

Zoom chat recording for Cal-PBR Training, September 23, 2022, 9:00am–12:00pm

- 09:07:18 From Connor Murphy : Any needed gear before getting there for the restoration work?
- 09:07:57 From Garrett : Extra shovels, loppers, and hand saws would be great
- 09:08:09 From Jessica Dyke, The Sierra Fund : Please read the FAQ for more information on what gear to bring.
- 09:08:34 From Karen Converse - Lands Program, CDFW : will we need full on waders, or will knee-high rubber boots be adequate?
- 09:08:36 From RosieG(USFWS) :
https://www.calpbr.org/files/ugd/80da86_19c962196d69407c96869c24ea3a2e1b.pdf
- 09:09:30 From Garrett : Full waders would be great but knee height is a great alternative.
- 09:09:32 From Sabra Purdy, Anabran Solutions/Trout Unlimited : Water is deep, you'll want full waders
- 09:10:29 From Kevin Swift : If it's warm out, we tend to wet wade as much as possible, because waders turn into screen doors when you're hauling pokey brush all day
- 09:10:41 From Adam Cummings - USFS : And stretchy rubberized gardening gloves over leather gloves for most of the work. Water will make the leather slimy and hard to work with very quickly.
- 09:11:16 From Kevin Swift : nitrile gloves work great in the water, and Adam's right-leather turns to soup
- 09:16:47 From Carrie Monohan, The Sierra Fund : Hi folks, can you turn off your video, until Q&As, it might help with lag...and band width. Thank you
- 09:17:14 From Karen Pope, USFS PSW : Clure and Thorne paper can be found here:
<https://onlinelibrary.wiley.com/doi/epdf/10.1002/rra.2631>. It's a good one to read ahead of the field training.
- 09:21:35 From Karen Pope, USFS PSW : For more detail on design criteria see Ciotti et al. here:
<https://academic.oup.com/bioscience/article/71/8/831/6307424>
- 09:28:30 From Sabra Purdy, Anabran Solutions/Trout Unlimited : The anxiety of letting the system drive is second only to the anxiety of Zoom debacles
- 09:29:49 From Kevin Swift : Or the anxiety of Carrie using your analogy just before your presentation... 😊
- 09:30:35 From Farley Connelly : Hi Karen, can you send PDF versions of all papers you are linking for us folks who don't have institutional access (the first is behind a paywall).
- 09:32:46 From John Downs : 🖱️🖱️
- 09:33:15 From Karen Converse - Lands Program, CDFW : How long does a PDA last? How long do you need it to last?

09:35:42 From Jake Shannon : Hi Damion. Can you share any thoughts you may have on projects that blend PBR and form-based techniques? i.e. some heavy-handed off-channel habitat feature construction paired with BDAs, gravel augmentation, and "stage-0 lite"

09:36:57 From Karen Pope, USFS PSW : Jessica will forward the pdfs to everyone registered.

09:37:11 From Field : sounds like the tunnel project in the delta....lol

09:37:12 From Garrett- Symbiotic : There are so many factors involved that determine how long BDAs will last. It depends on storm events, the type of structure, are beavers helping? I would say one season to indefinitely

09:37:13 From Jessica Dyke, The Sierra Fund : Sure, I will do that after the Zoom meeting.

09:41:22 From Damion Ciotti : Good question. In systems such as below large dams that have limited sediment supply Generally we need more form construction because we don't have as much of the natural process (floodpulse and sediment supply) to work with. I am happy to discuss in more detail.

09:42:42 From Ben Cook, Trout Unlimited : Dang, Yellow Creek is looking good. Also, love the weird internet stock photos and the amazing analogies as per usual Kevin.

09:45:42 From Field : is the work site effected by the fire that went through there last year?

09:50:30 From Connor Murphy : Is it easier or harder to create a self sustaining system in a single stream system or an interconnected system?

09:52:28 From Kevin Swift : The real answer, frustratingly, is always, "it depends". Not dodging the question, there's just no way to answer it without waaaay more info on each system... Sorry!

