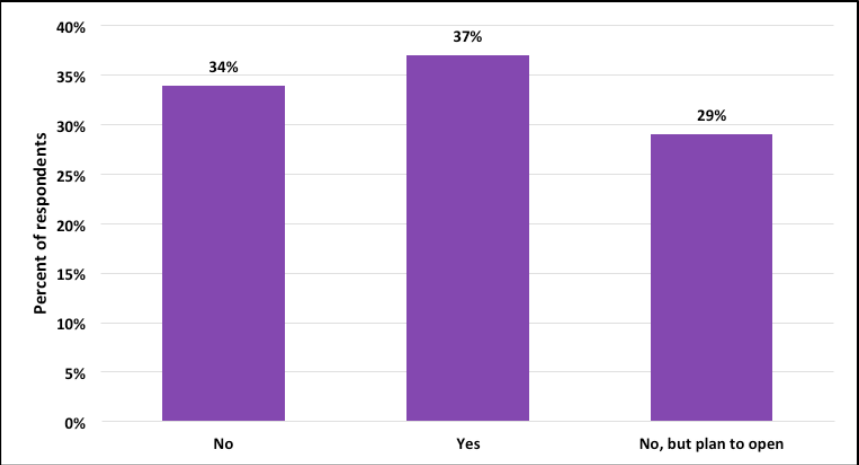
- Only seeing private use, and very little due to mandatory state guidelines to shelter in place.
- Local private boater river use since COVID is extraordinarily high compared to past years. Local county resident boaters appear to be vast majority of users with apparently good compliance by other counties to stay home.
- I think it’s going to be very difficult to enforce private



- use on the rivers. Our law enforcement ranger isn’t allowed/encouraged to approach folks who are not social distancing/following guidance.
- Self-policed, strong social media presence.
- Will also include info with permit.

Commercial use management

Is commercial use allowed?



Example comments from individual respondents about when commercial use may be allowed to start:

- When businesses are allowed to open.
- Will begin on May 9, which will be canoes/kayaks; tubing usually begins after Memorial Day.
- Depends on status of state stay-at-home order and outfitters’ ability to meet state and local guidelines for transportation, food service, social distancing, size of gatherings, and sanitation. Also likely tied to ability to provide restrooms at river access sites and campgrounds.

- When we have direction and after outfitters submit risk management plans.
- Asking outfitters to submit addendum to operating plan stating how they will provide for social distancing and other CDC and state/local requirements.
- No in the National Park, yes on the county-managed reach, and probably soon on the Forest Service managed reach.

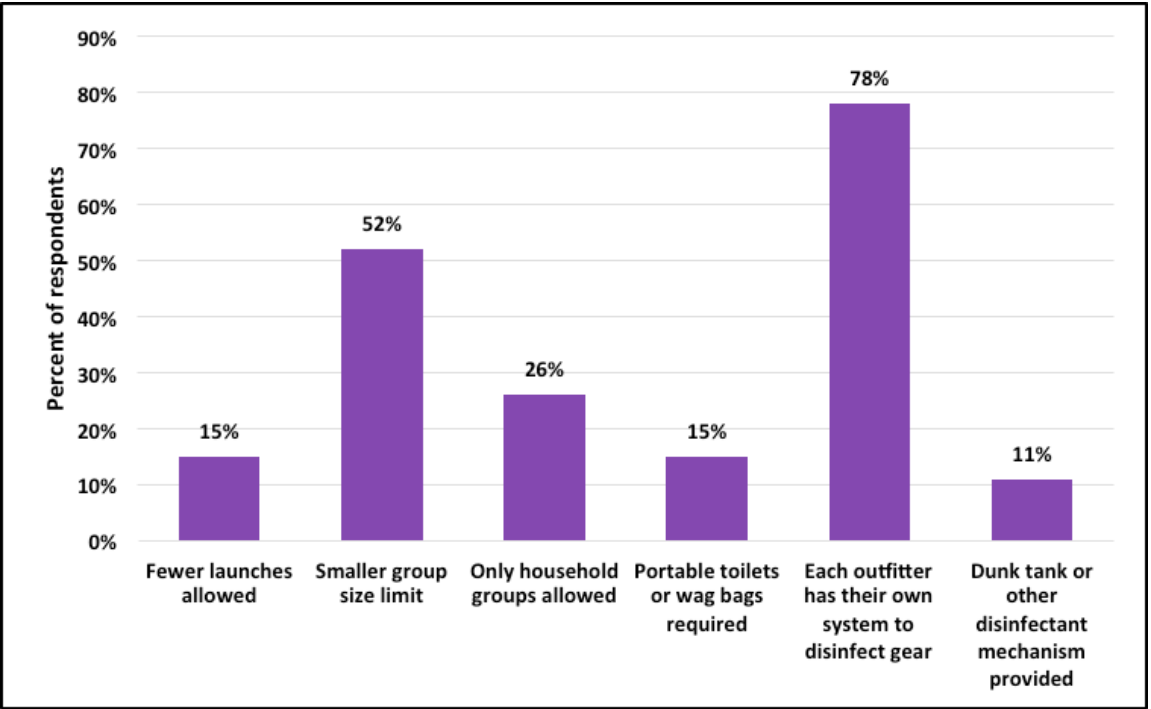
What actions are you taking to manage commercial use (non-shuttle related)?

(See chart at bottom of page.)

Example comments from individual respondents about managing commercial use:

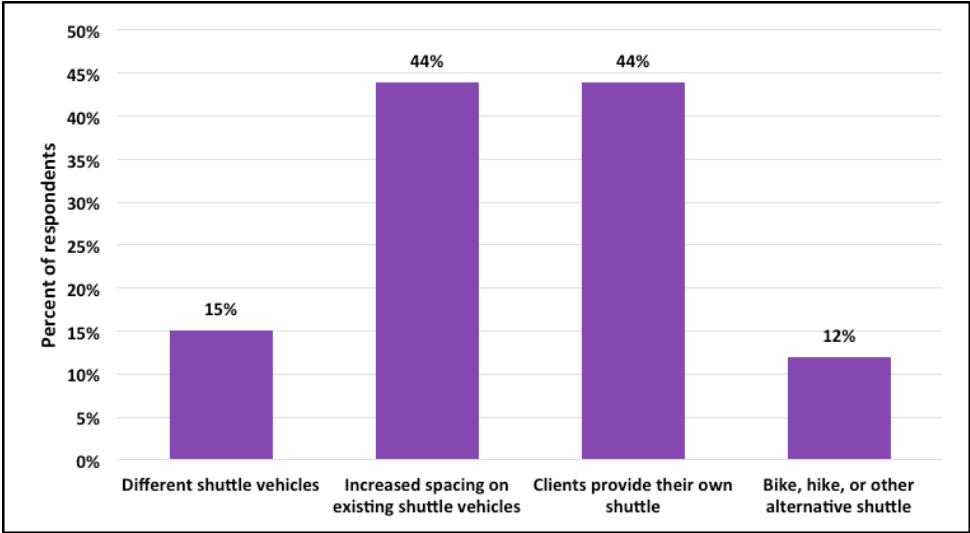
- Most commercial outfitters have been limited to resident clients only, due to a 14-day quarantine for those coming from out-of-state.
- The commercial outfitter decided only self-guided trips at this time.
- Commercial operations are to comply with state mandates - they have discretion in how to meet these mandates whether smaller groups, households only, etc.
- Each one advertises their own methods.
- Follow existing river rules and regulations but trips/frequency/logistics up to outfitter.
- Handwash stations, limited number allowed on ramps at one time, fogger use in common areas.
- The commercial companies are limiting their own launches and group sizes so far, which has been working well without much agency involvement.
- Self-imposed limit to two operators on the ramp at a time. Encourage client provided transportation to ramp.

