

Ackerson Meadow Restoration Project
Aug. 5, 2020 Public Webinar Transcript

>> AMANDA KREIDER: Hello and welcome to the public webinar for the Ackerson Meadow Restoration project. We will get started in approximately five minutes as we are waiting to make sure everyone has a chance to log on.

Good afternoon and welcome to the public webinar for the Ackerson Meadow Restoration project my name is Amanda Kreider from Cardno. Please note that everyone is in listenonly mode to cut back on the feedback. If you have questions please put them in the questions/chat box. Please note we will be recording this webinar. The recording will be posted to the website in a few days but I would now like to introduce Lisa Acree from Yosemite National Park. She is leading the compliance process for the Ackerson Meadow Restoration project.

>> LISA ACREE: Thank you, Amanda, and greetings everybody, thank you for joining the Ackerson Meadow Restoration webinar. We have a good turnout so thank you for participating in the presentation. As Amanda mentioned, I am Lisa Acree, an environmental protection specialist for Yosemite National Park.

I want to mention upfront that this a partnership project with Yosemite National Park and the Stanislaus National Forest. We will have actions that will take place on National Park Service land and Forest Service land . Yosemite National Park will be the lead agency on the project.

I also want to give a big thank you to Yosemite Conservancy and American Rivers for financial support for this project.

In a few minutes, I will introduce Tim Kuhn, who I believe you can see on your screen now, the project manager for the project. He will be giving about a 30 minute presentation on the project.

After the 30 minutes, we will take a 10-minute break and consolidate all your questions that you typed into the chat feature on the webinar. We will come back after 10 minutes and answer your questions at the end of the webinar and end at 5:30. We encourage you to type in questions, please type them anytime between now and the end of the webinar.

We are excited because we have a panel of specialists from the project team behind the

scenes waiting to answer your questions. From the Forest Service we have Maria Benech, the Rim Fire Restoration Coordinator. We have Tracy Weddle, hydrologist for the Forest Service. And we also have Don Coultrap, range management specialist for the Forest Service. For the park service in Yosemite we have Athena Demetry Chief of Vegetation and Ecological Restoration and Madelyn Ruffner Chief of Planning and Compliance. From our contractor Cardo, you met Amanda, who will be writing and producing the environmental assessment for the project and with her is John Loewenthal, restoration biologist.

Before I hand over the program to Tim, I want to provide a little planning context for the project. This point in time is one of two times the planning team will be requesting your input into the project. The other time will be after we release environmental assessment and at that point will have a 30 day review period for the public. We are aiming for spring 2021 to release the environmental assessment.

But now we're looking for a specific set of information from you. And after you hear from Tim, who will talk about the purpose of the project and a set of different alternative concepts the park has pulled together to try to achieve those goals. Once you have that background, what we want to hear from you now is alternatives and actions that we should consider in the project that we may not have considered.

We want to hear from you about issues that we should consider in the project. We want to hear from you about resources that we should consider in our analysis and we want to hear about information that we should be using to develop our own alternatives and help us analyze the alternatives.

To provide that information, (we ask you to provide that information online), go to the same link that you used to sign up for this webinar. I will put it in the chat and you will see it multiple times throughout this presentation. There is a link that says -- it says open for comment, press that and press onward link and you'll see where you input your comments. We encourage you to put any and all of your comments on those four specific items that I just mentioned.

After the comment period is over (you can enter your comments through August 25, the end of the day on August 25), we will take this information and develop and refine a set of alternatives. Then we will analyze the alternatives and come up with a preferred alternative.

Then we will pull the environmental assessment together, send it out for public review, analyze the review comments, and write a decision document. Then we will send it up

for the superintendent and regional approval. We are hoping to start the project with your input next fall of 2021.

In the meantime, we will be consulting with our agency partners. We will be consulting with the fish and wildlife service, the regional water quality control Board, Army Corps of Engineers, and we will be working with the state historic preservation office.

As we work through the national historic preservation compliance with the state preservation office, we will coordinate that process with NEPA.

That is it for context and we are ready to go to Tim.

>> TIM KUHN: Thank you, Lisa. Hi, everyone. I'm very happy to share this information on the Ackerson Meadow Restoration project with you. I have a master's degree in ecological restoration from UC Davis. And I've worked in restoration for about 15 years. I've been getting familiar with Ackerson Meadow itself for the past two or three years.

