Tributary Tribune

Service Year 20
District C, 2014
Volume 20 Issue 2

Stories and art by members of the Watershed Stewards Project

The Watershed Stewards Project's (WSP) mission is to conserve, restore, and enhance anadromous watersheds for future generations by linking education with high quality scientific practices.

A program of the California Conservation Corps, WSP is one of the most productive programs for future employment in natural resources. WSP is administered by CaliforniaVolunteers and sponsored by the Corporation for National and Community Service.

The Tributary Tribune showcases the adventures, insights, and art of members of the Watershed Stewards Project. For twenty years WSP has been serving communities throughout California's coastal watersheds. This issue features stories and art by members from Region II, District C, which extends from Sacramento to Palo Alto, CA.

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Credits

Editor/Layout Designer.....Brittany Koenker, Region II Team Leader

Front Cover Image: Volunteers pass materials to block off footpaths to Lagunitas Creek at MMWD's ISP, Lagunitas-Forest Knolls, CA.
Back Cover Image: WSP members remove invasive ivy at Acterra's ISP, Palo Alto, CA.

Upcoming WSP Volunteer Events

REGION I

April 12
9a.m.-1p.m.
Janes Creek Invasive Reed Canary Grass Smash
Arcata, CA

April 19
9a.m.-1p.m.
Janes Creek Riparian Restoration Work Day
Arcata, CA

April 26
9a.m.-12:30p.m.
Yreka Creek Earth Day Extravaganza
Yreka, CA

May 10
9a.m.-3p.m.
Klamath River Cleanup
Klamath, CA

May 24
9a.m.-2p.m.
2nd Annual Big Foot Spring Clean
Willow Creek, CA

REGION II

April 19
9a.m.-1p.m.
Topanga Creek Earth Day Cleanup
Malibu, CA

May 31
9a.m.-1p.m.
Mulch Madness at Walter's Creek!
San Luis Obispo, CA



For more information on upcoming volunteer events, visit our Facebook page:
www.facebook.com/AmericorpsWatershedStewardsProject

WSP Program Updates

The Watershed Stewards Project is now in its 20th year and extends from Yreka to Agoura Hills, CA!

Funding:

- After 20 years, WSP will no longer receive funding from AmeriCorps.
- The CCC will continue to support the WSP during Service Year 21 (2014-15).
- WSP staff are actively seeking additional funding sources.

Year 21 Updates:

- There will be 40 member positions and 4 team leader positions. Each member will serve an 11-month term and team leaders will serve a 12-month term.
- WSP is pleased to announce that the education and outreach elements of the program will be reinstated. The education curriculum will begin to incorporate water conservation techniques and principles.

Year 21 Program Name Changes (effective October 6, 2014):

- The WSP will be changing names from the Watershed Stewards Project to the Watershed Stewards **Program**.
- The member-organized volunteer events referred to as Individual Service Projects (ISPs) will be referred to as Community Restoration Projects (CRPs).
- The WSP education curriculum, formerly known as *Real Science*, will be called *Wonders of Watersheds (WOW!).*

WSP Year 20 members at Orientation in October 2013

Celebrating 20 Years of WSP!

Year 1: WSP members placed with Six Rivers National Forest.

Year 11: WSP members at their October orientation.

Year 18: Project Director Carrie Lewis (second from right) and Forest Service Fisheries Biologist and WSP Mentor Andrea Collins (center) in Washington, D.C. accepting the US Forest Service's national "Rise to the Future" award on behalf of the Watershed Stewards Project.

Year 12: WSP member, Jeff Blumenthal, gives a fish dissection demonstration for students.

Year 14: WSP members, Erica Spohn, John Deibner-Hanson, and Sonja Kulstad-Hurst, receive wilderness rescue training at Orientation.

Assorted Collages, Pictures, & Haikus

By Rosa Albanese

placed at Marin Municipal Water District

This was the first time in five years that Chinook salmon were seen spawning in Lagunitas creek. These fish probably strayed during their migration back to their natal streams somewhere in the Central Valley. In any case, it was an exciting event to witness and a great way to start the spawning season with the return of the King Salmon.