09:52:52 From Connor Murphy : haha for sure!

09:53:16 From Karen Converse - Lands Program, CDFW : No need to apologize. I figured it was a pretty complex answer. Thanks!

09:53:59 From Damion Ciotti : Connor, It mostly depends on the source problems in the system and to what extent you can address source problems and restore the natural connectivity in the system. If you can't address many of the problems then it is very difficult to restore a sel-sustaining system

09:54:50 From Connor Murphy : Thank you!

09:54:58 From Karen Pope, USFS PSW : Will Garrett and Kevin touch on tool maintenance in the field? Important for efficiency. Maybe an evening workshop?

09:55:42 From Kevin Swift : Ha, sure thing. The first thing I do with volunteer tools is take them away, sharpen and oil them. Can't stand dull, rusty, crappy tools!

09:56:42 From Kevin Swift : Thanks Ben—I'm clearly not an academic or scientist, and have to hack together these weird, messy slideshows the night before because we're always out in the mud.

09:57:22 From Kevin Swift : The equipment yard sale is going to be hilarious.

10:00:22 From Kevin Swift : If you're dealing with nervous regulators, sometimes you can get away with weasel words like "meander maker" or "bank attached" instead of bank blaster.

10:01:19 From jake shannon : noted, Kevin... kidding

10:01:42 From aarongilliam : Do you ever integrate rock?

10:02:33 From Jeff Sanchez (CDFW) : Please use the most appropriate terminology for the proposed activity. It is difficult to evaluate a proposal if we cant understand what the actual proposal is.

10:02:35 From Damion Ciotti : If there is rock naturally occurring in the channel then yes

10:03:32 From Kevin Swift : Oh yeah—love rock. Beavers do it too, and it's great for adding immobile weight to the core of the dam. The Zeedyk stuff has tons of rock in it.
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj649Crsv6AhU3L0QIHSEEAxgQFnoECBAQAw&url=https%3A%2F%2Fs3-us-west-2.amazonaws.com%2Fetalweb.joewheaton.org%2FWorkshops%2FCheapCheerful%2F2018%2FNRCs%2FNRCs%2BGuidelines%2F643_Zeedyk%2Bspec%2Btemplate_10-17_EXAMPLE.pdf&usg=AOvVaw06xisk4fJLhG-AepZtctf

10:04:31 From Matthew Rose-Stark : Will we be covering rock based structures during the workshop?

10:05:22 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : There is limited rock at Yellow Creek. Also, sometimes issues with taking rock due to archaeological resources, so you have to be careful.

10:05:29 From Damion Ciotti : Yes we will have some examples but it will b ehand placed rock

10:05:47 From Matthew Rose-Stark : Great, thanks.

10:06:11 From Megan Rooney : Would you say long-term management varies greatly between each structure type? Obviously fire/weather/the system itself could deviate expectations of structure success within a given time period, but would you say ordinarily one type of structure often requires more adjustment?

10:06:28 From Field : are there local populations of beaver in the yellow creek area now?

10:07:08 From Damion Ciotti : I typically use imported rock to address or protect infrastructure or property and careful not to over stabilize a dynamic depositional zone where there is finer gravel and soil

10:07:39 From Kevin Swift : Field, we've seen fresh beaver chews show up in a few locations around the valley after the fire. No dams yet, and we don't know how many there are, but it's super exciting!

10:08:14 From Field : awesome, thanks. can't wait to see them thriving there

10:10:32 From Kevin Swift : Jeff, good point. I'm using "bank attached" now, which seems like an emerging industry standard, but we tend to call them bank blasters in the field.

10:18:50 From Stephanie Falzone, Sustainable Conservation : Since I didn't have it ready in time for the last PBR Network meeting, here's the link to the recording of the presentations that the PBR Network gave to the CDFW Cutting Green Tape Strike Team in August <https://youtu.be/ZEleBtEslds> See the description for the list of speakers and time stamps.