Once again, the purpose of this presentation is to provide the background of the project conceptual alternatives we have developed to date. It is really to solicit your input on those concepts and whatever input you might have that the interdisciplinary team should consider. We will wrap up the presentation with a brief presentation on the next steps and again, we will show you links throughout the presentation to comment, provide comments.

It should take about 30 minutes and I will try to expedite. We will be a little crunched on time. I will just say that this presentation is also available on that same website that you registered for this webinar.

So if it gets confusing and there's too much, you can always download that and go through it again.

Here we go. California has lost 90% of its wetland since the 1780s. Wetlands are incredibly important for landscape features in the Sierra and elsewhere, they have high biodiversity, wildlife habitat, herbaceous forage, water storage, sediment retention, flood abatement, and carbon storage.

Healthy meadows are inundated with water for long periods of time annually and they slowly dry down to areas of lush vegetation dominated by sedges and grasses. They stay green and productive long into the growing season. Wetlands at Ackerson and other

Meadows at the lower montane elevations produce an incredible amount of forage vegetation and they're key to critical life stages for many insects and wildlife

Shown here in the picture on the right, unhealthy meadows suffer from a lower water table, the lowered water table can be attributed to land changes like ditching that lead to extensive soil erosion and early season drydown. These cause a shift, this change causes a shift in wetland vegetation to drier and less productive forage types. Simultaneously habitat that was key for critical life stages of insects and wildlife is lost.

In this photo you can see the wide and deep erosion gully cutting through the floodplain of Ackerson Meadow. You can see the general groundwater roughly equivalent to the level of the streamflow. Here it is almost 8-10 feet deep below the ground surface.

Simultaneously, head cuts form on tributary streams as the primary erosion gully cuts deeper into the surface but these elevations track each other and through this process the water table is lowered throughout the area. And even more of Ackerson wetlands are impacted .

On the right side you can see what happens as wetlands drain and dry conditions dominate. The left side shows the intent of this restoration project, to shift from these dry conditions that exist in large portions of Ackerson back to its former broad expanse of wetlands and wet meadow conditions.

Ackerson is on the western boundary of the park with a mix of U.S. Forest Service and private land areas to the west. Sitting at about 4600 feet elevation, it is about 3.1 miles from Highway 120 on Evergreen Road. This parcel was donated to the park in 2016 and contains both Ackerson and portions of South Ackerson Meadow. The Stanislaus National Forest and Yosemite agreed to consolidate management of these parcels in 2018.

Ackerson Meadow is shown here to the north It's 160 acres and South Ackerson below it is 70 acres. Watersheds for these two meadows are below 8000 feet and they generally do not accumulate a lot of snow. Nonetheless, springtime floods are the primary geomorphic drivers of conditions in the area.

We can see from this 1929 aerial photo that the erosion gully we see today is clearly well-established in Ackerson Meadow at that time. Largely in its current location.

This slide also shows the extent of wetlands through color differences. The lighter area is

dryer meadows and the dark areas is wet. This is one of the earliest photos that we have. We've also done wetland mapping and dug a lot of soil pits to determine the extent of wetlands prior to 1929.

Land use history for Ackerson Meadow is quite rich from 1860 to 1942, the golden rock ditch was in operation in various modes. Part of the ditch is routed through Ackerson Meadow and this is a likely source for the initiation of the erosion gully that we see today.

In the early 1900s, Ackerson Meadow was used to provide meat, timber and goods to the surrounding area including Camp Mather for the O'Shaughnessy dam construction. It has been used for grazing and beef production by the Carlon and Erickson family for more than a century.

In the 1940's California State Fish and game introduced three beavers to Ackerson Meadow and they rapidly established up to 25 dams and were said to have restored the meadow by 1947 at least in terms of flood attenuation from a fishing standpoint. By 1947 the beavers were gone and the benefits were lost.

The purpose and need of this project is to repair that century-old gully network as it continues to advance into intact wetlands. The gully is up to 14 feet and 100 feet wide. It has caused a loss of 90 acres of wetlands already and threatens an additional 100 acres of wet meadow habitat. Action is needed on both the park service and the Forest Service administered lands because the erosion gully has eroded roughly 152,000 cubic yd. of soil. The meadow is largely inaccessible to < 500 year floods. And to put that in context, the 1997 flood in Yosemite Valley was virtually a 200 year flood, so we would need a flood magnitude at least double that size and even greater for Ackerson Creek to access its greater meadow floodplain.