Tim Dobbs from CDFW Hopland joined us for a spawner survey in late December. Here he is showing off the huge Chinook carcass we found (86cm).

Maybe you spent this past Valentine's Day with your sweetheart, maybe you didn't, maybe you don't even believe in it. Whatever your feelings are about that day in early February, to these wild steelhead, it meant spawning! Male and Female Steelhead spawning in San Geronimo Creek.

-Insert your favorite salmon valentine line here-

Ode to Otoliths

Little secret bones
Hide nestled in the brain goo
Important yet gross

Age, growth rates, and trends
Natures 'black box' keeps record
Otoliths reveal all!

These tiny crystal ear bones made up of proteins and calcium carbonate grow much like the shells of snails and other mollusks and form rings like that of a tree trunk. Fisheries biologists discovered that by looking at the pattern of dark and light bands laid down, a fish's life history can be measured. These very small bones are located in the brain cavity encased in tissue and it's up to the surveyor to extract them from carcasses recovered during spawner surveys. This is not only very difficult but very gross. It involves handling decaying flesh with bare hands and sawing open smelly fish heads. The great reward comes in the form of just getting them out at all and also knowing that you are contributing to unlocking the secrets of a species sometimes as mysterious as the universe itself.

Survey for redds
Gravel turned to mound and pit
Look and look again

Look closely and you will see two coho salmon on a single redd. This male and female were two of the few fish observed spawning early in the season in Lagunitas Creek. The low water year delayed many fish from entering the creek but after a huge rain storm in early February the numbers of redds observed shot way up.

"Weirs to Willows": Spotlight on San Francisquito Creek

By Erin Banks-Rusby

placed at Acterra: Action for a Healthy Planet

As a WSP member placed at Acterra, an environmental non-profit based in Palo Alto, there is ample opportunity to see how different organizations collaborate to share restoration knowledge and promote continuing education and professional development. After removing a weir that hampered Steelhead Trout migration in Palo Alto's San Francisquito Creek, Acterra partnered with the State Regional Water Quality Control Board of Oakland (another WSP site) to host a bioengineering workshop at the weir removal site. A group of about twenty conservation professionals from around the bay area attended the training, learning how to install a variety of structures using willow stakes and cuttings to stabilize the bank.

These structures provide natural erosion control and improve the ecology of the San Francisquito watershed. As the willow starts to put down roots and sprout new shoots, it stabilizes the bank and generates a supply of native vegetation that insects can eat, supporting the greater food web, including juvenile Steelhead and birds. WSP members will continue to install additional willow stakes and stabilization structures in the coming year, as the water level in the creek allows.

LEFT: Submerged by a freshly flowing creek, many of the willow stakes are starting to sprout. **BELOW:** Placed a little up the bank from the silty creek bottom, a willow stake that was used to secure bundles of willow twigs (called fascines) is beginning to sprout.

Fun Fact: *Willows produce a hormone called Salycylic acid that promotes growth in willow cuttings. The acid has been produced synthetically and modified for use in aspirin and anti-acne medication.*

RIGHT: The twigs in this partially buried willow fascine are starting their upward growth. Sprouting fascines provide a food source for local insects while dormant fascines act as erosion control, slowing water flow and allowing sediment to accumulate.

ABOVE: A sprouting willow stake has a new neighbor: an abandoned shopping cart. San Francisquito Creek passes through a large urban area where restoration challenges include ample foot traffic and pollution, such as street run-off and garbage.

BELOW: Willow stakes line the bank where the weir was removed.

Sacramento Charter High School Rain Garden

By Karen Jackson

placed at State Water Resources Control Board

What better way to celebrate the recent rains than planting a rain garden? On March 1st more than 50 volunteers helped to install the first ever rain garden on the Sacramento Charter High School grounds. What exactly is a rain garden? Rain gardens are depressional areas that contain drought-tolerant vegetation also able to withstand periods of saturated soils. These gardens require less water to maintain. Runoff from impervious surfaces such as rooftops, streets, and sidewalks often contain fertilizers, pesticides, and other pollutants. Rain gardens intercept this stormwater runoff and microorganisms in the soil breakdown pollutants before the water reaches sensitive areas such as streams and rivers. Rain gardens ultimately improve the overall health of watersheds. They not only conserve water but also are aesthetically pleasing.

