



Covid-19: Challenges and Successes on the Tuolumne

Rays of sanity and hope amid savage times

by Bob Stanley

Some history...

The Wild and Scenic Tuolumne River (the “T”), managed by the US Forest Service (USFS), has had a reservation system for private use since 1978. Created as a result of an explosion of whitewater rafting in the late 1960’s, the development of plastic kayaks in the mid 1970’s, and self-bailing rafts in the early 1980’s, the river’s boating use was ever increasing. By the time the reservation system went into effect, the majority of commercial trips were three days, and summer weekends were filled with private boaters licking their chops to challenge themselves on the famously difficult river. The T is often the only river in the Pacific Southwest with remote, multi-day, Class 4-5+ boating available in July, August, September, and within 5 hours

RMS member Bob Stanley (in a self-timed photo) at the Cherry Creek launch (Upper Tuolumne River, CA). Bob received the 2020 River Manager of the Year award from RMS, and is the lead river ranger on the Stanislaus National Forest.

driving distance of 30 million people.

Throughout the 1980’s, advancement in riverboat technology stoked pressure to run the T. Little action, however, was taken to address the difficult and dangerous access — the river was so popular that some felt the access problem was a silver lining to prevent overcrowding. As technology improved, so did skills. As the T became more easily run, many kayakers began to access more difficult runs. In addition, improved technology led to a revolution in other adventure sports — sail boarding, kite surfing, paragliding, advanced climbing, etc., attracted river boaters. Increases in overall use of the T leveled off, while day use increased.

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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

As rivers and restaurants opened with the passing months, RMS has been rolling with the need to re-imagine how best to continue programs, and learning opportunities for you and your colleagues, the institutions you represent, and the community of river professionals and publics we serve.

The summer brought to us three... *three* new staff members who have hit the ground running, and we could not be prouder that they are here to support you. You met Angie Fuhrmann, River Training Center Coordinator, and Bekah Price, Communications Coordinator, in the Spring 2020 issue of the *RMS Journal*. Later in this issue you will meet James Major, National Rivers Project Coordinator, who was not only the most qualified of roughly fifty candidates — he arrived from the ranks of the 2020 River Studies and Leadership Certificate graduates!

As thrilled as we are for the new ideas, expertise and enthusiasm Angie, Bekah, and James bring to RMS, we are sad to lose Jack Henderson from our staff ranks. Having met Jack as an intern at the Congaree Land Trust working with past Southeast Chapter President Mary Crockett, we hope he has become a familiar member of the RMS family — developing the *Public Access Guide for Landowners, Water Trails and River Managers* in 2016 and as the GIS and Program Assistant beginning in 2017.

As our GIS lead who 'never meets a stranger,' Jack has developed the National River Recreation Database (NRRD) with nearly 50 partners across the country and supported our web developer, Scott Collins, as the National Rivers Project (NRP) has grown to include nearly 2,000 rivers and over 14,000 access points. He has handed this central RMS asset to James, and we hope he is as proud of it as we are of him and his work. The fruit of Jack's labor is that people are using the site! 9,400 people visited nationalriversproject.com during a four-week period in July/August, over

three and a half times the 2,600 visitors measured during the same period in 2019.

The NRP will continue to be a work in progress, but we tip our hat and offer a virtual, socially distanced hug to Jack for his technical capability, diligence, and enthusiasm as the program's leader and ambassador. In addition to supporting the NRRD, Jack has helped with a variety of projects, notably a survey and related report reflecting the utility of the *Hydropower License Summaries*; the hosting of our Symposium; and organizing Southeast Chapter river trips on the Chattooga and Nolichucky Rivers. We thank him and encourage you to do the same when you have an opportunity, somewhere downstream.

You will see in this issue how we are growing our offerings for training workshops and 'conversations' about subjects which are not discreet and solvable in one setting, and which invite 'checking in,' offered by the State River Programs Working Group. Look for programs listed on [River Training Center fliers](#) like this one, on the [News](#) tab of the RMS website and on the [River Training Center](#) webpage! ♦

Growing lists of surprise, uncertainty, fear:

How many firm rules have we stowed, just this year?

With norms challenged fully, insulted or tossed:

Our response reflects what has been surfaced, or lost.

Reflection continues as this ain't going away:

We wish you good health as the night becomes day.

Risa Shimoda
Executive Director

RMS President's Corner

A Look Back

My venture into river management followed several years of seasonal work river-guiding and working the ski area scene in the early 1980s. Ready for a change from that pattern, I landed a seasonal firefighter job with the USFS in New Mexico. Before heading out for the job, the ski area clan did one last end-of-season San Juan River trip. Since I needed to be at the work site sooner than later, I paddled out a few days early in order to report to my new job. This involved hitchhiking with a kayak from the take-out back to my van. We arrived in the dark and saw that every vehicle at the put-in had a notice on its windshield that read "Linda Jalbert contact Steve at BLM ASAP regarding River Ranger job." Apparently, Steve called the ski area and his colleagues in Utah to track me down. I was supposed to be in New Mexico in a few days... what to do? I found a pay phone, called Steve and accepted the job, and then made my apologies to the Fire boss. Within a week, I was learning the river ranger trade on the upper sections of the Colorado River.

When the seasonal job ended, I headed to Oregon to volunteer for a few months on the Rogue River. Following this tour, I headed towards Portland to visit with a good friend. The trip had a rough start when my van (with everything I owned in it) broke down and died. My friend came to the rescue and delivered me to her mom's home in Portland where I was adopted. I had a temporary home base with an address, phone number and another mom. Eventually, I found work, bought a used truck (new home base) and filled out a million job applications.

It was late March 1987 and I had recently been offered a job with the Pacific Crest Outward Bound School as an Assistant Instructor. The contract detailed the courses, job responsibilities and the salary for about three months' work. The job involved assisting in courses that included climbing (a skill I was not yet comfortable with but was eager to learn), and whitewater guiding (a skill I

was comfortable with and excited about teaching). A few days before I was due to return the contract I walked into my home base and heard the telephone ring (one of those things with a dial, a curly cord, and no voicemail system). It was midday, and I hadn't been "home" for a few weeks and I rarely received calls.

The call came from Ranger Tom at Grand Canyon National Park to offer me a seasonal ranger position at Lee's Ferry with a primary focus of conducting pre-trip inspections with commercial outfitters and orientations for non-commercial trips. With the other job offer pending, I needed some time to weigh the options as I was equally excited about each opportunity. After a long walk and hours of contemplation, I pulled a quarter out of my pocket and flipped the coin.

I don't remember if it was heads or tails, but the Park Ranger job won the toss. Within a few days I was on the road to Arizona and a few days after my arrival I was participating in the NPS-sponsored training trip on the Colorado River through Grand Canyon with Park Rangers, guides, and scientists. This first season turned into nearly six years of seasonal work in various positions including the Lee's Ferry Ranger, a River Permits assistant, and as a wilderness technician monitoring campsites and trails.

Within the first few years of working at Grand Canyon, a friend introduced me to the American River Management Society (ARMS, now RMS), and I soon became involved in chapter activities and attended the first Symposium in 1992 where I cut my teeth as a presenter and was awed by the legion of professionals for their expertise in river management and passion for the protection and enjoyment of rivers. Once I became part of the RMS community, I never looked back. The involvement with the organization influenced my career path. The connections led to a full-time position with BLM in Idaho where I engaged with a new chapter and worked for and was mentored by LuVerne Grussing, one of the ARMS



founders and long-term leaders. I learned so much from my mentor about the agency, the science of river management, about working to build public trust, and the importance of building community.

Eventually I returned to work at Grand Canyon National Park and became responsible for leading a highly controversial river management planning process. The planning project consumed at least ten years, survived lawsuits, and ultimately improved the park's ability to manage resources while providing greater access for all users. The RMS connections, resources, and support that I came to appreciate in the past had become more important. The issues were not unlike those experienced by other river managers and the ability to confer with RMS colleagues was invaluable because of the rich body of knowledge within the Society. RMS community, I couldn't have done without you.

In a few months, I will be vacating a leadership position with RMS and handing over the baton to a talented team who will lead RMS with enthusiasm, care, and creativity. It's been an honor to serve, and to be part of the RMS community. Thanks for all you do for rivers and for RMS. ♦

See you on the river,

Linda Jalbert
RMS President

(Tuolumne, continued from page 1)

Over time, some rivers were provided with reasonable access at launches and take-outs, while others not (the T was in the latter category). Recent improvements to launch facilities (including Holms Powerhouse on Cherry Creek, and Merals Pool on the Main) has made getting into the crystal waters of the T easier. Still to be addressed is a brutal and dangerous take-out at Wards Ferry.

Access is not only about getting boats to and away from the river. In summer, the river is run on hydro-power releases from reservoirs above. These releases require boaters to be on the water during a short “window” of time (decided on by the utility) in the morning each day power is generated. Between 6:00-7:00 AM would be appropriate timing to pick up a non-reserved permit, but this has never been a possibility (since the reservation system began) due to limited budgets and staffing. In fact, ease of getting a permit incrementally diminished over the years. Meanwhile, river sedimentation patterns gradually (sometimes suddenly) eroded beaches and campsites, making a quota system especially important.

The original (and current) river reservation system is a first-come, first-serve, mail-in procedure with unused launch reservations able to be picked up each day our office is open. Most boaters choose to get permits at the Groveland Ranger Station on launch day, rather than use the clunky mail-in system. Over time, hours of operation for the front desk and the number of days open were reduced — finally to complete closure. This led to boaters being unable to contact the office in time to get on the water even though there was space available in the quota.

Current situation...

With the advent of the novel Covid-19 (C-19) virus, work and leisure behavior patterns almost immediately changed. Most profoundly for the boating public on the T was complete closure of normal access to routine services at the office of the Ranger Station, while seeing an increase in private party use of the river. Though the USFS is now taking voice mails, calling back, and leaving permits outside loose in a mailbox, it is not working well. Getting a permit on the day of launch is near impossible. Other routine public services of the Forest Service were similarly impacted. This led to an opportunity to recreate a river permit program afflicted by decades of entropy.

With C-19 enmeshed in every management decision, many public service managers were looking for ways to minimize close space contact with the public. River management employees on the district were directed to immediately produce a functional internet river permit system based on C-19 protocols. Surprisingly, four months later, our internet river reservation permit project for the T is in the queue at Recreation.Gov, thanks to the swift work of Sheri Hughes and Susan Valenti. When it’s in place, boaters will be able to make a reservation and create

a permit (either electronic or paper) as late as midnight the day before their launch. In addition, all primary visitor use reporting will be generated by the new system. We hope to have it in operation on January 1, 2021 — almost a cakewalk after decades of frustration.

C-19 also delivered us a ray of hope for hiring qualified boat operators. For a decade, river managers were trying to establish an intermittent whitewater boat operator position in the river patrol program. The Tuolumne is not suitable for training apprentice whitewater operators as it has a lot of class 4 to 5+ whitewater. The hope is to establish intermittent positions for off duty commercial Tuolumne river guides to operate boats for the USFS.

Hiring intermittent boat operators in the federal wage grade (WG) series is an ideal way to support river programs. WG employees do not have law enforcement duties. River rangers (general service, GS series) are responsible for enforcing regulations on the river. Hiring river guides to work intermittently without law enforcement duties allows guides to continue working with outfitters while gaining experience in the way government works. Government gets additional skilled boat operators only when needed and has a pool of boat operators from which to hire full-time rangers.

While not yet able to hire WG operators, a result of employment conditions created by C-19, we can now hire intermittent river rangers. It’s a first step for a rational intake program to procure skilled boat operators for the Tuolumne and other rivers requiring demanding navigation skills.

Covid-19 virus has brought hardships and challenges to our lives, ways of thinking, and operational strategies. But the pandemic has also allowed rays of sanity and hope to penetrate through organizational “aerosols” inhibiting clarity of purpose. We strive to determine best practices, yet often only crises open doors for effective action towards our goals. Many small strokes on the river can cascade us into a better future!◆

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Larry F. with students on LA River.