What actions are you taking to manage commercial use (non-shuttle related)?



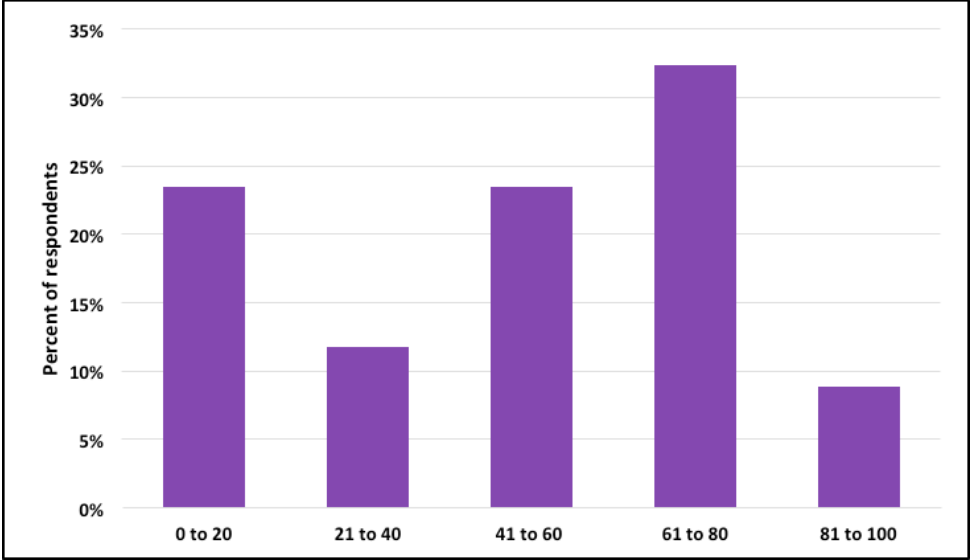


What actions are you taking to manage commercial shuttles?

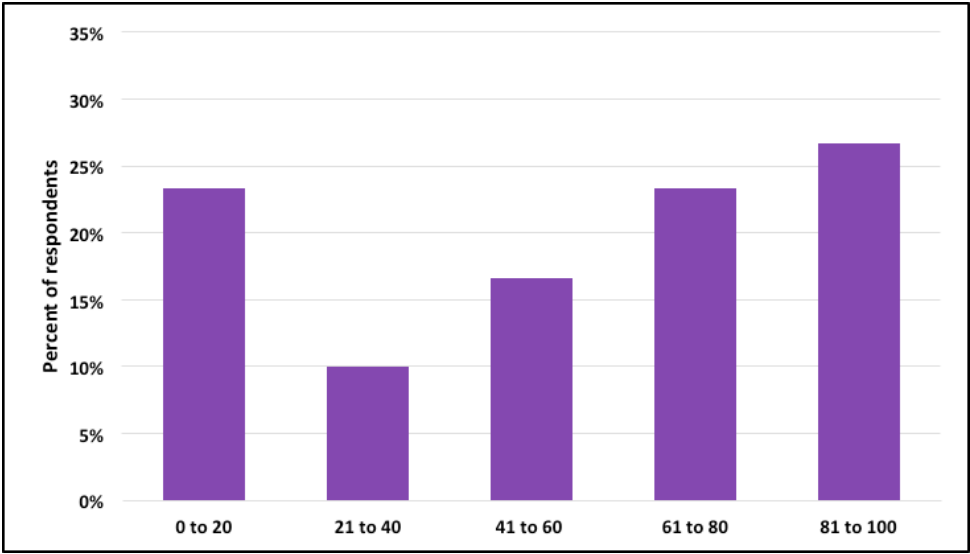


Distancing compliance

About what percent of visitors are observing 6-foot distancing at ramps and parking areas?



About what percent of visitors are observing 6-foot distancing on the river and beaches?



Example comments from individual respondents about managing commercial shuttles:

- Spacing on commercial buses and face coverings should be required.
- Advise commercial services that they are expected to adhere to state guidance. No enforcement.
- Working on PMADS Personal Mask Air Delivery System
- Shuttle driver is only staff allowed on shuttle.
- We are allowed to operate so long as all protocols (including social distancing) are in effect. So the reality is that we are allowed to operate, but it is not possible to do so and still follow the rules.
- Shuttle companies were not operating for a while, so people were setting up their own personal shuttles for a while, but the commercial shuttle companies are starting to operate again.

Example comments from individual respondents about compliance at ramps and parking areas:

- At the sites that are open, people still struggle to maintain social distancing of 6 ft.
- Too early to say. Not enough people out there.
- Within a group, there is very little. Between different groups, there is about 75% compliance.
- I’d say it’s about 80%, seems like people in different groups are doing a really good job but hard to tell within the same group sometimes. Many people have formed their own group of people who they feel comfortable with and no longer follow the 6 ft. rule with those people.