Thank you to Alexander Tasoff for a great landscape design!

Volunteers plant drought-tolerant California native plants in the newly constructed rain garden.

Volunteers build a new compost bin adjacent to the garden at Sacramento Charter High School.

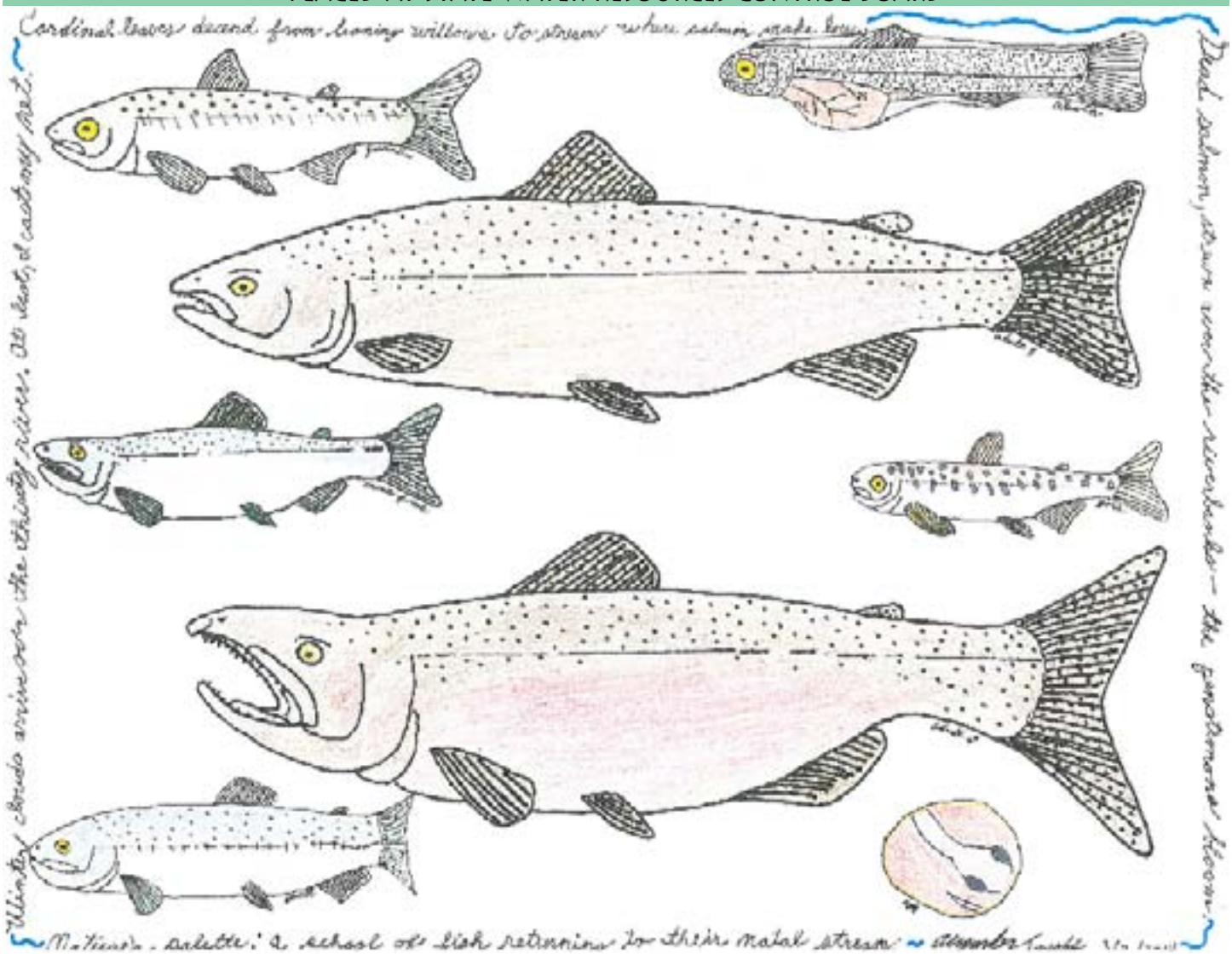
Edible Sac High

The Watershed Stewards Project partnered with Edible Sac High to make the Sacramento Charter High School Rain Garden possible. Edible Sac High works with students to integrate a food-based curriculum into their everyday lives. The program provides food literacy and encourages students to take ownership of their own health. Specifically, the program provides three activities for students: a school garden, a kitchen classroom, and a student-run cafeteria. In less than two years Erika Dimmler, project manager of Edible Sac High, has transformed a once barren area of land on the high school's property into a 1/3 acre garden. This has aided the after-school cooking program and developed a campus compost program. Additionally, five trees bearing edible fruit and a bee hive have also been installed. The edible garden has helped to improve school lunches by providing students with a healthy snack bar and healthy vending machines. The Edible Sac High program has also allowed students to interact with local businesses. The structure of this program is being shared with schools throughout both California and the nation. For more information please visit ediblesachigh.org.

Salmon Art

By Alexander Tasoff

placed at State Water Resources Control Board



Surveying in the Rain

By Erin Tracy

placed at Marin Municipal Water District

My year with the Marin Municipal Water District began with spawner surveys in the beautiful, redwood-covered Lagunitas Creek. Before starting this job, I had very little experience working with fish, and the prospect of putting on waders everyday and hiking in a creek to observe spawning salmon, while exciting, was also a little bit terrifying. As my site partner and mentor can tell you, it took some time to get my "creek legs" and not trip over every boulder and downed tree I encountered, flooding my waders in the process. Fortunately, the opportunity to observe salmon spawning up close far outweighed a few bumps, bruises, and wet days. Watching wild salmon successfully complete the journey to their natal stream, despite every obstacle both the natural and the man-made environment has thrown at them is really an amazing sight.