Resilience and tenacity flourish in LA’s urban waterway

by Michael Atkins

In the hustle and bustle of busy city life, one can forgive the average Angeleno for overlooking the life-giving force coursing through the heart of Los Angeles. In a place where attentions turn eastward to mountains majesty or westward to the Pacific horizon with freeways criss-crossing everything in between, the LA River has long been overlooked; and yet, the resiliency of this ecosystem, and its wildlife, is an inspirational tale to never give up, and a promise that the future can be and will be vibrant and inclusive.

Everyone has been challenged by the uncertainty due to COVID-19 and inspired by the active civil rights demonstrations across our country. But as one scrappy river nonprofit, Friends of the LA River (FoLAR) has seized the opportunity to provide digital engagement and self-guided volunteer opportunities for our supporters to keep current with the LA River. In fact, our new efforts have allowed followers from outside of the LA River’s watershed to plug into our work rewilding an urban river and empowering individuals to foster their own meaningful connections to our ecosystem.

FoLAR has tirelessly endeavored since 1986 to turn the attention of our city towards the LA River and elevate the River in the minds of Angelenos. And it’s been working. Over three decades into our journey, perceptions of the LA River have transformed from a forgotten 51-mile storm drain to see this waterway as a prime opportunity to increase park access equitably, and meaningfully restore a fragile and compromised ecosystem to support native plants and wildlife.

In the early years, it took sheer audacity and stubborn dedication from our founder Lewis MacAdams, who deployed all manner of poetry and protest to turn the River from a punchline into a promising public space. While others of his generation saw fantasy in pristine untouched landscapes, Lewis saw the value in uplifting the most compromised river in perhaps the world. As MacAdams often said, “If it’s not impossible, I’m not interested.” His dedication and founding of FoLAR has welcomed 75,000 volunteers over 30 years conducting our annual River CleanUps, recruited an army of advocates, and raised the next generation

(next page)

(*LA River*, continued from page 5)

of River Stewards with our STEM educational programs and curriculum.

This year, while the entire world grappled with the new normal of uncertainty and public health challenges, we somberly said farewell to Lewis MacAdams, who passed on the eve of Earth Day 2020. This spring FoLAR also moved to postpone our April cleanups in order to stymie the spread of COVID-19 and adhere to social distancing measures. With businesses and parks closed, one thing became abundantly clear - “green is good” and equitable access to open space and natural habitats is vital to our collective mental health.

On Earth Day, FoLAR launched its RiverSTREAM programming - live video content to keep our supporters (and anyone interested!) connected to the LA River. Every staff member of FoLAR has stepped up and developed their own programs to showcase their interests. Our on-staff California trained naturalist takes viewers on a regular bird walk in “Finding Feathered Friends”, while our resident puzzlemaster challenges viewers with our own rendition of “River Trivia”. Our education team has recorded lessons previously conducted with students on our field trips, to make them available on demand for online learning.

This month FoLAR has launched its first ever [Self-Guided Watershed CleanUp](#). Throughout September volunteers and sponsors will do their part by picking up trash in their communities, local parks, and along the river to rise to our city-wide challenge to prevent waste from reaching the river on its way to the ocean. Participants will log their efforts on Litterati, a phone app that encourages users to photograph their items of trash, and tag said trash with vital details such as material and brand, as we tally and total the haul to measure our impact. Interested parties can join FoLAR’s challenge by downloading Litterati and entering our code FOLAR2020.

This October FoLAR will present “Return to the River”, a month-long digital engagement program aimed at further advancing our work on the LA River and deepening the connection of our members and supporters to the LA River. We’ve enrolled a cast of characters from our staff and local partners to explore what precisely makes for a healthy ecosystem, as we chronicle birdlife in and around an active habitat restoration effort in the Sepulveda Basin Wildlife Refuge, near the headwaters of the river. We’re continuing our work of advocating for a 100-acre park in the verdant Glendale Narrows section of the LA River by elevating our collective understanding of what added funding from state and federal governments can bring to local restoration and park development efforts. Finally, in our closing weekend, FoLAR will highlight the connection between the river and the ocean as we explore the Aquarium of the Pacific and meet their on-site show birds. Throughout each weekend of digital events, we’ll also showcase Indigenous voices from the Fernandeño Tataviam, Tongva, and Chumash tribes who long ago recognized the power and vitality of our river as a life-giving force.

For more information and to join our self-guided cleanup or tune into our Return to the River, visit [FoLAR.org](#) and follow Friends of the LA River on all social media platforms. ♦



Allie Anderson, RMS Intern

RMS Interns... a Win-Win!

Hello all! My name is Allie Anderson and I am a rising sophomore at the College of Wooster. I am leaning towards a major in communications with a possible minor in studio art. I have always had an interest in the outdoors, and especially areas that have bodies of water. I very much enjoy activities like kayaking, canoeing, and fishing and, therefore, have a strong urge to assist in protecting these waters from pollution and destruction. For the last few months (starting during the winter holidays with a small break until March) I have been interning for the RMS organization. I have been assisting Risa Shimoda with organizing the emails and RMS Journals into the different archives inside the website so as to make them more easily accessible. This has definitely improved my knowledge of how an organization’s website functions from behind the scenes as before I had little understanding of how a non-profit is run online.

Another activity which I enjoyed taking part in was helping to provide new ideas on how to enhance and liven up the cover page of the RMS website. Helping provide insights on ways to cut down on some of the many words and include more outdoor images was a highly enjoyable experience. It allowed me the opportunity to take a closer look at how other nonprofit organizations display their mission stations on their websites and gain many new ideas. All in all, working with Risa was a wonderful and rewarding experience as she gave me an excellent insight on how the RMS organization is run and how to effectively run a nonprofit organization. ♦



A bit about the Pandemic:

Like what’s taking place across the country, California has experienced a dramatic increase in the public’s use of parks, trails, river access, and beaches as a result of the COVID-19 Pandemic. Early in the shutdown, these open spaces were shuttered; and, as they gradually reopened, park managers have implemented social distancing guidelines and do not allow group activities. In general, we’re seeing that popular river access locations have become crowded beyond measure on the weekends. Our reliance on the great outdoors has become an important way for people of all ages and abilities to maintain their physical and mental health during the Pandemic.

A tragic river access event related to the Pandemic is that of a COVID-19 hotspot that developed in late July at Skaggs Bridge Park on the San Joaquin River in Fresno County. For decades, Skaggs Bridge Park, which is on a rural highway between the towns of Kerman and Madera, has provided a vital river respite for Valley farm-worker families needing to escape triple digit temperatures. With more than 1,000 people visiting the 17-acre park on summer weekends, conditions were ripe for a COVID-19 outbreak. State Assembly Member Joaquin Arambula brought attention to the problem and with funding and staffing from Fresno County, a much-needed education and outreach program is underway. This river access situation adds to the many examples of how the Latino community is disproportionately impacted by the Pandemic.

Further upstream on the San Joaquin River, there’s some good news to report. The San Joaquin River Parkway and Conservation Trust retooled their River Camp program for the Valley’s youth and guided canoe trips to comply with COVID-19 health guidelines. Though program capacity needed to be reduced, the Parkway Trust got creative to provide an appropriate level of services.

To keep everyone safe, many organizations have had to cancel outdoor programs where it’s just not possible to adapt them to COVID-9 guidelines. I’ve been impressed with how creative people have been to provide online nature adventures. One example of this is Sonoma Land Trust’s nature-at-home web page.



Dave Koehler, Curator and Host

A bit about me:

Following a 30-year career in land and river conservation — 25 years (1990-2015) as executive director at the San Joaquin River Parkway and Conservation Trust and 5 years (2015-2019) as executive director of the Sonoma Land Trust — I retired last fall. I’m proud to report that both of my former organizations continue good trajectories with strong leadership and a dedicated team of passionate staff. I sit on the board of directors for River Partners, a terrific organization skilled in large-scale river restoration projects bringing life back to our rivers.

Aside from the challenges presented by the Pandemic, I’ve been exploring some side roads I have wanted to go down — I recently did some research and put down a written record of my family’s immigration story for our two sons. During that project, I discovered the Medveditsa River which ran through the German colony where my maternal grandmother grew up on the Volga Steppes of Russia. Long story short, my discovery of the Medveditsa, and learning about the roots I have in other rivers of my ancestors, sparked the idea to launch RiverSpeak Podcast...

A bit about RiverSpeak Podcast:

RiverSpeak Podcast is devoted to inspire and inform river conservation. We explore rivers by telling the stories of people that would save them. I plan to launch RiverSpeak on September 27, World Rivers Day 2020, with five initial episodes. Each following month, I’ll add to it. To learn more, you’re invited to listen to the welcome trailer available on [RiverSpeak.org](#). You can also subscribe at Apple Podcasts, Spotify, or Google Podcasts directories. ♦

National Rivers Project – A Fulfilling and Inspiring Year

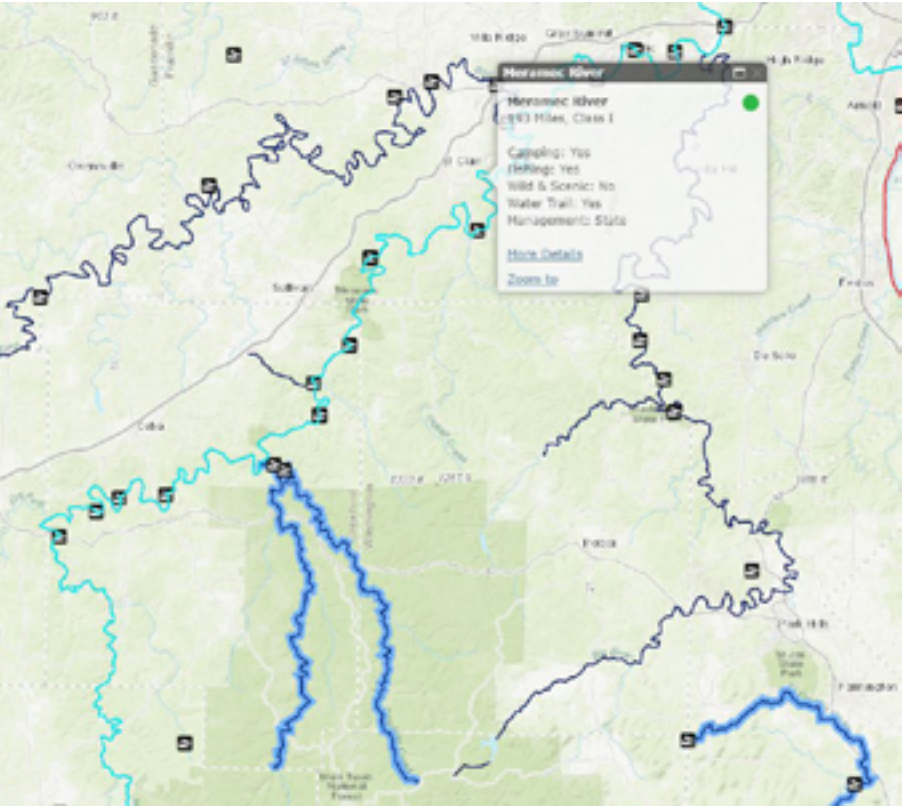
by Jack Henderson

The National River Recreation Database is a geospatial portfolio of information on Wild & Scenic Rivers, water trails, whitewater rivers, access points and campgrounds within the United States. The National Rivers Project is the website serving to help identify, explore and plan trips on rivers within the database. Together, comprehensive river recreation and management information is provided for paddlers and resource managers. Explorer rivers at www.nationalriversproject.com.

The National Rivers Project is a product of several federal agencies, state programs, non-profit organizations and efforts of individuals. The Project has been fortunate to work with partners from all over the United States to bring together paddling information for Wild & Scenic Rivers, water trails and whitewater rivers. River Management Society is grateful for financial support offered by the National Park Service, U.S. Forest Service, Bureau of Land Management and U.S. Fish & Wildlife Service. Without these federal partnerships, the database and website would not be what it is today – what is already captured, and what is in the queue to add.