10:20:35 From Tom Dayton : Are these structures useful in ecosystems without beavers? Is it important to plant trees as a food source for the beavers to encourage them to re-occupy these areas?

10:22:22 From Damion Ciotti : Yes we have many projects without beaver that we apply these techniques. Definitely important to plant and increase riparian veg production

10:23:26 From Garrett- Symbiotic : Definitely useful in systems without beavers but if there's a chance to bring them back to the area that would be a primary goal. Planting willows is often part of our design.

10:28:45 From Jeff Sanchez (CDFW) : It would be great if someone could talk about the past restoration activities on yellow creek (plug & pond) and what happened to them.

10:30:14 From Kevin Swift : This slide right here is GOLD. screenshot!

10:30:47 From Kate Lundquist OAEC WATER Institute : Can you please mute Tom?

10:31:44 From Damion Ciotti : We've evaluated pond and plug projects not only Yellow Creek but also our own Pond and dPlug channel fill projects funded and implemented by USFWS I would be happy to discuss. Plus we can visit the Yellow Creek pond and plug in the field

10:33:46 From Karen Pope, USFS PSW : I'll add that we probably are underestimating the historical potential anyway so targeting it may be self-restraining.

10:34:17 From Kate Lundquist OAEC WATER Institute : Very well said Sabra! Fish move when there's flow. And, having impounded water to survive dry periods is key!

10:35:16 From Connor Murphy : Especially in systems that have one or two really strong rain events and the rest of the year is dry prepped dams are so important to hold that water

10:35:36 From Kate Lundquist OAEC WATER Institute : <https://lowtechpbr.restoration.usu.edu/manual/>

10:42:32 From Sycamore : Here's a link to the PDF from Cluer & Thorne: https://www.waterboards.ca.gov/northcoast/water_issues/programs/agricultural_lands/pdf/130520/Cluer_and_Thorne_2013_A_Stream_Evolution_Model_Integrating_Habitat_Ecosystem_Benefits.pdf

10:45:11 From Sycamore : Can we access this slideshow again later? I missed Kevin's golden screenshot opportunity.

10:45:46 From Carrie Monohan, The Sierra Fund : Yes, we will make all the slide available

10:45:50 From aarongilliam : Thank you Sabra! It would be interesting to learn more about what you mean by "harm." Thanks again

10:46:20 From Kate Lundquist OAEC WATER Institute : Awesome talk Sabra! Thanks for the props for Brock's work with PBR in uplands. Here's a link if folks want to learn more:
<https://oaec.org/forest-thinning-and-gully-repair/>

10:46:26 From Dave Wallace : Hi Sabra, Sarah Aguiar with the Western Shasta RCD. You mentioned your restoration work, mainly meadow restoration. Can you speak more to that? Thank you!

10:46:40 From Connor Murphy : How should we effectively handle management of different species of critical concern, and how can we foster some of those micro habitats that might hold really good diversity @Sabra. Thank you for your talk

10:46:45 From Kate Lundquist OAEC WATER Institute : Hannah Wilton was also involved in the OAEC work and she's on this call!

10:47:43 From Kate Lundquist OAEC WATER Institute : For species specific restoration, talk to Kevin and Karen about the Round Meadow restoration tailored to Cascades frog. Great results so far!!!

10:51:46 From Christy Mower : Adam - How are you predicting where those new channels will be created?

10:56:19 From Kate Lundquist OAEC WATER Institute : I love how Adam makes this all sound so easy and intuitive. I am so grateful to those who hold this skill set and are able to interpret for us!

10:57:05 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : Amen, Kate!

10:57:14 From Karen Pope, USFS PSW : Adam is also very accessible and helpful. He will also be leading a workshop on some of this stuff at SRF.

10:58:00 From Karen Converse - Lands Program, CDFW : Sorry - what is SRF?