As I became more practiced with creek work, it was easier to pick up on all the important details involved in surveying. Above every riffle, I would keep a sharp eye out for a redd. With experience, I was able to tell what species made the redd by the subtle differences in shape and size. It also became easier and easier to identify species of fish from the few seconds of sighting before they swam upstream. All of these skills were put to the test on a particularly memorable survey at the end of January.

A big rainstorm finally broke the unusually dry winter, and heavy drizzle greeted us for our 9:00 AM survey. I wasn't looking forward to doing the survey in the rain, but with several wet surveys under my belt from my early misadventures in learning to navigate the creek, I felt confident I could handle the job no matter how wet it got. However, this confidence was sorely tested after seven hours of steady rain in which the GPS became waterlogged, the sharpies used to write the redd flags stopped working, and even the waterproof paper started sticking together, all while the fish kept on spawning.

Up until this point, our surveys were only averaging about 10-15 redds a day, but this day couldn't have been more different. I couldn't believe it was the same creek I had been surveying for the past few months! There were fish everywhere - coho and steelhead interacting with each other, males chasing jacks around, females digging away, and several carcasses to be dissected. I never thought I could be so interested in fish that I wouldn't care about being soaking wet for hours while having to stop every two feet to document a redd or handle yet another rotting carcass. Amazingly, we ended the day documenting over 100 redds. After a long dry winter for this endangered species, it was incredible to see the salmon flourishing in the rain.

Overall, my time spent spawner surveying was both highly enjoyable and very enriching, and I will never forget the experience.

The Coho Sagas: Part 1

By Brentley McNeill

placed at Point Reyes National Seashore

We have been waiting offshore for almost two months and haven't seen a single drop of rain. Our window of opportunity is closing fast. Everyone is on edge, and a sense of panic is beginning to spread through the group like an infectious disease. If this drought lasts much longer, a decision will have to be made: remain here where death is imminent or test unfamiliar waters so our kind can live on. For me, the choice is simple.

Cohort two had it just as bad last year; the rains didn't come until late winter, and many fish never made it home. They also had their fair share of problems with a local colony of ruthless sea lions. Sure, you humans may find them "adorable", but those vile creatures have made our lives miserable. They are cold, calculating hunters that have a nasty habit of toying with their game. I'd rather take my chances with the sharks.