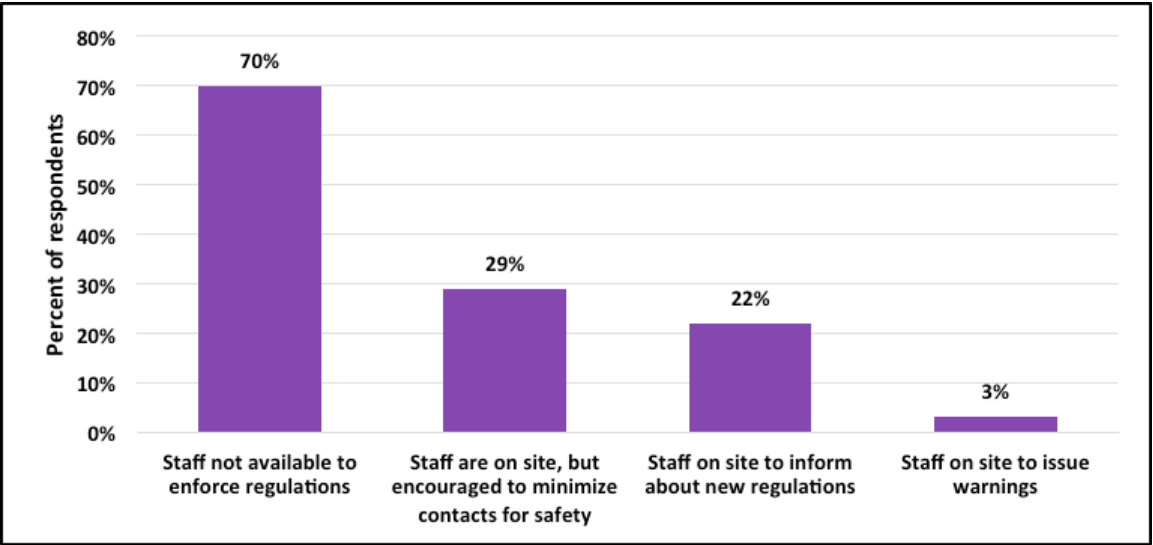
Example comments from individual respondents about compliance on the river and beaches:

- 75% The weather has still been cool and rainy, so actual river activity has not been heavy.
- 80% on the river as people are in individual watercraft for the most part (SUP’s, IK’s). Many

- of the people using “pool toy” type watercraft tend to cling to each other.
- Within a single group very little.
- On river is great! People are doing a good job! Not too many people on beaches...
- We are not allowed to patrol/monitor.

Enforcement

Please describe your current enforcement strategy:



Example comments from individual respondents about enforcement:

- Staff has been encouraged to not be “social distancing police.”
- It would be helpful to have the county sheriff departments help educate/enforce regulations.
- Unsure what staffing is available.
- We’ve been directed to monitor only and not make contact.
- We have limited staff to enforce regulations. Only one law enforcement officer for the district.
- Citations issued when necessary.
- Signage warning that copperheads and water moccasins have been sighted at all take-outs.
- Law enforcement staff were on duty and dispersed and would inform the public and enforce rules as needed.

Comments from individual respondents in response to open-ended prompts

Ideas about guidance for distancing and sanitizing:

- Face masks recommended but not mandatory where social distancing is easy; face masks required for indoor spaces or where social distancing is difficult.
- Considering allowing outfitters to conduct trips on some river segments with groups from one household. Transportation plan would require clients drive to one of the limited number of put-in sites that can accommodate 20-30 vehicles, and take-out sites where groups can disperse while waiting to be picked up. Outfitter would

- shuttle drivers back to put-in in vehicle where social distance can be maintained. Drivers would have to retrieve household members at the take-out.
- Signage with more clear instruction on rules.
- There must be an industry COVID plan agreed to by all outfitters for their behavior at the river sites and on the river. All may have their personal plan to turn into the agency, but if another company is unsafe, it is all for naught. Mine came up with only allowing two companies on the ramps at once. Great idea. Their rule

they agreed to. Beyond that, there must be some type of sting for the greedy guy who tries to push onto the ramp with a third company. If one does it and gets away with it, then they will all do it.

- A lot of great information was provided. Unfortunately, this isn’t a “one size fits all.” Every river and office will have to approach their situation differently. It would be nice to be consistent across the board, but

- that’s not a feasible approach.
- I don’t see how to do it and still follow the protocols.
- Outfitters should be allowed to operate if they followed the phased reopening rules. Outfitters are professionals at risk management and are role models to the general public. Currently during phase 1 the public is allowed on the river and outfitters are not.
- Our County is heavily recreated by out-of-area climbers in the spring. The county and federal and private agencies have shut off parking areas and posted “Go-Home” signs at all entries of high-use rec areas. Highly controversial, which has helped the cause. Flamers on social media have been greatly outnumbered by shamers. Social media has helped keep people at home.
- Accesses are open, people have been encouraged to recreate outdoors, only camping is not open. Use is up.
- We are separating staff into “safe circles.” Inside your safe circle, staff can share a vehicle for shuttles and other work where social distancing, masks, and other precautions can’t be fully implemented. However, contact between “safe circles” still requires social distancing, masks, and other precautions. One of the benefits is that if one “safe circle” is exposed or quarantined, the others can still function. As much as possible, staff will telework - with short visits to the office when needed.

Biggest challenges:

- Getting all parties on same page to move forward with one voice.



- Non-residents asking if/when the 14-day quarantine will be lifted. Non-residents and residents alike asking if we'll honor all COVID-affected permits, not just those permits that were cancelled due to the river closure.
- My river rangers are not able to patrol our rivers, because we have not found a practical way to run shuttles while social distancing. We're allowing only one person per vehicle right now.
- River operations staff shortage. This was caused by on-boarding and shared housing guidance implemented due to COVID.
- Inter-state coordination so that open states are not overrun by residents still unable to recreate in their own states.
- People will not tolerate being locked down at home or locked out of public lands for months on end. Agencies will have to figure out a way to safely manage public use for the foreseeable future.
- Commercial float fishing boats do not allow for 6' spacing so I will likely convert float fishing to bank and wade fishing. River shuttles will put people in vehicles together. Toilets cannot be sterilized after every use.
- The continuous change in direction has been tough — some of the discussions that we have been faced with, include: Do we clean the bathrooms? Do we leave the bathrooms open with no TP/maintenance? Do we lock bathrooms up and provide portable toilets? Do we have enough PPE to clean the bathrooms now? What about enough PPE to get us through the season? Do we enforce restriction on O&G restrictions?...etc.
- For me, the biggest challenge has been trying to figure out what to do with our recreation sites' bathrooms. There has been a lot of going back and forth. We are now at the point where some of our bathrooms have been locked up since they are unusable/dirty. We were asked to leave the bathrooms open without TP/being maintained and were not given the option to lock them up. Leadership hasn't been listening to their field employees—that's the bottom line. Ideas have been brought forward...and nothing has been acted upon. It's been extremely frustrating to not be heard.
- Maintaining spacing, both on rafts and during transit to and from the river. Also, maintaining sanitary conditions on massive amounts of soft surfaces without destroying the gear.
- The reopen-now crowd in the community who are flaunting orders. These folks are seeding rebellion that isn't helpful. We are seeing more out-of-town visitors who are defying orders and potentially bringing with them Covid-19. Our rural hospital cannot cope with an influx of cases. We have few beds and millions of regular visitors. With even a fraction of normal visitation we are in trouble.
- High use urban river and park system, many points of entry, difficult to enforce social distancing on trails around the river and at river access points / beaches.
- Convincing the public/river community during the peak of the outbreak (March/April) that perhaps the best idea was to stay at home.