Other reasons for action are early-onset of dry conditions in vegetation, due to the lower groundwater table and the loss of wetland vegetation.

The purpose of the project is to restore natural conditions and processes in various areas of Ackerson and South Ackerson while protecting remaining wetlands and minimizing impacts from restoration.

Want to remind you that as I am going through this feel free to type questions and comments in the chat box. I know I'm going through a lot of information. And again, this presentation is on the website and available for you to review at any time.

The project goals are articulated on this slide. I will not read this to you but summarizing these goals, the project intends to reestablish the connection between the stream channel and the greater meadow floodplain by slowing down the flow of water and spreading it out onto the floodplain surface and encouraging sediment deposition. The project will restore former wetlands and enable tribal participation, provide for continued grazing on Forest Service land, protect archaeological wildlife and botanical resources and enhance wildlife habitats and also preserve wilderness character.

I'm going to switch to specific details for each of the three conceptual restoration alternatives we've developed so far. I'll also quickly walk you through an example of a hybrid alternative. It is important to note in the consideration of this range of action, the timeframe by which former wetlands might be reconnected with the groundwater and overland runoff and how-- and with the overland runoff and how that varies among the alternatives. For instance full fill and intermittent fill concepts have substantial up-front impacts from heavy equipment use but are likely to re-wet the dry meadow surfaces almost immediately while the hand built concept introduces very little up front disturbance to the current system but requires annual maintenance over multiple decades to rewet the surface. Then of course there's a no action alternative. If you can't balance impacts with benefits among all the varied interests in the meadow system, you might simply choose that now is not the time to act.

Full fill concept. You want to keep your eye on the numbers on the slides on the left. Those will change as I go through each alternative. I won't necessarily read them all to but to note those are changing as we go through this. For the full fill concept it's roughly 150,000 yd. to achieve full fill of the gully, that would reconnect meadow edge to meadow edge on each side of the two mile gully system. We would achieve the most rewetted and restored wetland habitat but incur the greatest level of impact.

This is a pretty complicated map and we will spend some time on this so you understand it. The next few maps that I show you follow this same theme. So we will do a deep dive on this one and be able to talk through the other ones more quickly. So this map shows the full fill concept and the erosion gully network as aqua blue lines running through the center of main Ackerson Meadow. It shows the extent of the full fill and encompassed around the gully by the purple lines immediately surrounding that aqua blue line.

The proposed fill source areas, aka the borrow areas are indicated in the pink lines off to the sides of the meadow. Lastly, the disturbance and avoidance areas for sensitive resources are shown by the yellow colors. The wilderness line is also shown in green as well as the administrative boundaries.

Primary things to highlight here are -- both full fill and intermittent fill concepts include heavy equipment working in and alongside the gully network so there will be equipment in the meadow system at that time.

Work may be phased over a few years and one primary reason to do this would be to take advantage of some small actions we could do to enhance wildlife habitat so that they become effective before the greater gully system is disturbed.

For both the full fill and intermittent fill concepts, fill source borrow areas are included as a primary way to obtain soil to fill the gully. These areas total roughly 40 areas as delineated here in the pink polygons. The fill volumes are calculated by considering excavations up to 3 feet deep within these polygons. The polygons avoid archaeological sites and nest trees. They have few green trees in them, they are mostly areas of dead trees from the Rim fire.

I will talk about this later in the presentation in greater detail, these borrow areas. But just noting that each of these borrow areas would be prioritized to limit impacts and the excavation of each area would proceed sequentially from one area to the next until the desired fill amount is achieved.

Actual impacts may not total the full delineated 40 acres shown here if that amount of fill is obtained earlier.

There is at least one off-site area just recently started being considered if you can see my cursor along the road to the north -- basically it goes below the F in the full fill concept north of the roadway to the right of that delineated staging area.

For both the full fill and intermittent fill concepts riparian vegetation including sedges and willows and about 6-12 inches of topsoil within the gully would be set aside, irrigated and replaced after the mineral and organic fill is used in the gully. So that material would be saved and put back on top of the surface once it is brought back up to elevation.