The longer we wait, the more energy we exhaust just trying to survive another day. I realize my internal clock is nearing hour zero, so I will not swim idly by waiting for a species as old as ours to be merely forgotten in the annals of time. My companion and I have chosen to make a run of faith and meet our fates with unwavering resolve. This is the most important mission we have ever been tasked with, and I can't, nay, I refuse to fail.

And so our journey begins. As sad as I am that we will not be returning to our natal stream, I have no doubt we will find a new home that will provide our young with the resources they need to survive and flourish. However, my optimism has its limits, because I know our greatest foe lurks upstream just beyond the mouth of this river. That foe is OTTER – the ultimate killing machine.

To be continued…

Pesky Invasives!

By Jake Murphrey
placed at Acterra: Action for a Healthy Planet

As part of the Acterra Stewardship here in Palo Alto, we spend a lot of time restoring the riparian areas surrounding local creeks. Most of our sites are located in dense residential areas where invasive species have escaped the neighborhood's landscaped lawns and started wreaking havoc on riparian ecosystems. Here are a few examples of the many invasive species we encounter in our daily war of the weeds:

Periwinkle (Vinca major):

This dark green perennial vine was introduced from Europe as an ornamental groundcover. However, its ability to spread vegitatively and the lack of natural predators has allowed this plant to invade our creek banks, spread like wildfire, and choke out native groundcover species.

Algerian Ivy (Hedera canariensis)/ English Ivy (Hedera helix):

Have you ever seen a magician pull a cloth out of his pocket and it just keeps coming and coming? Then you know what it's like pulling these invasive ivies.

Algerian and English Ivy are closely related woody evergreen ivies that are native to England and Northern Europe. It was introduced as a lawn ornament and continues to be heavily used in gardens today. Once established, this plant can easily grow very thick and cover large areas by spreading vegetatively from rooting leaf nodes.

English and Algerian Ivy can be planted for erosion control due to its rooting and spreading tendencies. However, the ivy easily takes over riparian ecosystems. It can spread very quickly and out compete native plants to create a monoculture habitat. As you can see in the photo, the ivy has no problem taking over huge trees. The dense ground cover they create also provides the perfect habitat for rats and other pest species.

Cape Ivy (Delairea odorata):

Cape Ivy is an invasive ivy native to moist mountain forests of South Africa. It has shiny green leaves and very delicate stems that are easily broken off. The underground root systems have a beautiful purple color that almost looks like a creature from a sci-fi film. However, this plant can easily take over entire areas of vegetation due to its ability to root from even a single stolon. Even drying the vine out in direct sunlight for weeks at a time doesn't stop this pervasive plants quest for total riparian domination.

Poison Hemlock (Conium maculatum):

This pesky invasive plant was introduced from its native territory in Europe, North Africa, and Asia. Since it spreads easily by seed and can grow very large, it has no problem forcing native species out of its way. Poison Hemlock is part of the carrot family but be warned: eating this plant would be a deadly mistake. Just ask the Greek philosopher Socrates of its neurotoxic properties.

Himalayan Blackberry (Rubus discolor):

Careful this one bites! The Himalayan Blackberry native to Eastern Europe can grow into large dense patches that dominate the habitat. It has delicious plump berries that are easily spread by various animals and has the ability to root from cane tips, allowing it to outcompete almost all native species. However, removing these monsters is no easy task! The stems are covered in large sharp thorns that can really cause some pain… Kevlar gloves are highly suggested.

Here you can see the Himalayan Blackberry next to its native cousin the California Blackberry (Rubus ursinus). Although these two plants are similar they have distinguishing differences that separate the native from the invasive. Himalayan blackberry has a much darker leaf with a white underside, while the native California blackberry has a lighter leaf with a darker green underside. Also, the berries and thorns of the invasive Himalayan Blackberry are much larger.