- Just reminding people to wear masks.
- Restrooms and garbage cans are not available. Human feces and litter are going to be a near future management issue.
- The lack of any consistent guidance. Having to navigate between federal, state, county, forest service, BLM, dept of labor and industries, health department, etc. - all with different rules and regulations.
- We have different agencies managing similar resources with different protocols. The desire is to mirror each other's protocols, but in reality each agency is following their own system.

#### Other comments about sharing information:

- Commercial outfitters are really struggling to figure out if, when, and how they can guide trips. It would be great if their trade groups would work with state regulatory agencies to find solid answers to these questions.
- The idea of "best practices" that all river managers can use is a really good idea.
- During these times when most meetings can only happen online or over the phone, it is challenging to get some people to embrace video conferencing technology. Also, sometimes agencies have technology that is only accessible by in-house staff, making it more difficult for those outside the agency to participate.
- RMS list-serve has been helpful.
- Loaner life jacket stations and the risk of spreading COVID through shared PFD. At this time, we will not be putting loaner life jacket stations out at public accesses because of not being able to properly disinfect the PFD.
- As usual, will the problem will come back to trash and poop?!
- Most important is that the managing agency must be willing to adapt management and facilities to make this whole thing work to keep the river open. If there is no willingness, then it won't work. Adapting equipment, changing the use up a bit, allowing an additional boat or bigger ones to allow more spacing, installing handwash or decontamination stations, putting in markers guides can send party members to break up groups ("stand by the blue post"), etc. are all things that the managing agency must be a willing partner in to make this a safe success.
- Family boating with appropriate social distancing is safe recreation if you can stay near your home to play on local rivers. Once travel restrictions are lifted, and non-local boaters arrive, things will get even crazier busy. Rangers are doing a good job.
- They need to either provide an exception to spacing requirements or find the courage to say we are not allowed to operate.
- Keep the message simple. Use social media directed at your user groups to your advantage.
- Who is going to determine liability? Small towns cannot handle visitors due to the lack of medical support. ♦

## RMS Chapter Insights During COVID

How has river management changed during the Covid-19 pandemic? Are things being done differently in different regions? We asked RMS members to share their experiences with how their rivers and river management have changed during these unprecedented times.

### Northeast Chapter

Working remotely has been the norm for Great Egg Harbor River Management. Our focus on youth engagement is being temporarily replaced by work on conservation and planning. Overuse on some segments of the river has been a growing problem, and those segments may get a rest for a time.  
*Fred Akers, Administrator, Great Egg Harbor River Council*

Nothing too unusual, or outside of anyone else's experience is really impacting our operations — uncertainty about the future, and especially for the Missisquoi River Basin Association and our funding sources. We've been unable to actually interact with our communities as we usually have through educational programs and public events. We are still forging ahead with our missions — working with partners and landowners to improve our waterways, and provide support and connection to our communities. One silver lining: the pandemic is making people focus more locally, so we hope to highlight our incredible local river resources. We appreciate the support we continue to get from partners, funders, members, donors, and are working hard to come out of this stronger than ever.

*John Little, President, Missisquoi River Basin Association*

### Northwest Chapter

My job hasn't changed so much as the climate that I'm trying to do my job within has changed. Resources, such as safety supplies, things needed for river trip logistics, even our river ranger cadre workforce, are all uncertain now, so I'm trying to make plans for administering a river program with few solid things to plan around. We are expecting an upending of normal river use patterns, between unemployment making local people more free to visit the river when they want as well as a reduction in tourism — it's hard to know what to anticipate.

*Colter Pence, WSR Program Manager  
Flathead River, Flathead National Forest*

### Pacific Chapter

Our desert river still flows and carries out her essential and ageless business, immune from all that troubles man at the moment. It's lost to her that lately fewer oars and paddles ripple her surface. Despite water's indifference, we humans, delicate beings, no longer free flowing, long to push off from a bank and float away on her waters to find peace and comfort.

*Larry Freilich, Manager  
Lower Owens River Project*

We are not doing any field management at this time. We are limited to addressing C-19 concerns in support of fire management and law enforcement. Currently I am researching ways to allow for multiple passengers in government vehicles. Making notes to someday update our 32-year old river management plan. Beating the bushes for support of research and rehabilitation of the 2018 storm burst zone on the Tuolumne. In my personal life, I am adding a second exterior automatic fire control system for my residence structures. And, figuring, doodling, wondering how we're gonna get reasonable access at the Main Tuolumne take-out before I die.

*Bob Stanley, Lead River Ranger, Stanislaus National Forest*

The Klamath River is partially open for visitors at this time. River access points remain non-barricaded, but campgrounds are closed and bathrooms are locked. I have noticed a few rafts showing up, seen one jet ski operating, and noticed kayaks coming from the Cal Salmon. A Regional Closure Order is in effect until May 15th. So far no definitive date for reopening/opening campgrounds is set in concrete. I still do field work, the grass doesn't stop growing, trash still appears, and invasive species seem to spread faster than the dreaded virus. Hoping to hire a work partner and figure out how to shuttle with multiple people in same vehicle so we can resume river patrols asap.  
*Dave Payne, River Manager, USFS, Happy Camp, CA*

I'm a private rafter who had a permit on the San Juan for May 14th, but permits were pulled for both private and commercial boaters. Apparently, the Rogue River is open pre-permit season and during the season. Other rivers are not open. Who is making those decisions? Is it local BLM chapters who determine when we can get back on the rivers? Are permit-free rivers open? I just have a lot of questions in regard to the management. ♦  
*Gail Myers, Northern CA*





# Webinar – Rivers in Your State: Open, Closed or In-Between?

Hosted by the RMS State Rivers Program Working Group

This webinar replaced a brown bag lunch planned for the week of the River Management Symposium. We could not gather to literally break bread, but could certainly still get together! Panelists included:

**Rob White**, Park Manager, Arkansas Headwaters Recreation Area, Colorado State Parks. The river flows 152 miles from Leadville to Pueblo, serving 250,000 users per year and another 30-40,000 private boaters each summer.

**John Wenck**, Water Trails Coordinator, Iowa Department of National Resources. 970 miles of designated water trails, with 309 in process of designated. 29 water trails in the program that has been around since 2004.

**David Cernicek**, River Manager, Bridger Teton National Forest, Snake River Headwaters. The Snake River Canyon's eight miles see 90-100,000 whitewater customers, 7,000 fishermen, and 40,000 others who visit in a given day.

**Michele Tremblay**, President of the New Hampshire Rivers Council, Chair of the New Hampshire Rivers Advisory Committee, Chair of the Upper Merrimack River Local Advisory Committee, and President of the Upper Merrimack Watershed Association. River management work in the Northeast and particularly in New England is usually informal, different than on managed systems in other parts of the country. They support river use and work with state authorities to insure public access through the state Public Water Access Advisory Board.