Similarly, the material in the borrow areas would be also set aside, excavated, set-aside and saved and later put back on top once the sites are recontoured, and then those sites would be replanted and restored to the former forest upland states.

Intermittent full. Pond and plug. You can see this picture shows completed pond and plug project from the Plumas National Forest this is red clover Valley I think. You can

see the large number of ponds, obvious along the former gully system. And then you can see them interspersed with the hardened earthen plugs. that is the process and outcome we would be looking for should we choose this alternative.

Here is that same formatted map, what is different here is the obvious red blobs along the gully system, they indicate the gully plug locations, those are surveyed in and so those are located strategically from one another so that the water level is consistent and consistently at the surface or near the surface. Technically within 18 inches or 2 feet of the surface.

And those plugs are also positioned so that flow would be directed into former channels on that meadow surface.

Some important things to note. We include the same extent of fill source areas, borrow areas that we did in the full fill proposal because we really do not know how much fill these areas will produce. Again, we are estimating that we can gather about 3 feet of depth from these areas before hitting the large rock. And so we would start again with the first priority areas off site area should that materialize and work down probably to the road obliteration areas shown between main Ackerson and South Ackerson and lastly to that fill source area delineated to the northeast or upper right of this photo. This method creates 86 deep water ponds, that is 86 plugs. This method could benefit certain species like the willow flycatcher and western pond turtle that thrive on open aquatic habitat but it is a novel habitat and we would not really expect that type of habitat in Ackerson Meadow so it may have complications with bullfrogs and other exotics or invasive species that would need to be monitored and taken care of should we go that route.

Both the full fill and intermittent fill concepts are restoration methods that have been previously tested in several areas throughout the Sierra. They appear to have general quick hydro- ecological success but each has its obvious issues and concerns.

Switching more to a low technology approach, hand built structures. So these are basically...It is basically a manual method that seeks to mimic beavers and beaver dams and so these are basically Willow riparian weave structures that are planted and they become sediment traps. So Beaverdam analogs or BDAs, structures are roughly 3 feet high and they span the width of the gully.

They step down the stream channel in a staircase fashion similar to the plug alternative I just showed you. If the gully is more than 3 feet high, which the majority of Ackerson and South Ackerson are, successive phases would be required over time to bring the

water up to the surface. Phases are generally considered when they backup water and accumulate sediment to near the top of the elevation of the beaver dam analogs.

We would be looking at accumulating 3 feet of sediment behind a given structure before we enter into a new phase and build another BDA on top of the new sediment. This involves no mechanical equipment and therefore may be well appropriate for the application in wilderness areas.

Conversely, it does require quite a bit longer time span for success. And so it might be less appropriate in some areas such as those areas with grazing

Just to remind you that this is phase 1 of the hand-built structure concept, successive phases -- if phase 1 is successful, successive phases would be implemented over time to provide more and re-wetted and rewatered wetland area. No mechanical disturbance but there's some disturbance to habitat from the willow and woody material harvesting and gathering needed for the construction of the structure. The relatively new restoration method works best if beavers move into the restoration area and maintain and add structures over time otherwise is limited to the capacity of the park and forest service and other interested parties.

Successful implementation requires annual maintenance, again multiple phases to get up to that meadow floodplain service. And an important note about Ackerson Meadow specifically is that most of the sediment is believed to be derived from the gully itself. And so as we aggrade the gully by successive phases, we shortcut ourselves in terms of sediment supplies. So each successive phase will require probably more time to accrue that amount of sediment, for success.

Most of the sediment moves during the largest floods and those are the hardest to intervene on to slow the water down and trap the sediment

So I will just say about this mentoring to expedite time here that hybrid concept is really just an open slate. We would be looking at combining these tools and others that we become aware of during the planning process to implement as a middle-of-the-road approach to maximize the benefits but limit the impacts from the restoration action.

And so, this is just an example of phase 1. What we have here to highlight is, this is a complicated map -- but if you look just off of where the center says 7259, you can see a blue Aqua dotted line, and that is where the gully, that erosion gully is 3 feet deep or less. So Beaverdam and analog structures are readily applicable to that area. It could be quite successful in that location. And then we would just have to see what you get

for successive phases.

We've shown on this example here is that we would have full fill above and below those areas for the BDA's and then we don't quite -- maybe we would use plugs in the upper easternmost region.