DIDSON

By Madeline Cooper

placed at Point Reyes National Seashore

DIDSON stands for Dual Frequency Identification Sonar. Basically it is an underwater camera that uses sound waves instead of light waves to create images. Think of a bat using echolocation and the sound waves bouncing back, the video footage we see from DIDSON are sound waves hitting fish and bouncing back. Just like light, sound waves create shadows, so usually we see the image of the fish, and its shadow.

> "Think of a bat using echolocation and the sound waves bouncing back, the video footage from DIDSON are sound waves hitting fish and boucing back."

At Point Reyes National Seashore we have one DIDSON camera in Lagunitas Creek, and it is running 24/7. We installed it in October and it has been running ever since. The benefits of this are that we will see every salmonid (or anything else) that moves past the camera. The downside is that we have several months of footage to review…

Footage review takes a while to get used to doing. You have to stare at the computer screen waiting for a pixilated blob to move through the screen. If you see something, and you determine it is a fish longer than 30cm (as opposed to an otter, stick, or fisheries biologist) then you have to

give it a number, take three length measurements and, record the entry and exit times. This sounds straightforward but in reality is extremely time consuming. Often fish travel in groups and it can be hard to determine which fish is which. Frequently the same fish will swim upstream and downstream again and again. We have a tool to compare fish to determine if they are the same or not, but the reviewer still has to measure it each time.

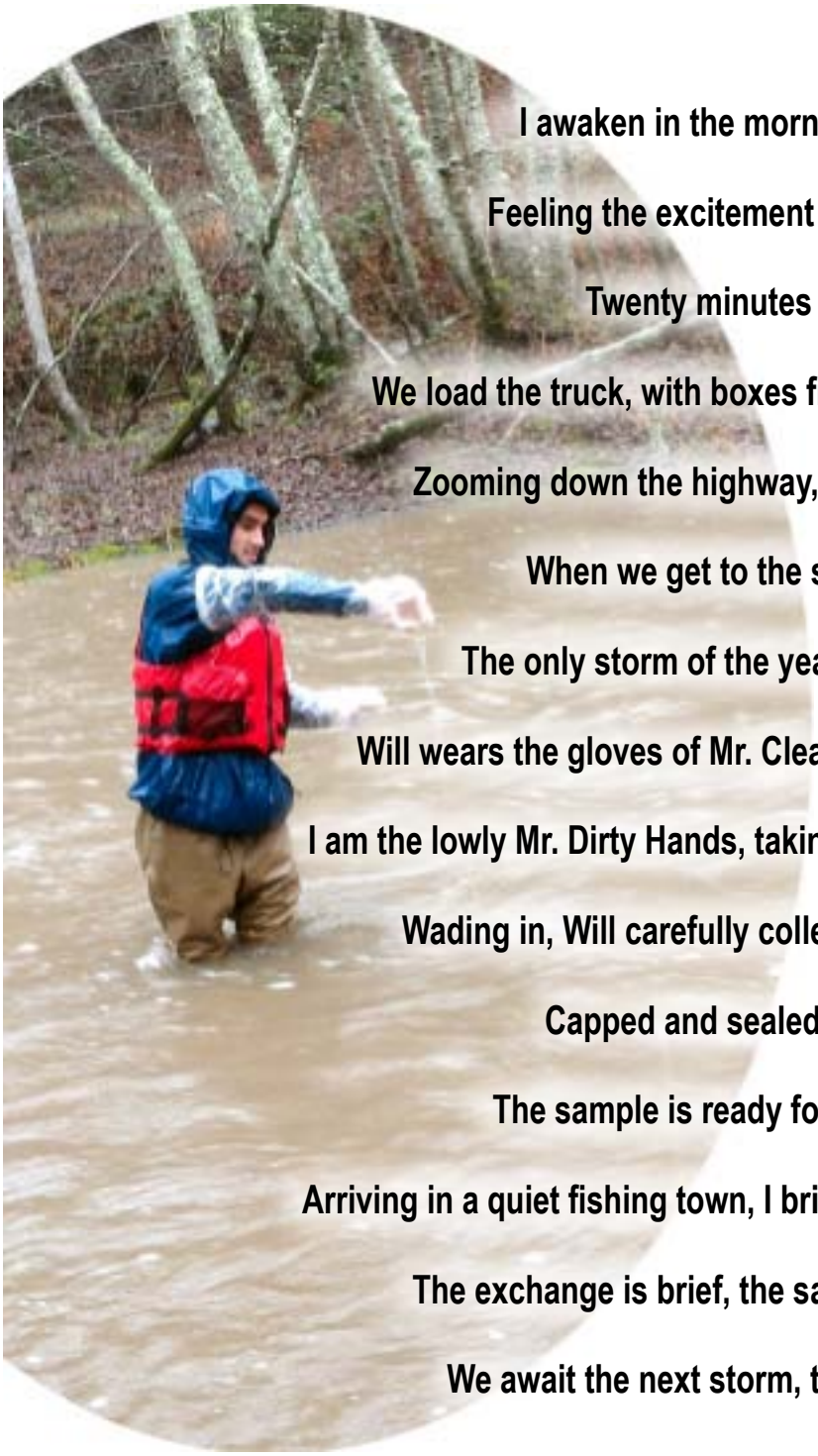
With all this monotony the smallest things can seem exciting. I showed everyone in my office the first footage I saw of a fish larger than 70cm. Brentley reviewed footage of an otter so clear we could see the webbing on its feet. For the non-reviewers out there, the videos we show rarely seem exciting though. I guess you have to spend weeks at your desk, waiting for the rain to think a sound shadow of an adipose fin makes for an exciting day.