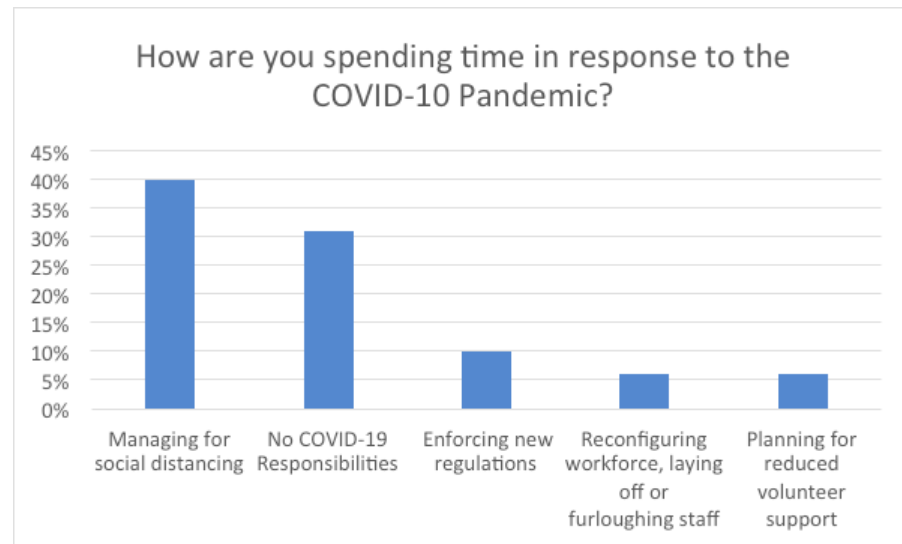
**Lelia Mellen**, National Park Service Rivers, Trails, Conservation Assistance Program, working with a myriad of organizations.

**Risa Shimoda**, RMS Executive Director, Takoma Park, MD.

As this remarkable season unfolds, we will continue to share what we hear and learn. As you gain experience opening your river, please share lessons learned to [rms@river-management.org](mailto:rms@river-management.org), or post to the RMS Facebook page!

States and federal agencies were represented similarly, 21% and 23%, respectively. Non-profits represented 14%, outfitters 10% and the balance (25%) was other businesses, jurisdictions or interested individuals.

We asked how attendees were spending time in response to the COVID-19 pandemic. The response was as follows:



**The following questions were posed to the group, followed by comments and questions from the audience.**

## 1. How are you informing the public about new protocols?

- Arkansas Headwaters: have decided to work closely with county commissioners and their county public health directors. Each county has come up with a plan and outfitters submit their plan of operations. Upon approval, they can operate according to the new protocol. They rely on the outfitters to inform the public they serve of their new guidelines. They are posting new Colorado Parks and Wildlife COVID-19 guidelines at recreation sites, put-ins and take-outs.
- John White and Mary Fleischman offered similar media for the Niobrara and rivers in Oregon: social media, public service announcements, press releases, websites.

## 2. What is your guidance for commercial and private trips?

- New Hampshire (Tracie Sales): outfitting is not an essential business or one of state-regulated businesses.
- Rio Grande, New Mexico: Private boats are limited by governor's order. Outfitters are waiting for phased mitigation.
- New Braunfels, Texas (Amy Niles): The Governor limited outfitters by their shuttle bus capacity. Groups must be no larger than five, and each group must be separated on a bus by six feet.

- Physical boundaries can distance groups from one another effectively, for example, using parked buses on ramps to separate groups.
- Outfitters are asking customers to meet them at the put-in, then shuttling drivers on buses at 20% capacity.
- Other challenges include keeping working partners distanced who normally ride together, besides wearing masks, and keeping surfaces sanitized.
- Events and big group permits may need to be cancelled or modified to keep group sizes at 10 or below.
- Several expressed concern about the 'pack mentality' of tubers.
- Tim Palmer reported that Idaho, Montana and Wyoming were closed to out-of-state, non-essential travel with a two-week sequestration period.
- When asked about the types of masks seen at put-ins, half of the respondents had seen bandanas (55%) and BOOFs (50%), followed by others (41%) including neoprene, surgical, N95s and custom masks.
- Whitewater guides are required to wear masks for safety reasons, yet guides have referred to such a requirement as 'waterboarding,' fearing that a guest would be at risk if they fall into the river wearing a mask. Masks are not required in Texas, Colorado and several other states.

## 3. What is the best strategy you have heard for social distancing?

- Steve Munsell (Prescott College) suggested social distancing on commercial trips must be in place 'when possible.'
- New Hampshire's guidance, per Michele: groups must be no larger than 10; launching must take place one at a time, and camping is not happening.
- New Braunfels (Amy Niles) is limiting park capacity to create an environment where social distancing is possible. The responsibility is on the user, not the city. Groups are still accumulating, so staff is investing time to educate them.
- Social distancing is only required for separate groups; families are okay. Rivers are limiting trips to one family, one boat.
- 18-20 ft. boats that usually carry 16 are limiting groups to 10 people: this size could accommodate two families of 4 that can remain six feet from each other.
- Oklahoma's social distancing is all volunteer.
- Nebraska's position is that rivers will close if social distancing is not taking place.

## 4. How are you managing trash accumulation at closed sites?

This seemed not to be a major problem as sites are *pack out what you pack in* trails or, as is the case on the Rio Grande, New Mexico, contractors are removing trash from dumpsters as usual. Rob White asked for folks to share how they were managing restrooms / toilet facilities.

- His rivers have vault toilets and no running water, so has posted signs advising visitors to bring hand sanitizer. Some sites are bringing in port-a-johns.
- Shower buildings for campers are closed because they cannot clean them frequently enough, nor regulate how many are in there at a time, whereas vault toilets are

single entry.

- Casey Andrews and Dave Cernicek shared that some facilities are closed because there is not sufficient PPE for staff who would need to clean them. Rangers need gloves, grabber sticks to simply pick up a piece of trash, and tools needs to be sanitized.
- In Oklahoma, Ed Fite offered that facilities with pit toilets are cleaned daily.
- Leave No Trace* is working with the USDA Forest Service on new guidance for dealing with human waste.

## Caution to Avoid Overwhelming Rural Healthcare Facilities

How are agencies in different regions coordinating with local emergency services and healthcare? What happens when small rural communities have a spike in cases related to re-opening? Is there increased capacity in small community hospitals for increased COVID cases and trauma cases from river trips?

Rural counties in Colorado have taken a cautious approach and have discouraged people visiting from outside a county. Counties and their public health departments are the agencies' partners. Locals are sensitive to seeing out of state license plates. Signs are posted at pull offs and they are using large lighted Colorado Department of Transportation signs saying the county is closed to tourism.