Throughout 2020, we worked with a variety of organizations, but I’d like to focus on a handful of projects that were really quite special. We still have a few in progress, including a partnership with the Bureau of Land Management to add BLM-managed Wild & Scenic Rivers, however outlined-below are summaries of three projects with the National Park Service and another with the U.S. Fish & Wildlife Service, completed this year.

The Meramec River in Missouri, added to the NRRD in partnership with the Missouri Department of Conservation and the National Park Service.



NPS - Midwestern States Recreational Rivers & Water Trails

RMS worked Angie Tornes with the Midwestern Regional office of the National Park Service’s Rivers, Trails & Conservation Assistance program to inventory and add midwestern states rivers to the National Rivers Project. The first project, Wisconsin, was completed by then-NPS fellow Noelle Maxey, who assembled the tabular and attribute information for rivers in Wisconsin. The other four states were put together separately by Jack Henderson, through support from the National Park Service. This work resulted in the following:

For Missouri, 25 rivers and 575 access points were added. Our primary source for this information was the Missouri Department of Conservation and the Float Missouri - Paddlers Guide to Missouri website. We primarily worked with Timothy Bixler – GIS analyst for Missouri Department of Conservation, and the following rivers were added: Big Piney, Big River, Black River, Blue River, Blue Springs Creek, Bourbeuse River, Bryant Creek, Castor River, Courtois Creek, Current River, Elk River, Gasconade River, Grand River, Huzzah Creek, James River, Lamine River, Meramec River, Mineral Fork, Missouri River, Niangua River, North Fork White River, Osage Fork Gasconade River, Osage River, St. Francis River, Shoal Creek, Sac River.

<http://www.nationalriversproject.com/directory/MO>

For Indiana, 28 rivers and 605 access points were added. Our primary source for this information was the Indiana Department of Natural Resources - 1987 Indiana DNR Canoeing Guide. We worked with Allen Hurst of the Indiana DNR, and the following rivers were added: Big Pine Creek, Big Walnut Creek, Blue River, Cedar Creek, Deep River, Driftwood River, East Fork Little Calumet River, East Fork White River, Eel River, Elkhart River, Fawn River, Flatrock River, Iroquois River, Maumee River, Mississinewa River, Muscatatuck River, Ohio River, Pigeon River, Saint Joseph River - Fort Wayne, Saint Joseph River - South Bend, South Branch Elkhart River, Sugar Creek, Tippecanoe River, Trail Creek, Wabash River, White River, Whitewater River, Wildcat Creek.

<http://www.nationalriversproject.com/directory/IN>

For Ohio, 73 rivers and 800 access points were added a partnership with the Ohio Department of Natural Resources’ Division of State Parks & Watercraft. We worked with Tom Arbour - Land & Water Trails Coordinator, and Tim Beck - GIS analyst.

<http://www.nationalriversproject.com/directory/OH>

Explore / North Carolina / Cheoah River

Cheoah River, NC

Class IV

Cheoah River (Santeelah Dam to Little Tennessee River)

The Cheoah River, 20 miles long, is located in the extreme southwestern corner of North Carolina, near Robbinsville. Unique in its features, the Cheoah is one of the most physically demanding rivers in the world and the perfect challenge for the most adventurous paddlers. For seventy years, the nine-mile section between the Santeelah Dam and Lake Calderwood was dewatered. American Whitewater advocated for the releases which began in the fall of 2005. Each year, there are at least 18 releases for paddlers to enjoy for the next 40 years. (Source: Smoky Mountain Blueways)

SECTION DETAILS	
Fishing	Yes
Camping	Yes
Manager	U.S. Forest Service, Nantahala National Forest
Wild & Scenic	No
Water Trail	No
Partner Information	http://www.visit-smokies.org/smoky-mountain-blueways/ http://www.visit-smokies.org/smoky-mountain-blueways/cheoah-river/
Description	American Whitewater
River Flow Information	https://safewaters.com/facility/3 This section of river is dependent on flow being released from an upstream hydropower dam. For 77 years the nine-mile section between the Santeelah Dam and Lake Calderwood was dewatered. American Whitewater along with the Western North Carolina Paddlers advocated for releases for over 6 years. Whitewater releases on the Cheoah began in the fall of 2005. Each year there are at least 18 releases for paddlers to enjoy for the next 40 years. (Source: American Whitewater)

Above: Cheoah River, North Carolina. Note the additional hydropower-flow release information at the bottom of the Section Details table.

For Illinois, we added 18 rivers through the “I Fish Illinois” web page and information provided by the Illinois Paddling Council’s Sigrid Pilgrim. The added rivers are: Cache River, Des Plaines River, Embarrass River, Fox River, Illinois River, Iroquois River, Kankakee River, Kishwaukee River, La Moine River, Mississippi River, Ohio River, Pecatonica River, Rock River, Sangamon River, Spoon River, Wabash River, Vermillion River.

<http://www.nationalriversproject.com/directory/IL>

For Wisconsin, 28 rivers were added through partnerships with

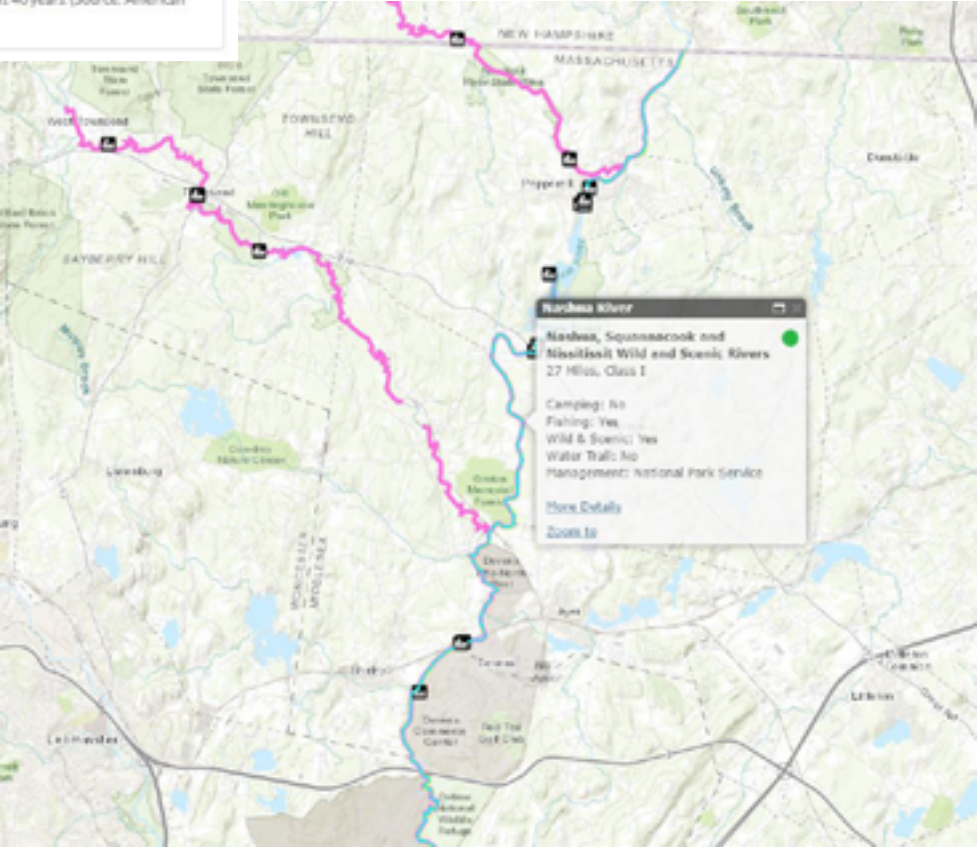
the River Alliance of Wisconsin, Wisconsin Department of Natural Resources and National Park Service – Rivers, Trails & Conservation Assistance. We worked with Noelle Maxey, and Angie Tornes, from National Park Service’s Midwestern Region RTCA, to add the following rivers: Baraboo River, Black River, Bois Brule River, Brule River, Flambeau River, Fox River, Kickapoo River, Manitowish River, Menominee River, Milwaukee River Montreal River, Mukwonago River, North Fork Flambeau River, Peshtigo River, Pike River, Pine River, Popple River, Red Cedar River, Sheboygan River, South Fork Flambeau River, Sugar River, Tomahawk River, Totagatic River, White River, Wisconsin River, Wolf River, Yahara River.

<http://www.nationalriversproject.com/directory/WI>

NPS - Hydropower Flow Release Rivers

RMS worked with Susan Rosebrough and Kevin Mendik from the National Park Service’s hydropower program, and Bob Nasdor - Northeast Stewardship Director for American Whitewater, to build upon a previous project of 2019, and add to the NRP - additional rivers which rely on hydropower flow releases for paddling. Joan Harn of the National Park Service began the project in 2018, and Susan Rosebrough led this edition. We inventoried rivers and hydropower-flow projects which were popular with boaters, using American Whitewater’s database and local knowledge, and then sought flow release information and web links for users to see when the river had scheduled releases. This information was sourced from project partners, and the spatial data were created and added to the NRP by RMS.

Nashua River, Massachusetts. The Nashua is one of many Partnership Wild & Scenic Rivers added under the 2019 Dingell Act.



The newly-added rivers are: Beaver River, Black River, Dead River, North Fork Feather River, West Branch Penobscot River, Susquehanna River, Swan River, West River, Wisconsin River.

NPS - Dingell Act Partnership Wild & Scenic Rivers

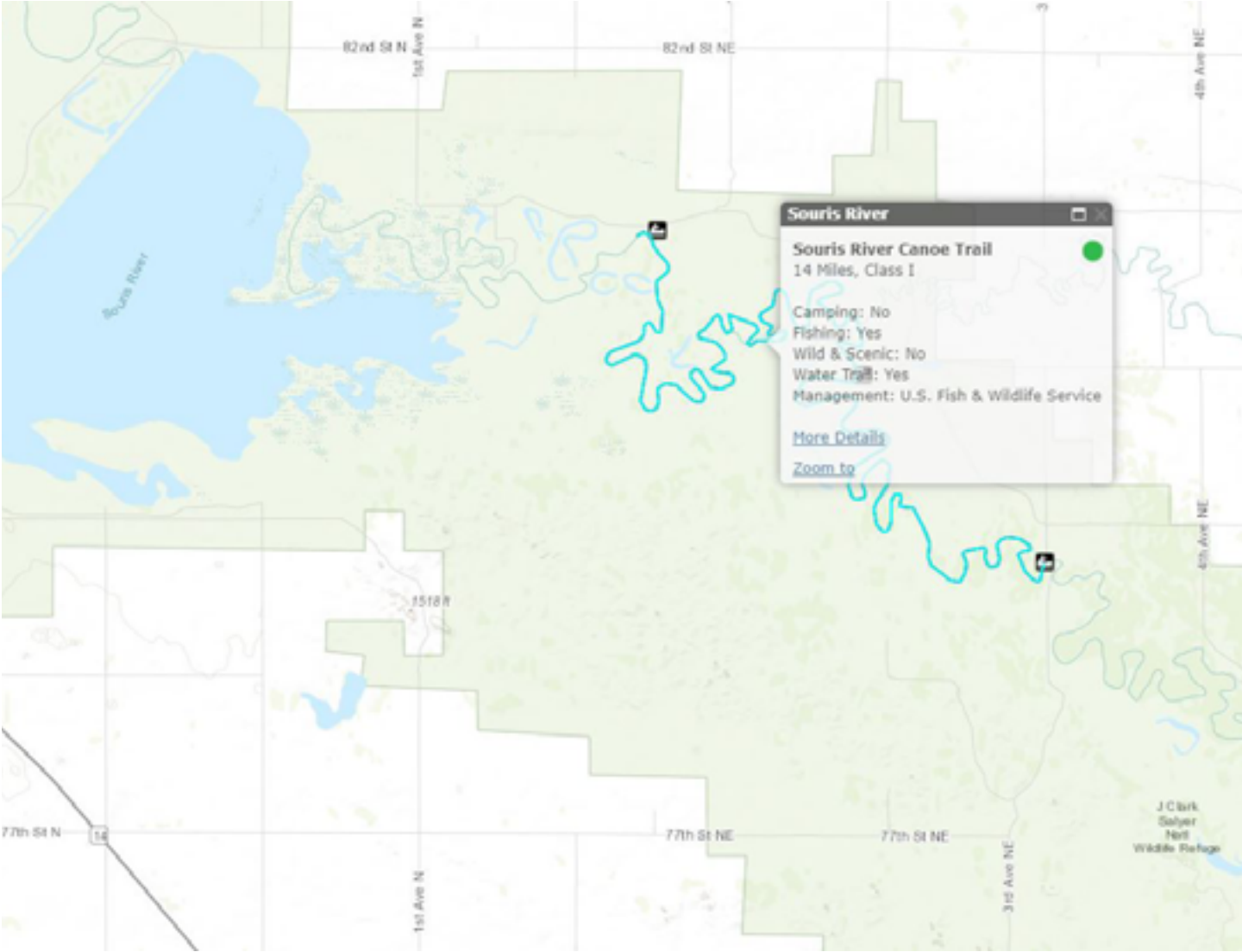
RMS worked with Corita Waters and Emma Lord from the National Park Service’s Rivers, Trails and Conservation Assistance and Wild & Scenic Rivers programs to inventory and add to the NRP – boatable sections of the newly-designated Dingell Act Partnership Wild & Scenic Rivers. The John D. Dingell Jr. Conservation, Management, and Recreation Act of 2019 protected hundreds of miles of new Wild & Scenic Rivers across the United States. Three of these new designations - Lower Farmington River and Salmon Brook Wild and Scenic River; Nashua, Squannacook and Nissitissit Wild and Scenic Rivers; Wood-Pawcatuck Watershed Wild and Scenic River – have strong local support and a well-established network of recreational paddling opportunities. The purpose of this project was to add these new designations’ respective reaches to the National Rivers Project, partnering with the regional NPS office and local river groups to inventory and add information on recreational paddling and access. In total, 21 river segments, 46 river access points,