The still frames are much harder to look at than the full footage, but see if you can figure out some of the animals and behaviors in the collage.

Sampling for Precious Metals

By Connor McIntee

placed at SF Bay Regional Water Quality Control Board



I awaken in the morning to a pitter patter of rain

Feeling the excitement mounting, I race to get ready

Twenty minutes later, I am at the office

We load the truck, with boxes filled with goodies, waiting to be used

Zooming down the highway, we review protocols, assign roles

When we get to the site, it is beginning to pour

The only storm of the year, but we are begging for more

Will wears the gloves of Mr. Clean Hands, isolated from contamination

I am the lowly Mr. Dirty Hands, taking care not to touch the precious samples

Wading in, Will carefully collects water from the gushing stream

Capped and sealed into its ultra-clean home

The sample is ready for shipment to the Laboratory

Arriving in a quiet fishing town, I bring the chest of mercury to the gatekeeper

The exchange is brief, the samples delivered, the deed is done

We await the next storm, to Sample again at Walker Creek

Photo of WSP Member Will Logsdon performing Mercury sampling downstream from an abandoned mine on Walker Creek in Marin County during a February storm event, placed at San Francisco Bay Regional Water Quality Control Board.

Alumni Spotlight

Lindsay Righter

Year 9 - CDFW (then DFG) Fortuna
Year 11 - Outreach Team Leader, Fortuna

Mentors: Year 9 – Chris Ramsey & Barry Collins; Year 11 – Erin Triolo (WSP Outreach Coordinator)

Q: What was your WSP member experience like?
Lindsay Righter (LR): Amazing! It's a rare opportunity to meet so many people with whom you share common values and goals, and even rarer to get to work alongside them doing something meaningful and interesting in the most beautiful places on earth. Don't get me wrong – it was hard at times, both mentally and physically. But it was one of the most fun, educational, and fulfilling experiences of my life. My closest friends are still people I served with or met through WSP.

Q: Was there one experience that was especially memorable? Why?
LR: There were so many memorable experiences that it's hard to pick just one. From 13-hour field days crawling through whitethorns and coyote brush, to watching a meteor shower while on spike at Benbow, to finding bear skulls, mountain lion tracks, and wild boar wallows, to bonding with field partners over countless steps through creeks, to teaching hundreds of kids to love science - it was all memorable.