**Interstate travel / bans:** Michele shared that in New Hampshire, policy is against interstate bans and the governor is seeking support for the promotion of recreating locally. In Canada, however, there are strict inter-provincial travel bans: individuals will be turned away at a border for non-essential travel. There's also been resistance in Rhode Island and southern New England for asking the public not to visit.

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The following resources will remain online as long as they seem relevant, a tough prediction given the quickly-evolving nature of our states' responses to the pandemic!

COVID-19 River Closures

<https://www.river-management.org/2020-covid-19-river-closures>

COVID-19 River Opening Guidance

<https://www.river-management.org/2020-covid-19-river-opening--guidance>

Here is a link: [https://drive.google.com/file/d/1T5ZzGIDzj\\_62OC1HJN9O3ik6s5kvAARO/view](https://drive.google.com/file/d/1T5ZzGIDzj_62OC1HJN9O3ik6s5kvAARO/view) to the webinar recording. Webinar "handouts" (i.e. downloads sharing outfitter guidance and signage) are also available at the COVID-19 Guidance page.

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The State Rivers Program Working Group has been developed to connect State river managers, planners, watershed leads, Partnership Wild and Scenic Rivers, water trails, and outfitters. Others are welcome! Please contact RMS at: [rms@river-management.org](mailto:rms@river-management.org) to find out how you can participate. ♦



# Hydropower Summaries Update and Review

by Risa Shimoda, Harry Williamson, and Colleen McNally-Murphy

RMS, in partnership with the Hydropower Reform Coalition (HRC) and with support from the National Park Service, has updated its library of hydropower license and settlement summaries!

These summaries have been developed to provide convenient references for project stakeholders interested in learning how their rivers are affected by the hydropower operations licensed by the Federal Energy Regulatory Commission (FERC). The hydropower license summaries help distill the multitude of documents that are publicly available through FERC’s somewhat daunting e-library. “Handy Hydro Summaries” are roughly dozen-page summaries of new and renewed licenses and settlements, listing names of the groups involved in the relicensing process, schedules of recreational releases, funds available for access enhancement, and studies or plans required to support the resource or dam infrastructure. These summaries are available on the RMS website (<https://www.river-management.org/hydropower-projects>) and the Hydropower Reform Coalition’s website on the Hydropower Summaries page (<https://hydroreform.org/resource-library/>) and on the individual project’s page (e.g. Gibson Dam, <https://www.hydroreform.org/projects/gibson-p-12478>).

The license summaries were written as ‘Cliff Notes’ versions of the final license documents, which means any updates, results of studies, or management plans that were identified and completed since license issuance weren’t included. Over time the summaries have become more out of date and therefore less useful to those seeking the fundamental aspects of the license. In order to maintain the utility of these hydro summaries as technical resources, we have worked to update the summaries for which more current information is available, as well as provide tips on how to find any new

results that continue to emerge. We are fortunate to have been able to call upon Harry Williamson, career hydropower professional, as a project consultant. Harry spent several months in late 2019/early 2020 updating our stakeholder contact information and communicating with them to locate websites that offer current project plans, schedules, and updates.

## Methodology and Results

In order to find updated information for each project, Harry reached out to all of the people previously identified as stakeholders for the 42 projects with summaries. These project stakeholders provided information on where to find study results and other updated project information, often on utility or NGO websites, as well as other qualitative narrative information. This information was supplemented by Harry’s own internet research, and compiled into short updates for 16 projects. These updates have been added to the summaries as addenda, with the new versions available on the RMS and HRC websites.

To illustrate an example of our project accomplishment, here is the addendum to the Upper American River, CA - Upper American Projects license summary, p. 26:

*The following reference provides the most current (January, 2020) information on ongoing, post-license activities for this project, FERC # P-2101. Detailed information contained in the Final License and subsequent amendment filings may be found in FERC’s eLibrary. (<https://www.ferc.gov/docs-filing/elibrary.asp>)*

*Post-license Activities: SMUD maintains a fairly up-to-date website for the UARP Hydro Project which includes: License Compliance and Implementation Reports, Recreation Management Plans, Annual Monitoring Reports, and a Hydro Relicensing Library. These include*

*Ecological Monitoring Plans, Facilities, and Resource Management Plans. This website is updated annually, with the last edition being 2018. (<https://www.smud.org/en/Corporate/Environmental-Leadership/Power-Sources/Upper-American-River-Project/Hydro-Relicensing-Compliance>)*

Projects for which Harry was not able to locate a helpful website are unchanged. To help those seeking news, updates or the most current state of license implementation for any given project, he has written a general guide (which preceeds the list of summaries) for doing so at the FERC eLibrary:

## Guide for Seeking Additional Hydropower License-Related Information

*If you do not see an update to a listed project or would like to learn more about any hydropower dam regulated by the Federal Energy Regulatory Commission (FERC), you can go directly to the Commission’s online resource. The most current information on ongoing, post-license activities for these projects may be found in FERC’s eLibrary (<https://www.ferc.gov/docs-filing/elibrary.asp>). For a general search, you will be expected to provide: Project – P-\_\_\_\_; Check “Hydropower” box; enter a date range; and “text” (keywords) as applicable. Typically, the most effective searching method is to browse the latest 1st quarter filings with key words: “annual report”, “monitoring”, “status”, etc.*

## Next Steps

Now that the current round of updates has been finished, we are looking to the next phase. We hope to find updated information for the remaining 26 existing summaries, and will be working to create new summaries for additional projects. We are also considering how to leverage these summaries into additional tools and resources that are useful to people working

on other projects, including analysis of common themes, challenges, and solutions and development of best practices to apply to future licenses or settlement negotiations.

## Request for Input

If you have been involved in the relicensing of any of the roughly 1,000 (of the total 2,500) federally regulated hydro power with which our members might be involved, whether or not your project(s) has/have been summarized, we welcome your feedback. Let us know if you have suggestions for hydro projects where a summary would be useful, or other ideas for how we can build on these to support your work. Lastly, if you are interested in getting more involved with this effort, if you are a stakeholder for one of the projects whose summary wasn’t updated, or if you have ideas for funding for future work on the hydro summaries, we’d love to hear from you!◆



Photo, above: Sultan River, Washington, Henry M. Jackson Project  
Credit: Snohomish County Public Utility District

Photo, below: Pend Oreille River, Washington  
Boundary Hydroelectric Project  
Photo: Rich Bowers, HRC





# Paddle on the Anacostia

by Tangy Wiseman

Last year around this time, I was applying for jobs all over the western United States. After a summer working as an ‘L-HIPster’ (Latino Heritage Internship Program intern) for the National Park Service in Denver, I envisioned myself finding a job in the field doing some sort of strenuous work in the backcountry for a research team. However, my curiosity about how public land management agencies operated at the national level led me to apply for a unique position advertised by Hispanic Access Foundation located on the east coast. Fast forward and I’m working as a resource assistant for the Forest Service, Wilderness and Wild and Scenic Rivers, in Washington, D.C.