and 1 campsite were added, including: Farmington River, Salmon Brook, West Branch Salmon Brook, East Branch Salmon Brook, Nashua River, Squannacook River, Nissitissit River, Pawcatuck River, Shunock River, Beaver River, Green Fall River, Ashaway River, Queen River, Usquepaug River, Wood River, Chipuxet River.

USFWS - National Wildlife Refuge Water Trails

RMS partnered with the U.S. Fish & Wildlife Service’s Nancy Roeper – National Wilderness Coordinator and Ron Salz – Chief Cartographer, to inventory and add to the NRP – Wildlife Refuges, and the associated waterbodies, that are listed as water trails, and/or are popular paddling destinations. The information we added correlates with the information on the USFWS water trails website. Our work resulted in adding information for Refuges - 103 waterbody segments and 50 access points. The data were created by studying static and interactive maps on Refuge websites, gleaning publicly-available GIS data on Refuge amenities, researching waterbodies and access points through other websites and publications, and seeking feedback on data from Refuge managers. See the newly-added information here: <http://www.nationalriversproject.com/directory/USFWS>◆

The Souris River Canoe Trail within J Clark Salyer National Wildlife Refuge. This was our first NRRD addition for North Dakota!



New Coordinator for the National Rivers Project

by RMS Staff

Please welcome James Major to the River Management Society (RMS) team as the new National Rivers Project (NRP) Coordinator. James holds a Bachelor of Science in Geography from the University of Oregon as well as a Master of Science in Environmental Science and Policy from Northern Arizona University.

He is one of 25 students who have completed the RMS River Studies and Leadership Certificate (RSLC) since 2014 and has already experienced working with RMS through this program. His technical experience includes geographic information systems (GIS), Structure from Motion modeling and geospatial coding, and he is well-versed in Wild and Scenic Rivers history and policies.

“I first became familiar with RMS through the RSLC program and especially through presenting at two RMS symposiums: one in person in Vancouver, and one virtually through the Richmond poster session,” said Major. “When I found out there was a position available with RMS that aligned with my career goals of working with rivers and GIS, I knew I wanted to join. I was fortunate enough to get that opportunity and am honored to be the new NRP Coordinator.”

Working as a student research assistant on several Wild and Scenic rivers in Oregon, including the Rogue and John Day, was very influential in his academic and career aspirations. James’ thesis research focused on the management of potentially eligible rivers for Wild and Scenic designation. As such, James is excited to join RMS and looks forward to continuing to expand the NRP database with the goal of making river trips more accessible to people all over the country. He feels it is important for more people to experience the wonder of our Wild and Scenic Rivers to strengthen support and advocacy for expanding state and federal river protection policies.

“Even though I have only been here for a little while, I can already see the strong support system that RMS has created internally,” said James. “Also apparent is the interest and desire for success exuded by our partners concerning the NRP. I am excited to continue the good



James Major

work that Jack has done over the years and continue to expand the National River Recreation Database (NRRD) to connect people to their rivers.”

GIS and Program Assistant Jack Henderson, who has developed the NRRD since its very early days, is moving on and wishes James well. “I am confident that James’ background, skills and passions for rivers will insure a smooth transition into this new role. I have no doubt that he will thrive developing and amplifying creative new projects, expanding relationships with both existing partners and new organizations and agencies.”

James resides in Flagstaff, Arizona, with his partner Rose and dog Leo. He is an avid fisherman and serviceable kubb player. When he is not working to protect and promote our nation’s rivers, James loves to explore the Verde River valley and its tributaries.

The NRP is the United States’ ever-growing comprehensive, authoritative database and interactive map that records and shares paddling information for Wild & Scenic Rivers, water trails and select whitewater rivers. This information is sourced and vetted by local managers and is available to the public online. Visit the NRP at www.nationalriversproject.com, and reach out to James directly at: james@river-management.org.◆



The American River, spanned at Sac State by the Guy West Bridge, will continue to be a research venue in an ongoing project that is expanding, based on a new \$2.7 million grant to the University. (Sacramento State/Andrea Price)

\$2.7 million grant expands waterway research, boosts STEM

by Cynthia Hubert

The American River is a regional treasure, and a beautiful Sacramento State landmark. But it has been harmed by human activities, and is listed as “impaired” by federal water authorities.

Sac State science students in recent years have actively monitored and studied the river, practicing their research skills and contributing to knowledge and understanding of a precious resource.

Now, thanks to a substantial grant from the National Science Foundation (NSF), the project will be expanded to more Northern California waterways and more disciplines across campus. It also will include students and faculty members from the Los Rios Community College district.

The five-year, \$2.7 million grant will fund the second phase of the Sustainable Interdisciplinary Research to Inspire

Undergraduate Success (SIRIUS) project.

The project stemmed from a desire by faculty members to give undergraduate students authentic research experience, said Kelly McDonald, a Biology professor and director of Sac State’s Center for Science and Math Success.

Researchers in science, technology, engineering and mathematics, or STEM,

are in high and growing demand in the United States and across the globe, McDonald said. “We need many more STEM-trained workers in order for the United States to grow economically and stay competitive,” she said.

For the first phase of the SIRIUS project, which began in 2014, Biology, Chemistry, Geology and Environmental Studies professors redesigned 16 laboratory courses to focus on a common theme: how human activities have affected the American River ecosystem. Some key areas of human impact on river ecosystems include pollution, flow modifications, the introduction of exotic species, and camping and boating.

In the field and inside laboratories, Sac State students identified and studied environmental contaminants and toxins in the river, and their effects on microorganisms and human cell lines. “The research is relevant to the community overall, but particularly to our students, since the American River runs through our campus,” McDonald said. “They are building skills and addressing an important local problem.”

Prior to SIRIUS, only a small percentage of undergraduate Biology students at Sac State had an opportunity to conduct research, McDonald said. Now, nearly all of them can do so. Adding six disciplines to the project, from Computer Science to Geology to Physics, will allow thousands more students to gain research experience, McDonald said.

“Depending upon their discipline, we want them to do what professionals in the field typically do,” she said. For example, Engineering students could study how dams and levees impact waterways. Math students could develop scientific models and simulation tools.

Evidence suggests that the ability to conduct research as undergraduates inspires more students to pursue STEM careers, said McDonald.

Adding Los Rios to the project will boost the skills of those students, many of whom will transfer to Sac State, said Lisa Hammersley, interim dean of the College of Natural Sciences and Mathematics.

“I am so excited that this grant will now allow the SIRIUS project to grow beyond Sacramento State and be adopted by our community college partners, which will impact even more students in STEM,” Hammersley said.

Linda Zarzana, a Science professor at American River College in the Los Rios district, said she is excited about the Sac State partnership and enthusiastic about giving more students a taste of real-world research.

“It will allow them to think more like scientists,” Zarzana said. “They will be asking themselves, ‘What is the purpose of this research? Who will benefit? Where is the data going?’ It will allow students to become more engaged and really understand what it’s like to be a science person.”

Sac State faculty members will be collaborating with Los Rios faculty in Science to develop project curricula. Ultimately, Zarzana said, data that students gather during SIRIUS II will be shared with the larger scientific community and local and state governments.

The American River is a perfect focus for the project because “it connects all of these institutions,” Zarzana said. “It’s a nice unifying concept.”

Students taking part in SIRIUS II will

conduct research on other bodies of water in the area as well, including Folsom Lake and the Cosumnes River.

McDonald said SIRIUS is a novel program for an institution like Sac State, where the primary focus is not on research, but teaching. The project is drawing interest around the country, she said.

“No colleges have done what we have done in terms of linking so many courses across Biology and related science disciplines,” she said. “What’s novel about our program is the scope of it, and the number of students and faculty who are looking at a common theme across an entire curriculum of Biology.”

More than 5,000 students and 38 faculty members participated in the first phase of SIRIUS. With the addition of new disciplines, its impact promises to be even greater, McDonald said.

“Collaboration across many different disciplines is the key goal,” she said.

Some courses in the project may have to be adapted because of the impacts of the COVID-19 pandemic, McDonald said. Some students may have to participate in “virtual labs” if they cannot meet face to face, for example. Students may have to use previously gathered data in their research, or collect samples on their own rather than in groups with faculty supervision.

Regardless of the format, the project will continue to be a key to student growth, McDonald said. “SIRIUS II will take everything we’ve already learned and ramp it up,” she said.♦

Reprinted with permission by Sacramento State University. July 31, 2020. Notice of this grant award shared by James Vonesh.

50th Anniversary of the Virginia Scenic Rivers Program

by Lynn Crump

It was an amazing feat performed by the Virginia Scenic Rivers Program on July 1, 2020. That was the day that six new Virginia Scenic Rivers were accepted into the program, just after June was proclaimed as Virginia Rivers Month. The program also turned 50 on July 1, and a steering committee representing many river interests has been working since 2018 to plan a nearly yearlong celebration.

In 1970, shortly after the national Wild and Scenic Rivers Program went into effect, Virginia started its own program. The program was a result of recommendations from the first Virginia outdoors plan of 1965, *Virginia's Common Wealth*, and a strong group of advocates who worked tirelessly on creating a program to recognize Virginia's rivers. The first step was the creation of a report identifying 28 rivers to be considered for inclusion into the program. This set the course for how rivers could qualify for designation.

Early community outreach was met with much pushback due to property rights issues throughout the Commonwealth and a couple of escorts out the back door during public meetings, as staff tried to implement a program similar to the national one. After several unsupported community outreach meetings staff and local supporters decided to turn the program into a recognition program versus a management program. The only regulation that comes with a designation is that a dam, or other flow impediment, may not be built without General Assembly approval. Other than that, all regulation and land use control is the responsibility of the localities with the state only commenting when asked or on state or federal permits. Thus the program, administered by the Department of Conservation and Recreation, comments are not regulatory, but just recommendations.