Q: You have been involved with WSP in a variety of ways since serving as a member. What was that experience like and how did it differ from your time as a member?
LR: I've been incredibly fortunate to stay connected to WSP is a number of ways since my time as a member. I transitioned to a staff position after finishing my final term of service, where I stayed for three and a half years. Starting as WSP's Outreach Coordinator, I became the Project Manager and also served as Acting Project Director while Carrie was on maternity leave. I loved being involved in every aspect of WSP and working to constantly improve the program through supervising members, planning trainings/events, coordinating education and outreach programs, writing grants, and especially mentoring the Team Leaders. The experience allowed me to support members and mentors to do the important natural resource and education work that makes WSP what it is. WSP is a far more complex program than most realize. It's not just about the work – it's about dealing with many bureaucracies and personalities, while also helping people through what is often a very transitional time in their lives. Being on the staff side was challenging, stressful, and (at times) chaotic, but the most rewarding job I've ever had.

I now serve on the WSP Advisory Committee and CCC Community Advisory Board, where I am happy to continue staying in touch with the program and contributing the perspective of having been a member, mentor, staff, and now community member.

LEFT: Lindsay with a Chinook salmon carcass on a spawner survey on China Creek in Southern Humboldt, circa 2003.

"If I remember correctly, this beast measured 114 cm - almost 4 feet long!"
- Lindsay

Q: What are your title and responsibilities in your current job?

LR: I currently serve as Field Representative for Congressman Jared Huffman (and previously for Congressman Mike Thompson) for Humboldt, Del Norte, and Trinity counties. The job is different every day and very broad in scope. In general, we assist constituents who are having difficulties with federal issues, which can range from problems obtaining veterans benefits to obtaining funding or permits for a watershed restoration project, and communicate the Congressman's positions and actions. I help coordinate, prepare, and staff the Congressman at local events and meetings, and represent him in the community when he can't be here. We are his eyes and ears on the ground and keep him up to date on local issues.

Q: How did WSP help prepare you for the work you are currently doing?

LR: Having a natural resource background and hands-on watershed/fisheries experience has been helpful considering how important resource issues are in this area. The connections I made through the WSP community continue to be helpful as well. I'd say the experience of being a team leader helped the most in terms of honing communication, organization, writing, event coordination, and leadership skills. This job is all about the importance of working effectively with diverse partners toward a common goal, which is WSP to its core.

Q: What advice would you give current WSP members?

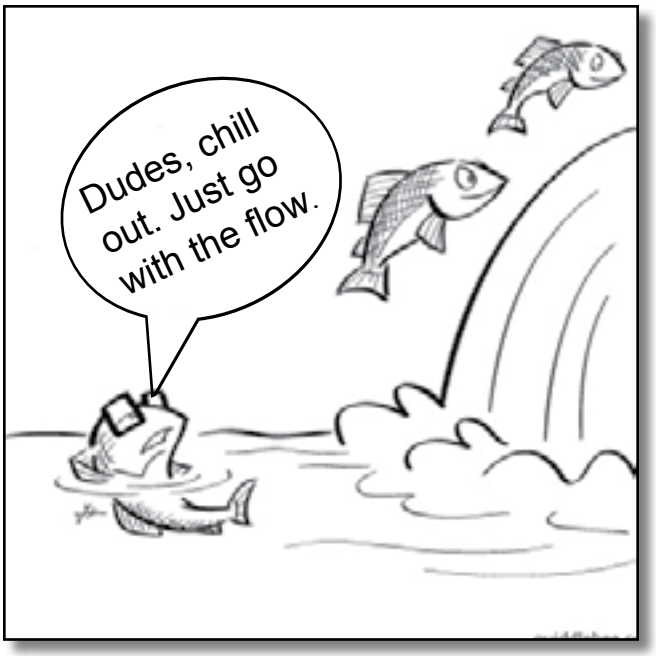
LR: Take advantage of every opportunity that comes your way and be proactive in seeking out those that interest you. You never know what will spark a passion and guide your career in a direction you couldn't have imagined. Remember that while every day may not be a picnic, this is a dream job (but really, it's not a job at all; it's volunteer service). Use this time to work hard to better your community, learn everything you can,

ABOVE: Lindsay with Congressman Jared Huffman.

LEFT: Lindsay habitat typing with field partner, Corby Hines, possibly on Sprowl Creek in Southern Humboldt.

BELOW: Lindsay at Year 11 graduation.

Fish Food



Winning Caption Submitted by William Clancy, placed at USFS S.O. Eureka.

Coho Salmon Maze

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