10:58:18 From Kate Lundquist OAEC WATER Institute : Salmonid Restoration Federation's annual conference next April

10:58:39 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : They have a great annual conference with excellent workshops and speakers

10:58:41 From Karen Pope, USFS PSW : in Fortuna

10:58:50 From Kate Lundquist OAEC WATER Institute :
<https://www.calsalmon.org/conferences/40th-annual-salmonid-restoration-conference>

10:59:26 From Kate Lundquist OAEC WATER Institute : Best conference site ever...on the Eel River, one block from the Eel River Brewing Company 😊

11:01:11 From Karen Pope, USFS PSW : This site is Childs Meadow. On the way to Yellow Creek for some of us.

11:02:00 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : That is super cool!

11:02:29 From Karen Converse - Lands Program, CDFW : Ditto! Very cool!

11:02:50 From Kevin Swift : There's a switch that would fix the 15' of hilltop incision madness in Child's that you could sort out in an hour, working alone with a digging bar and a shovel. It's one of the most amazing pressure points I've ever seen.

11:02:58 From Christy Mower : Great stuff...thanks, Adam!

11:03:46 From Karen Pope, USFS PSW : Cal-PBR workshop???

11:03:50 From Field : I feel like a small class on how to use all these tools would be helpful

11:04:23 From Kate Lundquist OAEC WATER Institute : Go to the Salmonid Restoration Federation conference next April. Adam and Emily Fairfax will be doing a hands on workshop <https://www.calsalmon.org/conferences/40th-annual-salmonid-restoration-conference>

11:04:46 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : QGIS and QFIELD are amazing open source resources

11:06:01 From Adam Cummings - USFS : https://prd-tnm.s3.amazonaws.com/StagedProducts/Elevation/1m/Projects/CA_NoCAL_Wildfires_PlumasNF_B1_2018/TIFF/USGS_1m_x64y445_CA_NoCAL_Wildfires_PlumasNF_B1_2018.tif

11:06:14 From Karen Pope, USFS PSW : Similar to Kevin in the field, Adam is a master at finding switch points using visual tools in the office (he's good at it in the field as well). Practice!

11:06:15 From Adam Cummings - USFS : That link will start a 250mb file download.

11:06:37 From Kate Lundquist OAEC WATER Institute : <https://www.calsalmon.org/programs/events/future-now-how-use-practical-remote-sensing-tools-gain-new-perspectives-river>

11:09:56 From Field : permitting has always been the big question! the ground work is all the fun. getting permission to do it is key!

11:15:34 From Kate Lundquist OAEC WATER Institute : Thanks Sheli for being our permitting leader in this work! So important!!!

11:16:29 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : We love our regulators! Thanks Sheli for helping us navigate this. Go Team!

11:16:51 From Stephanie Falzone, Sustainable Conservation : What about getting a federal nexus through needing a Corps permit? I know Corps jurisdiction and what's in or out of that is a complicated subject.

11:18:12 From Carrie Monohan, The Sierra Fund : Good question. Most PBR projects I have been a part of fit within the Nationwide Permit 27

11:18:52 From Carrie Monohan, The Sierra Fund : As part of the Small Habitat Restoration program, USACE is consulted by the RWQCB which becomes the CEQA lead

11:23:08 From Patrick Johnson, NTCD : Is it possible to do PBR projects in ditches classified as historic under section 106?

11:23:12 From Stephanie Falzone, Sustainable Conservation : Thank you Sheli!

11:23:29 From jake shannon : well done, Sheli!

11:23:31 From Connor Murphy : Thank you for the overview Sheli! Very helpful info!!!

11:23:46 From Sabra Purdy, Anabran Solutions/Trout Unlimited : Thank you Sheli, these are crazy complicated for a lot of people and this is very helpful to understand.

11:26:28 From Stephanie Falzone, Sustainable Conservation : I have to plug our technical resources page and email newsletter. <https://suscon.org/technical-resources/> There will be webinars and resources about how to use the new statewide permits. And a whole website dedicated to sharing these resources as soon as I can get it ready to share publicly <https://suscon.org/restoration-updates/> Stay tuned!

We've got videos on our technical resources page about how to use HREA, and a FAQ document.