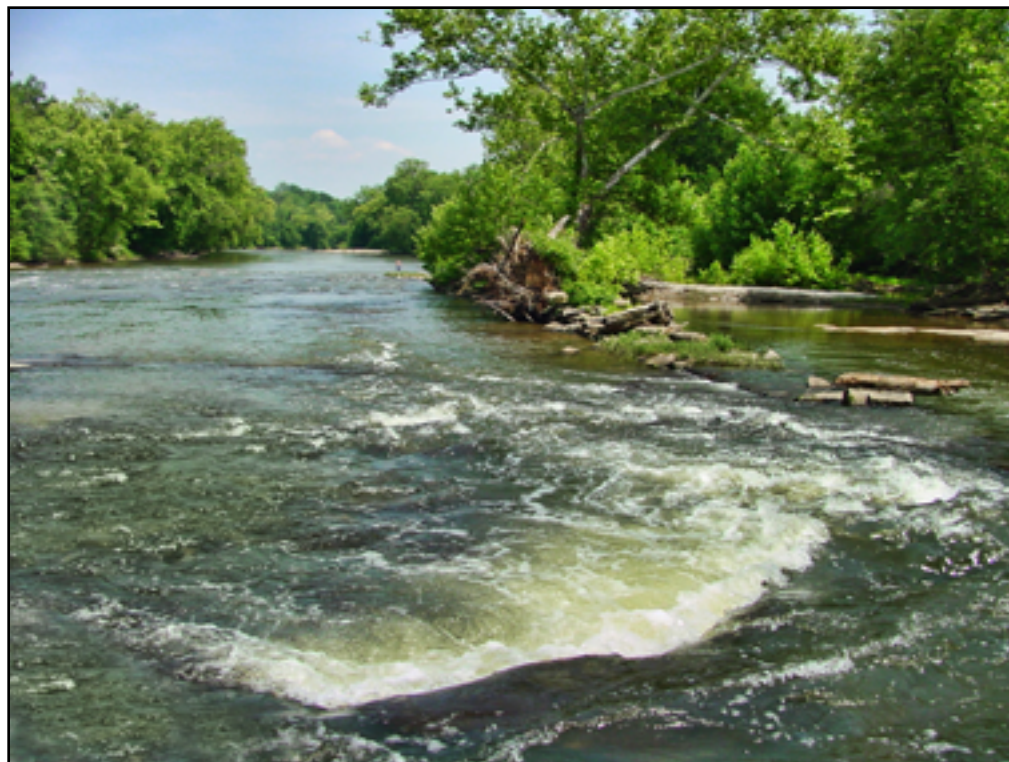
In anticipation of the 50th anniversary the steering committee of about two dozen met to talk about goals for the celebration. The recommendations were focused on increased awareness of the program through a variety of efforts. Getting the General Assembly in early 2019 to pass a resolution supporting the program and its upcoming 50th anniversary set the stage for local actions. Most notably among the recommendations was the decision to strive for getting five new rivers

designated in 2020. This followed a similar effort in 2010, when four rivers were designated for the 40th anniversary. Through community outreach and informational meetings about two dozen requests came in. Of those six ended up getting designated on July 1, 2020 for a total of 36 segments and 971 miles of designated Virginia Scenic Rivers.

Three of the new designations were on existing scenic rivers. Together they represent Mountain, Piedmont and Coastal rivers. Each river was paddled and evaluated on 13 criteria. [Full reports](https://www.dcr.virginia.gov/recreational-planning/srstudies) [https://www.dcr.virginia.gov/recreational-planning/srstudies] used by the General Assembly are housed on the DCR website for full access of the public.

The Staunton River, one of the first in the program being designated in 1975, was extended 11.5 miles for a total of 62.8 miles. This section of the river flows through mostly agricultural lands with significant buffers and no development. It connects the existing designated section to Staunton River State Park which allows for excellent access for fishing and boating. The fishing is very good for the abundance and varieties present. The meandering alignment makes the river - though broad and slow - a pleasant family-friendly float.

Staunton River. Credit: A. Bohanon



Grays Creek. Credit: DCR



James River. Credit: DCR

Grays Creek, the coastal representative, flows into the James River, a designated historic river, across from Jamestown. The six miles quickly loses its development closer to the James as it meanders through tall wetland grasses, allowing for extensive bird and wildlife viewing and past several early colonial historic sites. Good fishing and easy access make this a wonderful excursion and a highlight for Surry County.

The other newly designated section in the Piedmont is on the James River. The James is the largest watershed in Virginia and this new section makes the fourth section qualified for designation. This new section, just below Charlottesville, goes from Class 1 rapids at Warren through several long stretches of flat water with a series of islands and several ledges that can test one's skill if one gets too complacent. The historic Kanawha Canal was along all of this 19-mile section, and occasional ruins can be seen. Long views downriver allow some different experience along the well-used section of the river, which is in part due to a local outfitter who provides generous access to a lot of this section. The economic benefit associated with being connected to a Scenic River was in part what drove communities to seek the designation for this section.

Mountains are the basic experience for the last three designations. One, the Clinch is an extension of sections designated in 1990, 1992, and 1994. This river, known as the most biologically diverse river in the East, touts numerous rare and endangered fish and over 100 varieties of mussels. The river has a range of rapids and flat water and multiple sections of the 66+ miles that can be floated. With the development of Clinch River State Park, natural area preserves and The Nature Conservancy lands working together to protect this rare river, the hopes of increased water purity will continue.

Heading west of the Clinch Valley is the newly designated Pound River. This extremely remote river has few access points, but its meandering alignment and lack of development means

the secluded paddle is accomplished easily with its frequent riffles and occasional rock gardens. The Pound offers 17 miles of varying river experiences, from flat water to Class II rapids, cliffs, long and short views, and good fishing along this unique river.

Turning northeast from the Pound is the last river, the Maury. This historic river is known for its Goshen Pass, where the river cuts through Little North Mountain with one of the most difficult rapids in Virginia. Good fishing, views and historic canal system create interest along the 19-mile river segment from technically challenging to peaceful contentment as it gets closer to Lexington.

Three of the new river segments were in the original 1969 “Virginia’s Scenic Rivers” report to the General Assembly. Eleven out of 27 rivers mentioned in the report have been designated as scenic. Many people may wonder why so many rivers are or should be designated in Virginia. We have over 49,000 miles of rivers, so scenic rivers account for less than 2% of all rivers in the Commonwealth. So identifying and recognizing rivers with “[superior natural and scenic beauty, fish and wildlife, and historic, recreational, geologic, cultural, and other assets](#)” will go far towards our original mandate to protect our river resources.

Clinch River. Credit: Irvine T. Wilson / DCR



The strength of the program rests with the localities and in several cases local advisory committees that monitor and work with local planning agencies to help protect the river along with its viewsheds and environs.

Having this recognition “...makes economic sense, as protecting our natural resources promotes ecotourism as well as safeguards our environmental treasures,” wrote Pamela Stallsmith of the Richmond Times-Dispatch (7/24/2020).♦

Lynn Crump, PLA, serves as Scenic Resources Coordinator for the Virginia Department of Conservation and Recreation.

Pound River. Credit: DCR



Maury River. Credit: DCR



RSLC Toolkit

by Angie Fuhrmann

It is the time of year for students to head back to school, and despite the new challenges facing higher education, we are busy supporting RSLC advisors and students. During the last couple of months, Angie suggested tools to help advisors recruit and support their programs. Thanks to a wonderful suggestion from Bekah, we have added support to RSLC students after graduation in two ways. First, the development of an RSLC alumni cohort can add a valuable dimension to their involvement, particularly beyond their own school's group. In addition, keeping up with them will help us learn about their professional trajectory (i.e., if they pursue river science, management, or other related paths).

Some of the resources we have put together include:

Resources

- [Institution logos](#) (now linked to their respective RSLC website pages)
- [Certificate](#)
- [Guiding Document](#)
- [Examples of Courses](#) which Fulfill Requirements

Student Support

- The RMS President mailed certificates plus letters to 2019-2020 graduates.
- Jobs.gov Discussion - We'd like to host another session for students interested in applying for federal jobs. This session was well attended last fall and we are excited to offer it again.
- We are seeking internship opportunities from our members and partners.

Fossil Creek. Courtesy of Northern Arizona University RSLC Program.



Outreach Toolkit for Advisors

The recent RSLC Advisor Survey, fielded by Kelly Bricker, told us that advisors utilized classroom visits, community-building or focused recruitment events, and river trips to engage and support RSLC students. In response, we've developed tools to help advisors with these efforts:

- [Short Promotional Video](#) - This 1-minute video briefly describes the RSLC program and is available for advisors (and RMS members!) to share on social media, in class, or directly with prospective students.
- [Trifold Brochure](#) - Includes a space for advisors to add their contact information.
- [11"x17" Poster](#) - For advisors to personalize with a meeting time or their contact information.
- Events list - These are some ideas to help advisors recruit students, promote their RSLC program, and raise money for activities:
 - Host a Q&A social hour on Zoom/GoToMeeting/etc. (we can help you!)
 - Host lunch social in a campus meeting room
 - Host an environmental/paddling/river film festival event where students introduce films or submit their own
 - Host a river trip!
 - Host a "paddle-a-thon"— have people take pledges for each mile paddled and raise money for the group
 - Host a river cleanup event as a fundraiser or promotional event
 - Share photo albums of classes and trips on Facebook, Instagram, etc.
 - Reach out to local paddling clubs and distribute flyers/brochures at parks, stores, gyms, libraries, etc.

Alumni Engagement

- News Release – A [story](#) about certificate awardees for 2019-2020 school year was sent to local media, university media, campus media, and RMS outlets. The story was also published in RMS website News.
- [Facebook Group](#) – To keep in touch with alumni, current students and advisors are being encouraged to join for trip planning, career success and more!

As RSLC advisors approach the challenge of conducting river-based classes this fall, RMS will continue to support RSLC advisors and students because our rivers need the insights and instincts of this knowledgeable, passionate group more than ever. ♦

Courtesy of Virginia Commonwealth University RSLC Program.





GCY youth collecting data in a side canyon on the Colorado River in Grand Canyon National Park on a Partners in Science Expedition. Photo: David Herasimtschuk

Science and Stewardship at Grand Canyon Youth: Engaging Youth with Citizen Science and River Management on Southwest Rivers

by Madeleine Smith

Grand Canyon Youth (GCY) is a 501(c)(3) non-profit organization based in Flagstaff, Arizona, that was founded in 1998 by three Grand Canyon river guides who believed that all youth could benefit from time spent on a river. Since then, GCY as an organization has grown to serve youth ages 10-19 who travel to the Southwest from across the country to learn from desert rivers. In 2019 1,093 youth joined GCY on 76 expeditions on the Colorado, San Juan, and Verde Rivers in Arizona and Utah. Youth often remain in touch with GCY after their experiences, frequently returning to work as guides, mentors, or as volunteers with the organization. GCY collaborates with land management and research entities to participate in Citizen Science and service projects. Additionally, GCY offers Peer Support Expeditions for youth with shared life experiences, embodying their commitment to provide access to these river expeditions to diverse groups of youth participants.

GCY continues to seek new collaborations to grow their organization and the community they have built and fostered. In recent years, they established a relationship with the Department of Geography, Planning, and Recreation at Northern Arizona University; undergraduates in the B.S. in Parks and Recreation

Management degree can complete their internship requirement at the organization. As a graduate student in the same department, I pursued the opportunity to collaborate with GCY, receiving no hesitation from the director, Emma Wharton. For my research, I dove headfirst into their Citizen Science programatics. In this undertaking, I learned about the organization's diversity of scientific collaborations to provide recommendations for using Citizen Science as both a research method and as an educational platform.

Citizen Science is broadly defined as public participation in scientific research, where members of the public work with a professional scientist to gather large amounts of data. Without this large public participation, these large swaths of data would be difficult for a scientist to collect alone. One reason Citizen Science is of such interest to me, is the idea of the "democratization" of science, as participation in Citizen Science brings the public and science closer together (Irwin, 1995). Participants engage with scientists and the scientific process and directly contribute to research, and in some cases, this research informs management.