So again this is just an example, and we are still sorting out what is the best approach for a hybrid among all of the resource interests and whatnot.

This is a graphic display drawn to scale with the gray line at the bottom indicating the surveyed substrate of the gully channel of the erosion gully itself. And then if you skip up to the top, the green line represents the surveyed meadow surface

Full fill would effectively fill between that gray line and the green line and the water would then be held up on the surface almost immediately.

The intermittent fill idea, those plugs here for example, are shown by a number 17, 18 and 19. Those are of the surveyed heights of those plugs and you can see how the blue line backs up in a level line from the top end of each of those plugs going upstream. So there's about 2 feet of drop exposed at the lower end of each plug. So those areas are pretty critical for potential problems with erosion and whatnot so those would be critical areas we would watch.

Lastly, phase 1 of the Beaverdam analog is shown here, again to scale by these pink vertical lines and those blue dotted lines represent that level line that the water would taper off the top of those Beaverdam analogs. So again we implement successive phases as those are successful building up towards that green line.

So I want to talk about the borrow areas. This is definitely an action that has a lot of disturbance associated with it so it's worth making strong note of. As I explained before, the intermittent and full fill concepts and the hybrid would probably include excavating fill up to 3 feet deep from surrounding hill slopes either on site or off site. Those borrow sites were screened to meet certain criteria. They are previously disturbed by and large, they have few green trees, most of them are a small diameter and most of them are dead from the Rim fire. You can see an example in the picture at the right of the slide. They avoid archaeological sites and avoid wildlife nest trees. Those polygons have been drawn around those resources.

If selected, the sites would be re-contoured and re-vegetated to match the surrounding landscape after the fill has been excavated. And also noting that we are able to use

about 30% of the fill volume could be wood chips or other organic material, which is really a benefit, one because it lessens the amount of mineral soil needed to be harvested from these areas and it also introduces organics which add strong water holding capacities to the fill and hydrologic properties.

So here is a picture in the upper right of the road just to the south of Main Ackerson Meadow. This road is no longer needed for operations because the parcel was donated to the park. And so what could happen here is we could go into road obliteration action where we basically harvest the berm that was used to create this flat road surface in the first place. We could recontour that, kind of scuff that off, use that to fill in the gully restoration effort and then of course we would re-vegetate and re-seed that and try to get it back to its natural state as soon as possible.

Common to all alternatives. Running a little long on time here so I will accelerate. I will not read through this list. This presentation is available on the PEPC website. Some primary points here are-- it is our intention to provide for grazing in a manner that would protect the restoration on Forest Service land. There will be tribal participation and we have been working with the tribes and communicating information to them. And also public access would be a major part of this. It would be excluded from the construction area, should we choose to use heavy equipment just for safety purposes. And then as soon as the concern for safety is gone the public would be reallocated in just as it is today.

I will not read this to you. It is just a recap slide of what I've already covered in terms of acres for each of the alternatives. And summary comments for each of the main points for the concepts.

A table by each alternative concept by the cubic yards of fill that would not be needed for each so the full fill is the maximum amount of fill we would need and 30% of that would be woodchips and 70% could be mineral soil. That would be mixed and put into the gully and compacted and brought up to the Meadow surface.

The pond and plug, intermittent fill concept requires the least amount of fill, besides the hand-built structures which of course do not incorporate any fill and just rely on trapping that sediment over time.

With that I will leave you with these pictures. On behalf of the willow flycatcher and the great gray owl and all the wonderful species and resources at Ackerson we thank you for listening and thank you for providing your comments in the chat box. Also on the website for formal comments and I will turn it back to Lisa to wrap up. Lisa?

>> LISA ACREE: Thank you, Tim. Just a quick summary of what we have already gone over well please submit your comments by August 25 at the end of the day and you can submit your comments at the following website that is on your screen and it's in the chat. You can also get a copy of this PowerPoint presentation or hear a recording of this presentation.

Just a few milestones of the process. The comment period ends August 25. We are expecting to get the EA out to the public in spring 2021. The decision document is expected in the late spring/summer 2021 and hoping to implement the project in the fall of 2021.

So thank you everyone. We will take a 10 minute break right now and when we come back at 5:23 PM and we will be ready to answer your questions. So thank you. And we will see you in 10 minutes.