Email me at sfalzone@suscon.org any time with questions. I know we need to update our permitting table. I'm on it!

11:28:10 From Jeff Sanchez (CDFW) : Same as Sheli and Jake- please reach out to CDFW early and often

11:28:20 From Megan Rooney (CDFW) : Just wanted to add on somewhat to Jake's comment with a CDFW perspective - consultation with CDFW BEFORE submitting an application for 1652 or 1653 is highly recommended so that we can recommend appropriate species protection measures and monitoring/maintenance plans. 😊

11:30:06 From jake shannon : Hi everyone, please reach out with any restoration permitting questions and I'll do whatever I can to assist.

11:30:44 From jake shannon : Jake Shannon | Senior Environmental Scientist | Restoration Coordination Specialist

(707) 576-2673 | jacob.shannon@waterboards.ca.gov

11:32:36 From Sabra Purdy, Anabran Solutions/Trout Unlimited : Think how much more satisfying it is for our agency friends to be in on the ground floor, visiting the site, and contributing to the design and streamlining the process than just going through paperwork and shaking their heads at us for doing it all wrong without collaborating. Diverse teams are strong teams.

11:35:26 From Hattie Brown : I'm hoping someone could speak to use of PBR techniques in more constrained systems where roads, trails, homes, etc. both change sediment dynamics but also restrict where streams can be reconnected to floodplains.

11:35:41 From Sheli Wingo, USFWS Partners Program : Answering Stephanie Falzone asked Regarding a federal nexus with a Corps Permit... I asked the Corps about that this past spring, and the

Redding Office responded that a Corps permit alone does not provide a federal nexus, and so would not trigger NEPA, ESA, or NHPA permits if a federal nexus otherwise doesn't exist.

11:39:37 From Connor Murphy : How can we prove capacity for reintroduction of beavers in areas that they have been removed from for a long time?

11:40:51 From Stephanie Falzone, Sustainable Conservation : Thanks, Sheli. That's good to know as we prepare to do outreach about the new PBO. But also concerning because in the administrative process for the new PBO it says that if a project proponent has applied for CWA Section 404 or RHA Section 408 permit to the Corps, that the Corps will typically be the lead agency. It's on page 43 of the PDF https://suscon.org/wp-content/uploads/2022/09/USFWS-Statewide-Restoration-Final-PBO_2022.08.31.pdf

11:41:40 From Christy Mower : As part of the BDA construction, we are not building dens. Curious what the post-restoration monitoring is showing... are you noticing beavers will build dens on BDAs or are BDAs the "jump-starters" for them to move in the area and build new dams with dens?

11:42:25 From Sabra Purdy, Anabranch Solutions/Trout Unlimited : Here is the Utah State Beaver Restoration Assessment Tool

11:42:29 From Sabra Purdy, Anabranch Solutions/Trout Unlimited : <https://brat.riverscapes.xyz/>

11:42:33 From Damion Ciotti : Hattie that's a key question with most projects especially in more developed watersheds. The initial planning should focus on what constraints can be removed or land uses modified to allow for a more dynamic system. If we can't reconnect to the floodplain because of development then we may be able to evolve the incised channel to a more complex channel through a bit of widening and formation of and/or reconnection to inset floodplains. Recovering stage 3 and 4 channels to 7 and 8. Critical question early in the design

11:43:37 From Karen Converse - Lands Program, CDFW : Will this chat be saved and provided to participants?

11:43:53 From Jessica Dyke, The Sierra Fund : Yes, this chat will be saved and I'll email it out.

11:44:08 From Karen Converse - Lands Program, CDFW : thank you!

11:44:20 From Connor Murphy : I have been interested in one of those positions

11:44:50 From Hattie Brown : Thanks Damion, Looking forward to meeting you!

11:47:23 From Mary Olswang CDFW : Karen, I just copied and pasted the chat into a word doc.

11:48:26 From Karen Converse - Lands Program, CDFW : Oh thanks Mary.