At GCY, most multi-day expeditions collect data for Citizen Science while on the river. GCY has collaborated with around

40 different projects since their founding and has developed some long-lasting relationships with entities such as the United States Geological Survey's Grand Canyon Monitoring and Research Center (GCMRC), the National Park Service, and Glen Canyon National Recreation Area. In 2019, most multi-day expeditions collected data in collaboration with these entities, for both an Aquatic Insect Light Trap Monitoring Project, and a Citizen Science-Based Acoustic Bat Monitoring Project. GCY also offers expeditions on the Colorado River in Grand Canyon National Park called Partners in Science Expeditions. Since the emphasis of these expeditions is participation in current and ongoing scientific research, there are additional Citizen Science projects on

these expeditions that require data from within Grand Canyon. In 2019, there were four projects on the Partners in Science expeditions that show GCY's diverse array of collaborations they strive to bring to their youth: The Dragonfly Mercury Project, a Tamarisk Defoliation Survey, a Microplastics Distribution Survey, and a Native and Non-Native Fish Distribution and Abundance Monitoring Project.

In terms of how these projects contribute to river management, a well-known Citizen Science project that has long been in collaboration with the Grand Canyon river community is the GCMRC aquatic insect light trap monitoring project. The Glen Canyon Dam Adaptive Management Program (GCDAMP) was established in 1997,

and the GCMRC is the science provider for this program (Melis, 2015). This program seeks to manage the Colorado River as it "flows" through the Lake Powell reservoir in Southern Utah and Northern Arizona, through Glen Canyon Dam in Page, Arizona, and into Grand Canyon National Park before reaching the Lake Mead reservoir above Hoover Dam. The GCMRC provides ecosystem monitoring and analysis downstream of the Dam to inform, and at times, provide recommendations for continued improvement and enhancement of the downstream river's ecosystem (Melis, 2015).

Providing science for the GCDAMP has proven to be an essential role in the adaptive management of Glen Canyon

Youth collecting data for the Dragonfly Mercury Project in collaboration with the National Park Service on the San Juan River. Photo: Katherine Ko



Dam, however, scientists faced immediate challenges when confronted with the logistics of collecting data on the stretch of the Colorado River that flows through Grand Canyon National Park (Kennedy, 2016). Faced with the need for data in areas most easily accessible via week-long rafting trips at minimum, they reached out to the greater Grand Canyon river community – establishing a collective Citizen Science effort. Professional river guides, National Park staff, and educational groups such as GCY have since contributed data for research and monitoring on the Colorado River below Glen Canyon Dam and on the San Juan River (Muehlbauer, 2019). Since 2012, scientists have used light traps to monitor insect distribution and abundance on the Colorado River in Grand Canyon and on the San Juan River, with the help of Citizen Scientists (Kennedy, 2016).

Data collected on these rivers showed scientists that aquatic insect communities below Glen Canyon Dam had lower species richness than those downstream of other dams in the Western US. These data contributed to observing the effects of hydropeaking on food webs in this ecosystem. Hydropeaking is when river flows controlled by a dam increase during the day when energy demand is high, and decrease at night when demand is low, creating water level fluctuations that produce artificial tide patterns. This in turn affects the recruitment of aquatic insects via acute egg mortality (Kennedy, 2016). This research showed the instability of food webs as a result of aquatic insect mortality and resulted in recommended environmental flows that would continue to meet societal needs while ensuring ecosystem stability (Kennedy, 2016). These environmental flows, known by many informally as the “Bug Flows,” were recommended in 2016 and initiated by the GCDAMP in 2018, and repeated in 2019 and 2020. These flows were released from May to August and differed from hydropeaking flows due to their low and steady release for 48 hours on the weekends, when electricity demands are lower and hydropeaking is less lucrative (Kennedy, 2016).

This example of public engagement in science and contributing to river management is one that seems worth sharing widely to serve as a model for other river managers and scientists. Numerous people in the Grand Canyon river community have contributed to this example of adaptive management of a river ecosystem, and among them, the youth on GCY expeditions. As Citizen Science and its potential as both a method and an educational platform grows, so can examples of direct public contribution to scientific research that informs management.

There are instances of Citizen Science being incorporated into Outdoor, Experiential, and Place-Based Education settings, but it is by no means a widespread practice. Moreover, few organizations that engage with these non-traditional educational concepts incorporate Citizen Science as deeply and consistently



Youth collecting data on native and non-native fish on a 2019 Partners in Science Expedition on the Colorado River in Grand Canyon National Park. Photo: Jan Boyer

as Grand Canyon Youth. After concluding my research with the organization, it is our goal to provide other organizations with a model to reference so that Citizen Science as an educational platform can become more accessible to educators.

GCY, like many organizations, is in the midst of navigating COVID-19, so I cannot speak with much certainty about Citizen Science on their expeditions in 2021. But I have faith in the resilience and the adaptive capacities of this organization and have nothing but high hopes for the future of their scientific collaborations.◆

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Welcome! New RMS Members

Professional

Roderick Hoyt Simmons, Natural Resource Manager
Alexandria, VA

John Wenck, Water Trails Coordinator
Iowa Dept of Natural Resources
Des Moines, IA

Darren Shepherd, President
SG1 Water Consulting Ltd.
Edmonton, AB

Lucia J. Portman
RTCA Program Fellow
National Park Service
Seattle, WA

Kestral Kunz, Southern Rockies Stewardship Assistant
American Whitewater
Crested Butte, CO

Hattie Johnson, Southern Rockies Stewardship Director
American Whitewater
Carbondale, CO

Student

Echo Miller-Barnes
Lewis & Clark College
Crawford, CO

Lindsay Erika Hansen
Northern Arizona University
Flagstaff, AZ

Kara Rae Campbell
Sierra Nevada University
Incline Village, NV

Mark Glass
Virginia Commonwealth University
Petersburg, VA

Associate

Ryan Schreiner
Arvada, CO

Sigrid Pilgrim, Illinois Paddling Council
Evanston, IL

Government / Corporate Organizations

Jessica Newbern, Biologist
NPS Upper Delaware Scenic & Recreational River
Beach Lake, PA

Dale Sparks, Senior Biologist
Environmental Solutions & Innovations, Inc.
Cincinnati, OH

Douglas McNeill, Govt Business Development Mgr
Environmental Solutions & Innovations, Inc.
Cincinnati, OH

Liz Anne Townley, WSR Planner
USDA Forest Service, WWSR
Lopez Island, WA

Leslie Kobinski, Chief of Commercial Services
National Park Service - Canyonlands
Moab, UT

Doug Mettler, Environmental Planner
VHB
South Portland, ME

Kara Opel, Environmental Planner
VHB
South Portland, ME

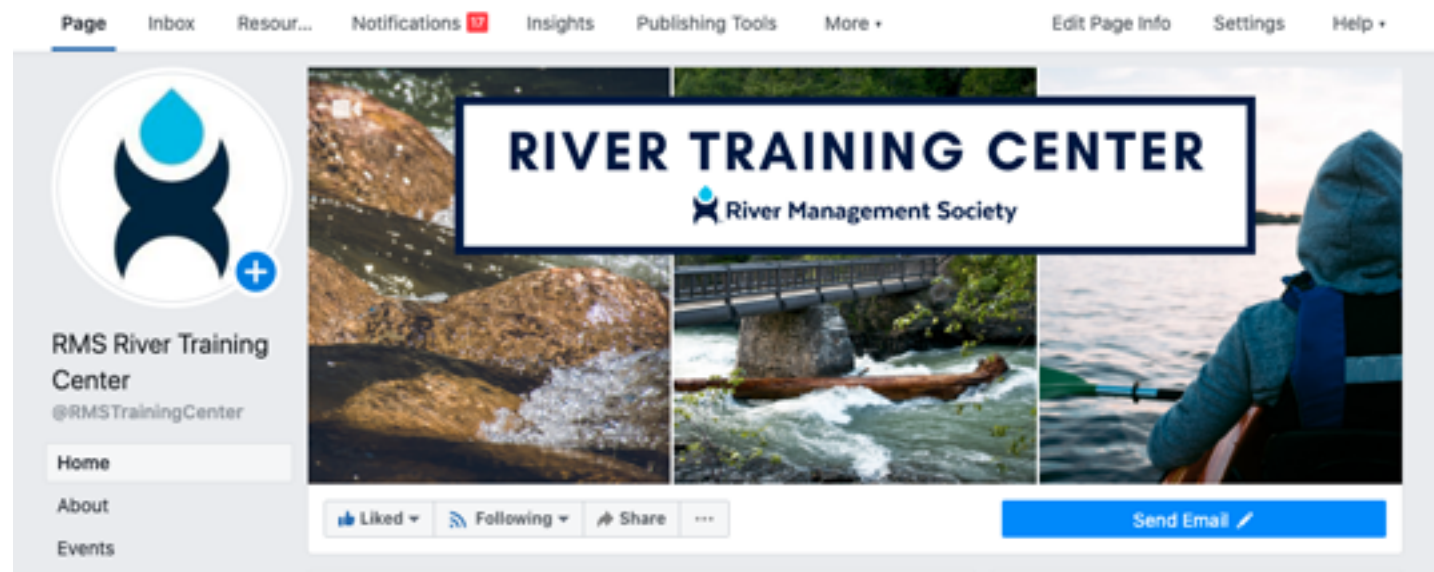
Trent Tullis
Werner Paddles, Inc.
Monroe, WA

Nonprofit Organizations

Robert Steven Vistica
Skakel-Vistica, Portland, OR

Victoria J. Skakel (retired)
Skakel-Vistica, Portland, OR





A Virtual Season of Engagement

by Risa Shimoda and Angie Fuhrmann

This ‘year of the pandemic’ has affected how we operate our businesses, instruct our students, share experiences, mentor co-workers, and run our personal lives. Workshops have been postponed... and, postponed again. Yet, as we reinvent how we meet, acquaint, learn and collaborate we are both gaining skills we’d never anticipated... and, kind of liking it!

Spurred by an unprecedented opportunity to serve the river management community — required to do so from locked-down home offices — we have offered a level of connection points for you, and hope you have felt welcome to participate, even if to sit in and check out the conversations that have reflected real-time issues, learning how others are addressing them.

River Training Center (RTC) Instructor Support

Angie Fuhrmann has been busy! She has provided a number of tools for River Training Center instructors and instructors-in-training! She has updated resources to provide the latest information about courses planned, moved, and in development, and a forum for informal discussion:

- Instructor Group Facebook Page (must request to join)

- Instructor Circle on RMS site (must request to join)
- Instructor-only page of resources for instructors logged-in to the RMS site
- [YouTube channel for instructors](#)

For the immediate future, workshops and training are taking place virtually. For that reason, Angie held Instructor Development Workshops for the 2nd and 4th Tuesday of the month beginning with sessions to become familiar with the administration of online platforms:

- July 14 - Intro to Zoom
- July 28 - [Intro to GoToWebinar](#)
- Aug 25 - Intro to GoToMeeting
- Sept 8 - Zoom Tricks!

Additional Instructor Development Workshops are planned and may include *How to Incorporate Engaging Content to Virtual Sessions*, *Best Practices for Leading Virtual Learning Sessions*, and more!

[GoToStage Video Channel](#)

Angie has compiled and organized current and past recordings of webinars, trainings, and conversations onto one video channel. As a component to updating the RMS website Bekah Price, RMS Communications Coordinator has added a ‘button’ on the River Training Center landing page that links to this video channel. Angie is hopeful that the Channel



can reach new audiences with videos that are free and accessible 24 hours a day, 7 days a week. As we continue to conduct webinars and conversations, they will be added to our video channel.

* * *

RMS continued to offer public events as we have reached out to state-based and other river professionals with programs we believe are both important and of interest:

Understanding the River Access Planning Guide

(June 18) — RMS hosted this introduction to the [River Access Planning Guide](#) as our first webinar produced to serve as an ‘on demand’ hour of focused training content for the RTC. Inspired by members Tom O’Keefe, PhD (Northwest Stewardship Director, American Whitewater) and Jordan Selter (Senior Landscape Architectural Designer, AECOM) and whose development and production have been supported by the National Park Service, Bureau of Land Management and US Forest Service, the Guide intends to serve as a resource for planners, river

managers, and users as they approach site selection and design to establish new river access or improve existing access. Tom and Jordan provided an excellent primer for this resource, and the [recording](#) is available 24/7 at the River Management Channel.

Covid-19: “One Month Later, What’s Working?”