When I brought my kayak to the city, my friends and family thought I was being a little ridiculous, but if there is a body of water nearby I’ll float it, pristine or not. Truthfully, I felt that my initial vision of outdoor adventures in the backcountry had been put on hold, but I’ve come to appreciate the refuge that urban green spaces provide and changed my definition of what an ‘outdoor adventure’ is.

A few weeks ago, I took my kayak over to the Anacostia river. I floated on its wide, shallow channel

near Bladensburg Waterfront Park, and it was easy to paddle both up and downstream. The turtles are sunbathing, the birds are flocking on the sand bars, and the banks are bursting with greenery right now. It was an encouraging scene considering how much the Anacostia has endured over the years including raw sewage, industrial chemicals, and the ever-present floating trash. I’m glad to know the Anacostia Riverkeepers, the Chesapeake Bay Program and other groups are working to address threats to the river and connect local citizens to its story through boat tours, river clean-ups and more.

Urban green spaces like the Anacostia River shine a spotlight on human impacts like pollution and littering and demonstrate our connection to the local ecosystem. They can shift perspectives of nature being some vague place ‘out there’ and confront us with the challenge of living in harmony with the landscape. The Anacostia is a great example of why an ‘out of sight, out of mind’ attitude is

dangerous. Subsistence fishing occurs in the corridor in spite of threatening and carcinogenic toxins that have been found in

the fish. It’s a real threat to the health of the communities who live near the river. In some cases, raising issues like these is more relatable to people than unfamiliar illustrations of threatened biological processes. The issues on the Anacostia illustrate that there are a variety of ways to highlight the importance of healthy ecosystems to people who have different values and concerns.

Another obvious benefit of the Anacostia is the space it provides for outdoor recreation and relaxation. Paddling is an excellent form of meditation. I don’t know about everyone else, but we are several weeks into this stay-at-home order and we have stillness on tap at my house. Some say we are in the era of “Na...maste at home.” I rely on physical activity to feel truly at ease so I practice ‘active meditation.’ It basically consists of occupying parts of the brain with a repetitive task while being observant and mindful.

As I paddled, I let the breeze tickle my face, the sun warm my head, and the current rock me back and forth as I glided along the shoreline. I enjoyed seeing the nearby trails buzzing with activity, and I wondered how many people were out exploring urban parks for their second time (remember Pokémon GO?). Overall, I was thankful that the Anacostia’s muddy waters somehow managed to provide me with much needed clarity.♦



## RMS Chapters - Upcoming Trips

### Southwest Chapter Dominguez - Escalante NCA

Chapter members and guests are invited on this Class I-II two-day float. Experience 800’ canyon walls, desert wildlife, and petroglyphs! Exact dates TBD (September/October 2020). Minimum of 10 / maximum of 25 people. Depart Morning Day One from Escalante Creek put-in to shuttle vehicles to Whitewater take-out. Float (13-14 miles) on Day One to Big Dominguez Creek area and camp for night. Lunch on river. Float (13-14 miles) on Day Two to Whitewater take-out (harder for rafts, easier for canoes/kayaks). Lunch on river. Cost approximately \$25 (includes dinner before launch day). Bring own drinking water and food. Call Stuart Schneider (970) 642-4964 or Rob White (719) 539-7289 to sign up.



Gunnison River  
Photo: Stuart Schneider

### Northeast Chapter Allagash Wilderness Waterway September 4 - 13, 2020

**Trip Update:** We are closely monitoring the COVID-19 situation and reopening plans for Maine. We will make a decision by the end of July whether to move forward with the planned 2020 trip or postpone until 2021. Stay tuned.



Allagash Falls.  
Photo: John Little

The 92-mile Allagash Wilderness Waterway (AWW) in northern Maine is one of America’s preeminent canoe trips. Established by the State of Maine in 1966 to preserve, protect, and enhance the natural beauty, character, and habitat of a unique area, the AWW was designated as the first state-administered component of the National Wild and Scenic Rivers System in 1970. The AWW is composed of a chain of lakes, ponds, and rivers, including much of the Allagash River, and is managed by the Maine Department of Agriculture, Conservation, and Forestry to preserve wilderness character.

Cost: Approx. \$450 per person (includes camping fees, canoe rental, shuttle fees, and food). Limit: 12 person maximum. First come, first serve. Open to all (RMS members and non-members).

To sign up, or for more information contact:  
Emma Lord: [emma\\_lord@nps.gov](mailto:emma_lord@nps.gov)



### Southeast Chapter

We are tentatively planning to host an RMS Southeast Chapter paddling trip on the Chattooga River, on Friday, August 28, 2020. This will prospectively be in partnership with Sumter National Forest and Wildwater Rafting. Those who are interested may contact Jack Henderson: [jack@river-management.org](mailto:jack@river-management.org).



# Welcome! New Members & Congratulations!

**Professional**  
Jeff Novak, Recreation Program Manager  
Klamath National Forest  
Yreka, CA

Stephen DiCicco, River Ranger  
U.S. Forest Service  
Gold Beach, OR

Angie Fuhrmann, Educator / Raft Guide  
Jacksonville, OR

Ellis Allen, Board Member  
Weeks Bay Foundation  
Foley, AL

Michael Sewright, *retired*  
State of Alaska Department of Law  
Anchorage, AK

Lucia Portman, Program Fellow  
Rivers, Trails, & Conservation Assistance  
National Park Service  
Seattle, WA

**Associate**  
David Wicks, Board Chair  
River City Paddlesports  
Prospect, KY

Katherine Baer  
Director of Science and Policy  
River Network  
Carrboro, NC

George Lindemann  
Paddler / Conservation Enthusiast  
Miami, FL

Gail Myers, Rafting Enthusiast  
Pleasanton, CA

Paul Jr. Lauck, River Guide  
Grand Canyon River Guides Association  
Winslow, AZ

**Student**  
Madeleine Smith  
Northern Arizona University  
Flagstaff, AZ

Lindsay Hansen  
Northern Arizona University  
Flagstaff, AZ

The River Management Society congratulates these River Studies and Leadership Certificate (RSLC) recipients! Listed are certificate awardees for the 2018-2019 and 2019-2020 academic years. Many, many thanks go to the RSLC Advisors for sharing the opportunity to pursue this certificate with their respective student communities; providing input when choosing courses, internships and presentations or RMS Journal submissions and supporting them with fundraising events and trips to symposiums where they have presented their work.