11:51:18 From Karen Pope, USFS PSW : If anyone wants to borrow waders, please send me an email with your size and shoe size and I'll try to help you out.

11:51:37 From Karen Pope, USFS PSW : karen.pope@usda.gov

11:52:11 From Adam Cummings - USFS : I

11:52:19 From RosieG(USFWS) : https://www.avenzamaps.com/mobile-maps?campaignid=10221828697&adgroupid=102940455500&adid=453083166133&gclid=EAlaIqobChMlotbi4cqr-glVBz6tBh1qgQSpEAAYASAAEgKZ9fD_BwE

11:52:57 From Carrie Monohan, The Sierra Fund : Please get your liability waivers in to Jessica before you go

11:53:04 From Brook Edwards : Do we need a 4 wheel drive to get to camp site.

11:53:07 From Adam Cummings - USFS : It is very good to preload the geopdf before you head into the field but we've learned that you can AirDrop the file between iphones in the field if it comes to that.

11:53:31 From jake shannon : do we have an estimated end time on the last day?

11:53:55 From RosieG(USFWS) : agenda: https://www.calpbr.org/files/ugd/80da86_643a1e6dd05f4ec3a29cdf632b2baa75.pdf

11:53:57 From Jessica Dyke, The Sierra Fund : Jake, all three days are scheduled 8-5pm.

11:54:03 From Karen Pope, USFS PSW : Brook, no need for 4x4 but several miles of gravel.

11:54:41 From jake shannon : thanks!

11:55:12 From Kate Lundquist OAEC WATER Institute : Remember to bring your own potable water!!!

11:55:53 From Dave Wallace : Hello, question from Jeremy Kelley from Western Shasta RCD. Are we mainly using hand tools or would be it useful to bring a pole saw or chainsaw?

11:57:08 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : Heads up everyone, It is active Rifle Deer Hunting season. There may be people hunting in the area. Wearing bright clothing is probably a good idea, especially since waders tend to be Deer colored.

11:57:34 From Kate Lundquist OAEC WATER Institute : Blaze orange and headlamps!

11:57:35 From Ben Cook, Trout Unlimited : Thanks Everyone! Gotta hop off. Have fun up there!

11:57:54 From RosieG(USFWS) : Thank you all! This is great! Go Team!

11:58:30 From Elisabeth Kennedy : I am super excited! Thank you everyone!

11:58:33 From Kate Lundquist OAEC WATER Institute : Thanks for being here everyone!!!

11:58:35 From Jacob Pounds : Looking forward to working with y'all next week!

11:58:43 From Field : thank you!

11:58:47 From Karen Converse - Lands Program, CDFW : Thank you!

11:58:54 From Kevin Swift : Thanks so much everybody, look forward to seeing you in the field where the magic happens.

11:58:58 From aarongilliam : great presentations you all!

11:59:07 From Stephanie Falzone, Sustainable Conservation : Thank you all!

11:59:22 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : See you all soon! It's going to be super fun.

11:59:26 From Christy Mower : Thanks! Awesome stuff!!

11:59:27 From Lillian.Trejo - NRCS : Thanks all, great presentations. Very excited to participate.

11:59:39 From Dave Wallace : Great meeting everyone! Jeremy and I (Sarah) are excited to start next week! We got to go.

12:00:50 From Kate Lundquist OAEC WATER Institute :
<https://www.calcareers.ca.gov/CalHrPublic/Jobs/JobPosting.aspx?JobControlId=327309>

12:01:38 From Kate Lundquist OAEC WATER Institute : That's for the first job in the fisheries branch. They will post the remaining jobs on the same website.

12:01:39 From John Downs : i'll be brining a coleman lantern

12:02:05 From Field : skinny dipping!

12:02:23 From Connor Murphy : Thank you kate! Thank you all! Cant wait to meet you all next week

12:03:29 From Eddie : Add duct tape to the list!

12:06:52 From Sabra Purdy, Anabranh Solutions/Trout Unlimited : Forecast says sunny with daytime highs in the mid-high 70s and nightttime temps in the mid-40s