Virtual Discussion with State River Managers (June 26) —

This provided a follow-up discussion about issues that had arisen and sharing of solutions that seemed to be working. Attendees discussed a variety of topics, including:

- What remained locked, unattended or not fully staffed / stocked
- Parking, Ramp use, Restroom protocols, Education vs. enforcement, Commercial trip management, Shuttle management, Non-commercial management, Distancing compliance
- Comments on crowds being the same as or greater than what would be expected for late June

- Degree to which people social distancing and wearing masks

John White offered that the Niobrara River (NE) is open and fully operational and the following comments, which we have heard repeated anecdotally from other river users and managers:

- River user traffic was perhaps twice the normal level
- They were seeing more private users than in past years, whose activities were creating conflicts with outfitters and landowners.
- His visitor center sales were ahead of last year
- One outfitter has projected this would be his best year yet.

Nancy Taylor shared that the parking issue was very difficult in popular areas in OR and WA, both along river access points and trailheads, resulting in quite a concentration of people in specific areas. Based on the discussion, it seemed that mask use was not prevalent.

RMS appreciates John Kreski, John Wenck, Michele Tremblay, Lelia Mellen, for sharing the hosting and others for participating!

They're coming!
Will you manage them or not?

Sharing results of the COVID-19 Survey conducted by Confluence Research and Consulting (June 26) —

We shared input from state river managers about what seemed to be working in the time of COVID-19, and encouraged discussion and shared the Confluence Research & Consulting [report](#) which documents the emergence from lockdown and initial opening of rivers based on the input of more than 70 river managers across the United States from May 7-25, 2020. A [recording](#) of this conversation is posted on the new River Training Channel.

You can check out the growing assortment of on-demand training sessions and conversations such as this one at www.river-management.org — *Professionals>Training & Events>RTC Video Training Channel.*

Waiting for someone else to challenge the effects of cultural inequity?

The moment to create positive change in your river world is now, and it depends on you. (July 14) —

As the topics of diversity and inclusion have led a national discourse, we started a discussion about what can be done to integrate equity into the environments in which we work. It was a beginning, and we learned from colleagues representing an array of perspectives. Nathan Burrell, Deputy Director, Government and Community Relations, Virginia Department of Conservation and Recreation shared what he is doing within his department to review hiring, promotions and evaluations with his employees.

We have borrowed two easy-to-remember, repeatable steps that can lead us toward positive change from Nathan and Ed Fite, Grand River Dam Authority (Illinois River, Oklahoma):

- 1) Listen, learn, act, and repeat: your action can be as simple as listening to a podcast, but what counts is *doing* it.
- 2) It's like picking up two pieces of trash: it takes intention, and everyone's participation will stir improvement and change.

Moses Chun, Outdoor Recreation Planner, NPS River Trails Conservation Assistance Program, participated as part of a cultural change workshop in development for the 2021 Symposium. This session was hosted by the State River Program Working Group.

Waiting for someone else?
Take 2

The discussion continued! (Aug 11) —

How dare we attempt to dig a tunnel through the mountain before us with a hand trowel? We are, and expect that as the conversations continue, we will find both a tipping point and a satchel of explosives to push forward. The discussion continued by visiting hiring, particularly in a large organization; introducing change in a monoethnic community, and addressing systemic, institutional leadership issues. Thank you, host collaborators Moses Chun, Michele L. Tremblay, Shannon Bassista, and Lelia Mellen.

We have but begun the discussion, and will continue September 22nd. Look for notices in your Inbox.

We offer the following thought starter and guide developed by RMS' Bekah Price in response to our recent conversations. Whether you are a student, hiring manager, independent consultant or retiree, this includes an action area for you to try out. It doesn't hurt and will begin to create change.♦

Listen.
Learn.
Act.
Repeat.

By 2045, minorities are expected to become the majority. How are your organizations and outreach efforts representative or not of this reality? If the diversity in your organization and the patrons of your parks and rivers do not align with your local and regional populations, this loss of involvement and lack of representation may lead to a loss of funding, protection and maintenance of these resources. What you do today to ensure equity matters!

The following framework can help you support a work environment and outreach to partners which reflect healthy, pragmatic, and forward-thinking change.

OUR ORGANIZATIONS	OUR COMMUNITIES	OURSELVES
-------------------	-----------------	-----------

Listen, Learn, Act, Repeat

Hiring	Understand the diversity of those using resources	What are my biases?
Promotions: how does diversity change as you move up the chain of command?	Encourage volunteerism among diverse groups	How does my personal background enable or hinder my success?
Evaluations: how do biases affect expectations and advancement?	Develop partnerships with diversity organizations	Am I aware of my privileges or lack of privileges?
Internships: how can reduce our dependence on culturally focused organizations to access culturally diverse candidates?	Invite diversity on boards and friends groups	Who can I reach out to today who can help me try being uncomfortable addressing my bias?
Equity Committee: start the conversation with peers	Partner with schools and universities to develop interest in conservation and recreation	
Funding Allocation for Projects	Examine how we act with those we work with and supervise as role models, teammates and change agents	
Locations of Projects		



Eleven Point WSR Workshop Goes Virtual

by Angie Fuhrmann

Thanks to the hard work of the River Training Center’s instructors, Mollie Chaudet, Rod Bonacker, and Maret Patujee, the Eleven Point Wild and Scenic River (WSR) Workshop took place - virtually! The goal of the workshop was to make significant progress in updating the Eleven Point WSR Comprehensive River Management Plan (CRMP) for the Mark Twain National Forest in Missouri. It was originally scheduled for Spring 2020, but due to restrictions on travel and social distancing measures, we were forced to postpone not once, but twice! The workshop took place over Zoom from October 5-8, 2020, with River Training Center instructors delivering relevant information while also engaging workshop participants in exercises that assisted them in updating their CRMP.

To prepare for the workshop going virtual, instructors, partners, and RMS staff explored the features and limitations of several virtual platforms like Zoom, GoToWebinar, and Microsoft Teams. This involved many learning moments, glitches, and laughs but the instructors become experts at screen sharing, muting, and answering questions. Instructors also worked hard to reorganize the agenda for the workshop, so that each session best utilized the features available on the platform while also making sure that the delivery of information varied to help keep the attention of participants. Without being able to meet in person, instructors further adapted to participant needs by providing pre-

workshop coaching sessions for interdisciplinary teams. These teleconference sessions provided additional support to workshop participants as they prepared reports and presentations to share with the larger group during the workshop. During the workshop, participants engaged with each other through screen sharing presentations about the Eleven Point Wild and Scenic River, breakout rooms to discuss stakeholder analysis, and outlined next steps for updating the Comprehensive River Management Plan.

Some take-aways from the workshop included:

- “CRMPs are VERY comprehensive, considering a lot of factors and ideas... Along with collaboration and public engagement, the stories and histories of those interested in the uses of WSRs is very crucial to consider.”
- “I’ve been serving in [my] position for the past three months, so this was a really good opportunity to get my feet wet in wild and scenic rivers (pun intended).”
- “There are lots of resources available to support this effort.”

For the near future, most workshops and training are taking place virtually. We see this as an opportunity to expand our capabilities and offer training to people who are unable to attend in person. Again, thank you to the instructors and partners at USFS who helped this virtual workshop come together and be a success!♦

RMS Southwest Chapter News

by Susan Roebuck

Dawn in Montrose found us loading the truck, and soon we rumbled over to Highway 50. The destination was “Escalante Canyon Road” six miles beyond the town of Delta, Colorado. There, we left Highway 50 and took a slender, well-engineered gravel road into dry mesa-and-canyon country. Finally, we arrived at a river similar in character to the Colorado—a great and welcome contrast to the dry territory through which we had just passed. Of course, we knew the river would be there, we didn’t discover it, but it was fun to think about what it would be like to come across such a river in this desert country. Standing on the banks of the Gunnison were Stuart, John, and Zeke to greet us, and our party of six was complete. A shuttle was set and before long, Stuart’s green Old Town canoe, John’s yellow canoe, Zeke’s red kayak, Keith’s blue raft and Rob and Susan’s green raft were loaded with gear and poised to float. Being a backpacker who weighs each item, I marveled at the abandon with which river travelers choose their items. We were going to be comfortable in camp tonight!

Our plan was to float from the Escalante Creek put-in to Escalante Canyon today, about 12 miles, and from the canyon to Whitewater the next — two day-long floats. The weather was perfect for our first day. However, the forecast called for wind and rain the next day. Zeke had floated the second stretch in the past, and recommended we cut the second day’s float short and get out at Bridgeport instead of Whitewater. This meant the next day’s float would be only about a mile and a half instead of 12 or so miles.

We hauled the loaded, colorful crafts down the bank, and introduced them to the water’s surface, where they rocked and jiggled about with an apparent eagerness to sail. Clambering, we settled ourselves in, took up paddles and oars, and were drawn out onto the smooth, wide river. Here the river is more swift than lazy, but with no boulders or rapids. Its colors are rose, mauve, green, and pale gold. In a few breaths, silence and space becomes our world. The river flows through low dry mesa and canyon country. In canyon walls, rock layers tell of geologic time. Silence, space, and time expand, and I always notice this magic of a river trip: it becomes your life and it happens not long after you start. Treated to all this, I gazed upon the flora along the river’s banks, each type of plant growing with others of its kind in groves. Groves of green and gold reeds in start at the water’s edge, then a band of tall grasses in tan and gold, with sunlit, translucent plumes, beyond them dense willows in shades of russet, rose, and silver, and finally beyond these, golden and green cottonwoods rattling in the breezes, against the bluest of skies.

We floated along. The canyon narrows, evening approaches and we look for a camp. We find a nice spot at Dominguez Creek, set up our tents and enjoy our meals and some drinks as evening unfolds and stars appear. Ah! The luxuries we can take on a river trip! Chairs and tables, spaghetti and wine for dinner.

In the morning it is apparent the weather is not perfect. But it’s nice enough for a hike and we view many petroglyphs, cliffs, and an intriguing mix of volcanic and sedimentary geology, festooned with autumn flora. On the river again we float against the wind, blowing grit and poor visibility, but our take out is only a mile and half away. Our original plan would have had us fighting the wind for 12 miles to get off the river near dark. I’m glad Zeke had the prior experience and suggested the earlier take out. Good call, Zeke! Thank you, Stuart, for another wonderful RMS river trip!♦

RMS trip members: Stuart Schneider, Keith Miller, John Putnam, Zeke Lauck (pictured below), Rob White, and Susan Roebuck (trip photographer).





Aerial photo: SouthWings and Jack Henderson

RMS hosts Nolichucky River Gorge trip with Wild and Scenic River advocates, river managers

by Bekah Price

The Nolichucky River Gorge may be one step closer to earning Wild and Scenic River (WSR) designation following an August river trip with RMS members and Nolichucky WSR advocates. Attendees learned more about what a Wild & Scenic Nolichucky Gorge would look like and how it could benefit local communities and affect management decisions. They also discussed updates on the legislative status and where to go from here.

Jack Henderson, former River Management Society (RMS) National River Project coordinator, organized the trip to bring together Nolichucky WSR advocates and river managers for an update on the history and status of WSR designation of the Nolichucky River Gorge. This is the 7.2-mile section from Poplar, North Carolina, to USA Raft Adventure Resort in Erwin, Tennessee, and does not include other sections of the river.

Attendees included representatives from RMS, Pisgah National Forest, Cherokee National Forest, American Rivers, MountainTrue, French Broad Riverkeeper, American Whitewater, Wild South, Blue Ridge Resource Conservation & Development,

Nantahala Outdoor Center, and USA Raft Adventure Resort.

WSR designation was first recommended by the National Park Service in 1980, and again by the United States Forest Service (USFS) in 1994. USFS manages this section and would be responsible for its comprehensive river management plan if Congress approves designation. These recommendations have also been supported by more than 23,000 individual endorsements and more than 70 business endorsements.

This free-flowing section of the Nolichucky is rare amongst a region of heavily-impounded rivers. Its designation would protect a 0.5-mile wide corridor, prohibit dams, and forever protect its scenic and recreational values, ensuring that future generations are able to enjoy the experiences and economic benefits that the Nolichucky River Gorge provides.