[Break to consolidate comments until 5:23 PM]

>> AMANDA KREIDER: We received a lot of question today and welcome back. We will not have time to get to all the questions. We will get to as many as possible but we will post answers to all the questions you all asked in the chat box on the PEPC website following the webinar could I will now ask questions of the panel of the park service and forest service and we will start with the first question for Tim, how much will it cost and what are the funding sources that will be needed?

>> TIM KUHN: Depending on the selection, the restoration could cost thousands of dollars annually for many decades to build and maintain hand built structures or several million dollars over a shorter period to partially or fully fill the erosion gully. The sources would be it would be from bond funds and other funds for watershed and restoration. The Yosemite Conservancy and the donors may continue to support ecological restoration of this property they helped acquire, they have been a really key contributor so far.

We anticipate having a NEPA decision in the spring of 2021 after completed the environmental analysis and after that, we will start seeking implementation funding through various grant proposals.

>> AMANDA KREIDER: The next question we have also for you Tim, is , what happened to the beavers and what about bringing back the beavers for the restoration?

>> TIM KUHN: We do not know what happened to the beavers. Necessarily. The reports, the report that we have, McIntyre, we can get back to you and post it on the website it ends in 1947 and says that basically they lost track of the beaver after that date and do not know what their fate was. Slowly, or probably episodically, the dams were blown out and the gully persisted.

>> AMANDA KREIDER: Next question is to Dawn with the U.S. Forest Service, is or will the grazing mentioned be in the same areas, and how will that be brought to acceptable restoration standards?

>> DAWN COULTRAP: So the answer is the congressional intent and Forest Service policy direct the agency to allowing grazing lands that are capable and suitable for grazing. So the expectation is grazing will continue in Forest Service lands. The Stanislaus National Forest has a forest plan direction describing grazing standards and guidelines. That are designed to ensure consistency with land management objectives including implementing grazing standards and guidelines designed to ensure meadow and riparian health.

>> AMANDA KREIDER: Thank you we are going to go back to Tim, we have another beaver related question. Will there be an introduction of predatory and other animals, such as beaver that once inhabited the wetlands?

If so, has there been decisions made and who was involved?

>> TIM KUHN: No. There have not been any decisions made in this beaver area. The topic is something that we want to study and evaluate more. There is evidence that beavers were present in the northern Sierras and helped form a lot of the Meadows in the north as far as them being in Ackerson in the central and the southern Sierra it is really lacking. The sediment and topography of Ackerson do not suggest evidence that beavers played a large role in the formation of Ackerson Meadowm even though we know they were there for 7 years from the introduction, the state put beaver everywhere at that time and it complicated those studies but that evidence is gone.

More so, just highlighting if beavers were there for a long period of time and really played a strong geomorphic role in trapping sediment and building dams, we would probably see that pretty readily in the sediment cores that we have done down to 12 feet already. Hopefully I answered the question.

>> AMANDA KREIDER: Thank you, Tim, we will go to Lisa for a quick question. Lisa, did you receive the questions submitted previously through the website?

>> LISA ACREE: Yes. We have got comments from six people and one of them we just answered. So thank you.

>> AMANDA KREIDER: Question for you Lisa, will the project money amount influence the preferred alternative selection?

>> LISA ACREE: We are going to do -- we are going to do a process for determining the preferred alternative. And the one that best accomplishes the purpose and need of the project will be the one that we select. we will also consider technical factors and cost into the mix. But how the alternative meets the purpose and need will be the primary consideration.

>> AMANDA KREIDER: Thank you we will do one more quick question for Tim. Will the park website make available a clear map defining the boundaries of Ackerson Meadow between the park and the forest service lands?

>> TIM KUHN: Yes -- I mean, that is readily available already. It probably is not on this map specifically but we can talk with our land office and get that to you. there are boundaries I realize that not all the maps were shown, showed the boundaries that administrative boundary is shown on some of the maps in this presentation.

>> AMANDA KREIDER: Thank you very much, unfortunately we have run out of time for today. We apologize, we were not able to answer all your questions. We did receive a lot of them. But they are important to us and we will make sure that we post answers to all the questions that we received today on the webinar on the PEPC website.

Thank you for your participation in the webinar and a reminder that comments are due on August 25. The PEPC link is displayed on your screen and thank you again for joining.