**Northern Arizona University**  
Advisor: Denielle Perry, PhD

**2018 - 2019**  
Kelly Bessem  
Robert George

**2019 - 2020**  
Katie Guetz  
James Major  
Maddie Smith  
Riley Swanson  
Sarah E. Smith

**Prescott College**  
Advisor: Mathieu Brown, MS

**2019 - 2020**  
Nattie Marshall

**Sierra Nevada University**  
Advisors: Andy Rost, PhD and  
Darryl Teittinen, MEd

**2018 - 2019**  
Christian Delli Veneri

**Virginia Commonwealth University**  
Advisor: James Vonesh, PhD

**2018 - 2019**  
Thomas Franco  
Rachel Moffatt  
Taylor Woods

## River Study and Leadership Certificate Graduates

**2019 - 2020**  
Reid Anderson  
Richie Dang  
Jacob Korona  
Katie Schmidt  
Ryland Stunkle  
Tom Tedesco

**Western Washington University**  
Advisors: Tammi Lanninga, PhD and  
John McLaughlin, PhD

**2018 - 2019**  
Andrew Graminski

**2019 - 2020**  
Caelan Johnson  
Colter Lemons  
Celida Moran  
Alexandra Trejo

The River Studies and Leadership Certificate is also offered at the following institutions:

**Colorado Mesa University**  
Stephanie Matlock, MS

**University of Tennessee, Chattanooga**  
Jennifer Boyd, PhD  
Jeff Duncan, PhD

**University of Utah**  
Kelly Bricker, PhD

**Western Carolina University**  
Brian Byrd, PhD

For more information about the RSLC program, visit:  
[www.river-management.org/river-studies-leadership](http://www.river-management.org/river-studies-leadership)

## Chapter Officers

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### SOUTHEAST

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### PACIFIC

(vacant)

### MIDWEST

(vacant)

**Canadian River Management Society (CRMS)**  
Contact: Max Finkelstein  
tel (613) 729-4004 / dowfink@gmail.com

The RMS is fueled by the amazing energy of its members, and we are looking for energy we know is out there among both new and seasoned members. The Pacific, Midwest and Southeast Chapters are looking for members who care about the management of their rivers to lead them forward. Potential leaders are team players who love working with others and believe a regional dialogue among members and a presence among peers in other parts of the country would help chapter members and the organization as a whole!

A membership in RMS makes a great gift for a colleague or friend!



## RMS Membership

Name \_\_\_\_\_

Home Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Home Phone \_\_\_\_\_

Organization \_\_\_\_\_

Office \_\_\_\_\_

Work Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Work Phone \_\_\_\_\_

Email \_\_\_\_\_

Job Title \_\_\_\_\_

Duties/interests \_\_\_\_\_

Rivers you manage \_\_\_\_\_

Membership Category (please check one)

- ☐ Professional \$50/yr (\$200 for 5 years - save \$50!)
- ☐ Associate \$30/yr
- ☐ Student \$25/yr
- ☐ Lifetime \$500 (for individuals only)
- ☐ Governmental / Corporate Organization \$150/yr
- ☐ Governmental / Corporate *Plus* \$200/yr
- ☐ NGO/Non-profit Organization \$75/yr

Membership benefits are described online:  
[www.river-management.org/membership](http://www.river-management.org/membership)

Who referred you to RMS? \_\_\_\_\_

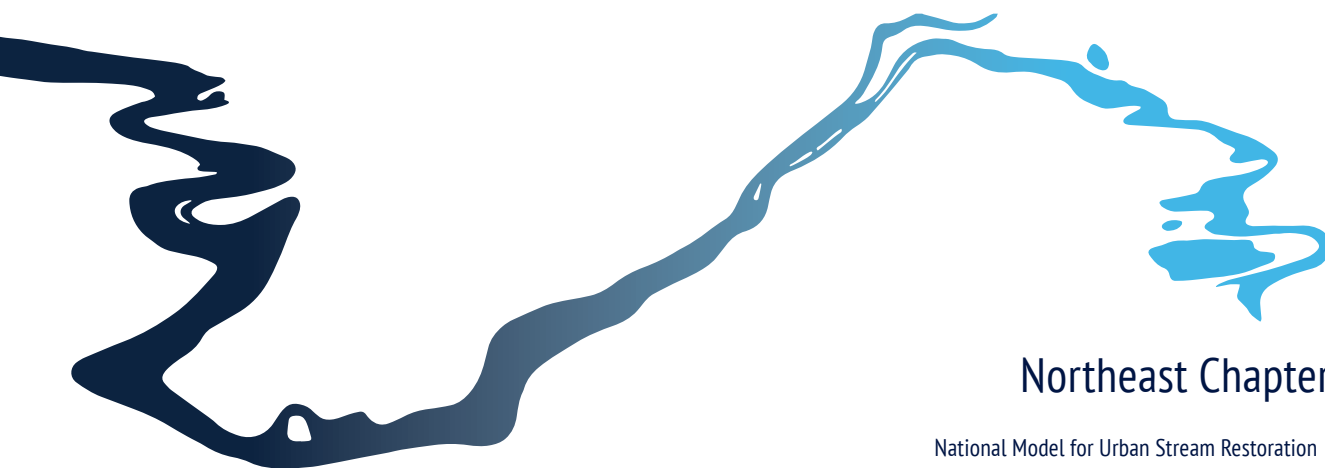
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*RMS, P.O. Box 5750, Takoma Park, MD 20913-5750*  
*(301) 585-4677 • [rms@river-management.org](mailto:rms@river-management.org)*





## RMS Journal Submission deadlines:

Fall 2020	Vol. 33, No. 3	Pacific	Aug 1
Winter 2020	Vol. 33, No. 4	Alaska	Nov 1
Spring 2021	Vol. 34, No. 1	Southeast	Feb 1
Summer 2021	Vol. 34, No. 2	Midwest	May 1
Fall 2021	Vol. 34, No. 3	Southwest	Aug 1
Winter 2021	Vol. 34, No. 4	Northwest	Nov 1
Spring 2022	Vol. 35, No. 1	Northeast	Feb 1
Summer 2022	Vol. 35, No. 2	Pacific	May 1

## Northeast Chapter Focus

National Model for Urban Stream Restoration .....	1
Congratulations! 2020 RMS Awards .....	6
Beavers, Blow-outs, and Bridges .....	10
Generous Attitudes Generate Gratitude .....	17
Lock Dam .....	18
Partnership Wild & Scenic Rivers .....	20
Wild & Scenic Rivers Coalition .....	22
River Management During COVID: A Survey .....	24
RMS Chapter Insights During COVID .....	35
Webinar: Rivers in Your State .....	36
Hydropower Summaries Update .....	38
Paddle on the Anacostia .....	40
RMS Chapter Trips .....	41