RMS is uniquely positioned to provide WSR managers with information about the Wild and Scenic Rivers Act, including training opportunities. RMS staff have years of high-quality work experience with each of the four federal WSR-administering agencies and the Interagency WSRs Coordinating Council. Through its recently established River Training Center (RTC),

RMS offers both online and in-person training developed and presented by subject matter experts with decades of experience in WSR study and management. Learn more about these RMS resources on the RMS [WSR web page](#).

RMS members benefit from inclusion in a community of professionals who study, manage and protect rivers. Its diverse membership includes federal, state and local agency staff, educators, scientists, researchers, outfitters, consultants, advocates, non-profit organizations and individuals. RMS advances the profession of river management by providing a unique variety of forums for sharing information about the appropriate use and management of river resources, including virtual and in-person trainings, workshops, conferences, journal articles, listserves, etc. Enjoy these benefits and advance your professional career by [becoming a member today!](#)

Learn more about WSR designation by visiting the National Park Service [Wild and Scenic Rivers Program](#) website.

Learn more about Nolichucky WSR designation from local advocates at www.noliwildandscenic.org ♦



Photos: Jack Henderson

From the National Park Service:

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection.



River managers from the Pisgah and Unaka Ranger Districts discuss the history and status of Wild and Scenic River designation for the Nolichucky River Gorge with WSR advocates.

An Outfitter Letter to Clients Describes the Small Business Challenge Felt Across the Nation

It's fair to say that our 2020 season here at OARS, our 51st in the business of outfitting wilderness river and hiking adventures, has been like none before it. These are hard times for everybody, and in our case, we weren't able to put our first trips out until July due to restrictions and limitations related to the COVID-19 pandemic. As it stands now, it looks like we'll end our year with revenue down about 75% from 2019 levels, which represents a significant hardship for us and our staff ... we're doing all we can to stay positive, finish the year strong, and hold onto our amazing employees. We are so very grateful for all who chose to stand with us during these troubled times.

It's been clear throughout our half-century on the job that OARS will always be a work-in-progress. This year has been no different, albeit in ways we were not anticipating. We've run trips during this pandemic because our survival as a business depends on it, and not everyone will agree that non-essential, but physically-distanced, vacations represent a reasonable risk in this brave new world. But we aren't anxious to close our doors, and it seems to us that the jobs we create and the life-changing experiences we provide shouldn't be given up without a fight.

There's no doubt that smaller group sizes and lightly-loaded vehicles are great for almost everybody, and that's where our improvements will lead us after a pandemic. No one knows what 2021 holds but for now, we'll double down on keeping our group sizes small and facilitating all the connections to nature and each other that we can muster, with a little extra distance thrown in for good measure.

With all our love and appreciation,
The Wendt Brothers, Tyler and Clavey

Note: RMS thanks our colleagues and members at OARS for permission to share the introduction to the OARS 2021 Catalog.

More information about OARS can be found here:
<https://www.oars.com/blog/oars-response-to-covid-19/>

OARS shares that they have 'doubled down' on protocols in regards to transportation, equipment, hand washing and food service. They have upped their pre-screening procedure, instituted a **Health & Hygiene Pledge**, conduct daily temperature and symptom checks and require face coverings when it is not possible to socially distance. Their practices have yielded positive feedback, such as:

You all handled COVID really well.

The guides were very professional in terms of wearing masks and making sure we all stayed in our travel units: it all flowed easily. It didn't detract from our experience at all. The best part of rafting the river is meeting the people and making connections, and that says a lot because the adventure and beauty of the area is pretty phenomenal as well. ~ Alexis McQuillan

A recently updated OARS blog post confirms kudos for their best COVID-19 practices:

"OARS Tuolumne trip was fantastic!"

The attention to COVID-19 precautions were the very best, even on a river trip...and, we couldn't have asked for a better guide group. Also the food was awesome. Do this trip and get outdoors. Don't let the pandemic hold you back because they made it very safe amid the restrictions and new norm. ~ Sightseer655303

"A Truly Great Adventure" on Oregon's Rogue River

The OARS staff were extremely knowledgeable which made my first time on whitewater a truly great adventure. I always felt safe in their hands. The food was so much more than expected — I actually gained a couple of pounds, LOL! And, everyone respected each other's space due to COVID. The whole trip was terrific. ~ Judy Karr♦



Adapting to change, and enjoying the great outdoors.



Hand washing. Temperature checks. Great food.



The Mapmakers

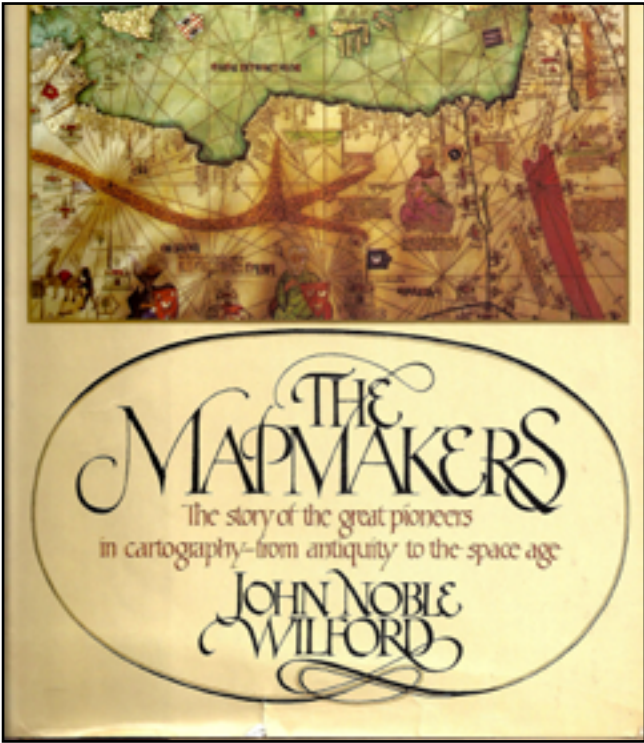
by John Noble Wilford
ISBN: 0394461940

Review by Herm Hoops

The Mapmakers is about as complete and readable a history of cartography and surveying that you will find. To quote a dear friend of mine: “It was published in 1981 when I was in graduate school studying mapping at the University of Wisconsin-Madison. When it came out, there was a review of the book that said something to the effect that this was the most complete treatment of the history of mapmaking and there was not really a need and nothing more could be said on the subject. This review was cut out, highlighted and pasted on the bulletin board at the front door of the office of Dr. David Woodward, the UW-Madison Cartography professor, who was one of two primary authors and the project leader for the definitive six-volume **History of Cartography**.* The first volume was just being completed after about five years of work with contributions from ten others. Dr. Woodward was able to see the humor in someone saying there was really no need for anyone to do what he had been dedicating his life to doing. Dr. Woodward died in 2004 before the series of books was completed.” So, if you are a cartographer or surveyor, that is a book for you!

The Mapmakers begins at the earliest known time and progresses through the mapping of Earth from space and mapping of far away celestial objects. Of particular interest is the chapter on mapping the West. The coverage, as one might expect, is mostly general background, but specific when it covers important points. The chapter, starting with the Lewis and Clark Expedition, expands to Charles Fremont and the other Western Surveys. It was a bit disappointing to an inflatable river person, to note that Fremont’s use of inflatables on the Platt River and in the Great Salt Lake were not mentioned. Coverage also includes Gouverneur Warren’s surveys and his knowledge of the importance of land forms put into action when he recognized the importance of the Round Tops at the Battle of Gettysburg. But one of Warren’s most amazing contributions to cartography occurred after the Civil War, when he went back to Gettysburg and mapped every type of fence, structure, orchard, crop, trail, and minutest detail of the Battlefield. In recent years Warren’s work has become critically important as the National Park Service has begun returning the Battlefield to its pre-war condition.

The book also overlooks Jedediah Hotchkiss, a topographical engineer on Confederate General Thomas “Stonewall” Jackson’s staff. The ignorance of the land during battles in 1862 was bitterly described by Gen. Richard Taylor. “The Confederate



commanders,” he wrote, “knew no more about the topography of the country than they did about Central Africa. Here was a limited district, the whole of it within a day’s march of the city of Richmond, capital of Virginia and the Confederacy, almost the first spot on the continent occupied by the British race, the Chickahominy itself classic by legends of Captain John Smith and Pocahontas; and yet we were profoundly ignorant of the country, were without maps, sketches, or proper guides, and nearly as helpless as if we had been suddenly transferred to the banks of the Lualaba [Congo River].” As quickly as possible, survey parties were formed and sent into Virginia counties in which fighting was likely to occur. One of the most famous mapmakers of the Civil War was Major Jedediah Hotchkiss who was never formally trained as a cartographer.

On Sherman’s March to the Sea he knew that maps were critically important and brought along a full complement of cartographers and even a printing press to make many copies of the maps. Civil War maps comprised a gigantic physical poem of the United States, and provided some of the best maps available well into the 20th century. They awakened a sense of a common country in the single, surviving Union.

I was most interested in the Explorations of John W. Powell. I was surprised to find a good explanation for Powell combining his two trips down the Green and Colorado Rivers: “Powell recognized the shortcomings of the first trip.” The shortcomings included broken or lost equipment, difficult conditions, and that the records of observation were lost with Oramel Howland when he and two others left the Expedition at Separation Rapid. The second expedition was planned as a wholly scientific survey. Almon Thompson of the second expedition was the lead cartographer, but for various reasons the survey was discontinued before going completely through the Grand Canyon. Thompson used information from the first and second expeditions to complete the map of the area. With the maps combined, it is not a big leap to understand why Powell referred to both expeditions in his report (book). And Powell had a determined mission to explain the importance of geology, topography, arid lands and such to a Congress and nation exuberant with moisture following the plow!

This book is very readable, and full of history that goes beyond the task of mapmaking. I would highly recommend reading it - indeed, because every river guide book today leans heavily on those who made the first maps.◆

**The History of Cartography is actually a six-volume series (some of the volumes are more than one book) and they have only completed volumes 1,2,3 and 6.*

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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

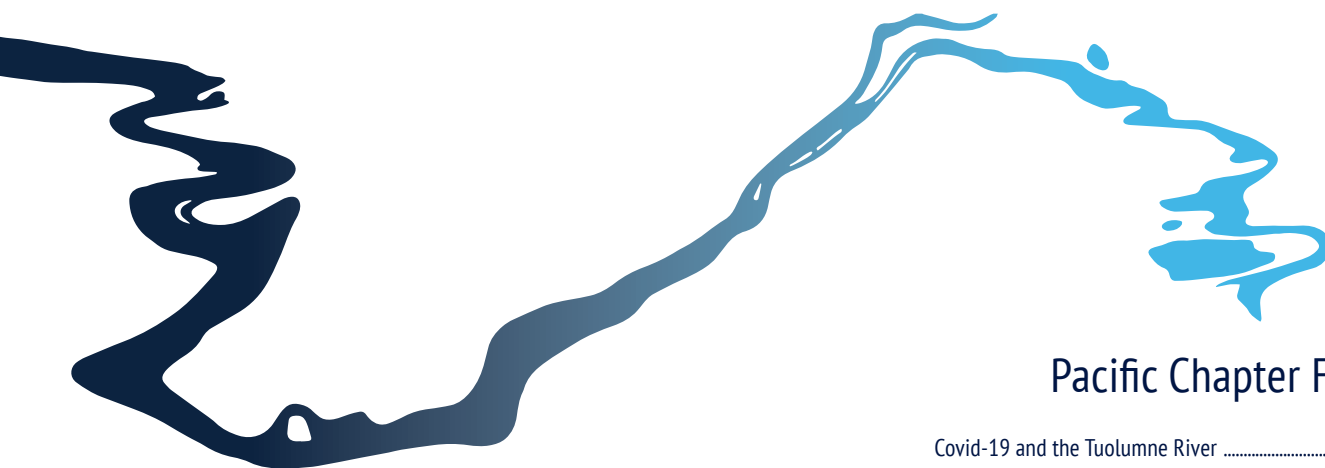
Who referred you to RMS? _____

*Make checks payable to “RMS”
RMS also accepts VISA or Mastercard:*

Card #: _____

Exp date: _____ Amount: _____

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