

## **Native Fish Habitat Restoration In Selected Tributaries of the Grand Canyon.**

### **Questions/Comments:**

Matt: In tapeats creek, is it possible to go in a different time of year when the flows are a little lower and you can actually maneuver around in there a little bit or is it a time of year thing that you need.

Bill L: It's possible. We weren't in there during runoff. This was in February and we hadn't had much precipitation so I think we've got a pretty good base flow in tapeats creek that it may get lower if you went during a drier period but I don't think it's going to get a whole lot lower. The idea of the feasibility project was to look at what may really give us the most bang for the buck. There are no natives in tapeats creek.

Matt: In terms of repatriation, a place like tapeats would seem to me to be a much better candidate for that than a kanab creek or something like that because you have that flow.

Bill L: That creates other problems with habitat for native fish as well. You don't have as many good pools of holding areas. Our biggest concern was just the ability to get in there and try to remove those fish which was part of the feasibility study.

Matt: Any thought of putting weirs in?

Bill L: Weirs is a possibility to look at. You could put a weir in looking at fish moving in from the river. It doesn't address the resident populations up higher in the system but it's definitely a possibility.

Bill P: There was a study done several years ago looking at the feasibility of establishing second population of HBC that looked at those tributaries. I think they rejected tapeats creek largely because it was too cold. It seems like it also rejected kanab creek because of habitat conditions. Did you consult that at all at part of this project?

Bill L: It will be looked at when we get to the reporting part of it. We have two more trips next year and then this action plan will look at all those.

Bill P: Because I think they already did a bit of a feasibility analysis.

Bill L: Yeah, that was just a paper case. No field work involved in that at all.

Bill P: That would be the place to start

Bill L: Obviously we'll look at those.

Bill P: How about handling the native fish? What kind of pit tag protocols are you using?

Bill L: We'll use the same protocols as for Grand Canyon.

Bill P: So you'll be working with GCMRC to make sure you're doing the same.

Bill L: Yes.

Randy S: All this work is being funded by the Park Service through appropriations.

Bill L: Not through appropriations. It's fee demonstration money for the Bright Angel Creek weir and then it's CCI (Conservation initiative by the secretary) for the feasibility study. Two separate funding sources.

Dennis: The Havasupai obviously have habitat that are interesting (?) – was it ever taken off the list?

Bill L: It was initially and we had it in there and we decided to keep it as a contingency at some point if we could work with the Havasupais a little bit closer. The politics there were a little tough to start with the feasibility study. It may be at the end of this that the Park may want to work with the tribe and see what we can do.

Dennis: It's a stream that has very large waterfalls, native fish in the lower reach and there are no chances of making it upstream.

Bill L: I would like to consider it personally. I think it would be a good choice. The politics might be tough.

Amy: Do you know what kind of consultation took place for these three tributaries with the tribes regarding this activity?

Bill L: For the feasibility study? I don't recall if anything happened with the tribes. The Bright Angel Creek, yes. The BA Creek management action, NEPA process, all went through consultation with the tribes. They were notified before the public scoping letters went out and they will be part of the NEPA compliance on that. As a feasibility study, there is CADX for research on that the Park is doing but we're not in a NEPA process with the tributary work because it's feasibility at this point and we don't know where it's going to end up. If it goes to a management action, it will go through the full compliance process.

Amy: The Park Service should still consider their role and responsibilities under Executive Orders and Secretarial Orders for consultation with tribes even if it is a feasibility study. That is something you need to put on their plate and look at for their consultation and government to government. It's an action they're taking and should consider their role in consultation.

Bill L: Okay

Bill P: Has there been any discussion about building barriers on some of these things? I think anywhere else where we try to repatriate fish into a stream, where there are exotic fish downstream, unless we can put a barrier in to keep the exotics from moving back up, generally think it's a waste of time. We have been successful in putting barriers in. Has there been any discussion of that. I'm thinking maybe of Bright Angel. Shinimu has a barrier.

Bill L: At Bright Angel, the only thing we've discussed at this point is possibly continuing to run the weir in the fall as part of the monitoring and keeping those fish from moving back in once they've been reduced. But as far as a permanent structure, I don't think the Park has really gotten to that point yet to have something built and constructing a structure that would withstand floods and those kinds of things. It's not out of the question but at this point, we would want to consider that.

Bill P: In the long term it's probably more cost effective than trying to man the weir.

Bill : Oh Yeah

Bill P: You're going to have situations now where you can't run the weir because the flows are too high. I think we all know what's happening. The fish are moving upstream.

Larry: This is more common to the group than specifically to you. We certainly appreciate your presentation here. It seems like really productive work. The question for the group is: Within the strategic plan development that GCMRC is about to do, one of my concerns is the USGS has not been engaged or been a strong advocate for restoration in this process. Most of our restoration efforts seem to come from the outside. It might be fruitful in the strategic plan development to consider GCPA requirements and directions for doing this enhancement or restoration. Granted not all the actions may be addressed by this group but having a strategic plan and some framework for bringing back native fish dominance in streams. These kind of topics might be

Jeff: That would be an advocacy position and one that I would be uncomfortable insofar as it is related to research questions that the agencies require under statutory regulations perceived in that direction.

Larry: I'm not saying advocating for those. I'm saying laying out some of the options there in relation to the GCPA. So if riparian restoration, if fisheries, population structure, and things that are included in those guidelines that the strategic plan shouldn't ignore the options for restoring, not that this group necessarily would be involved but partnering with the NPS and outside organizations to get the work done.

Norm: Larry, maybe it would be more appropriate those kinds of things be not in the GCMRC strategic plan but in the AMP Strategic Plan.

Larry: I think they are already in the AMP SP.

Norm: And they're identified in the overall budget for this program so in a sense it's listed in there. It's not fully fleshed out and discussed on what's going to happen and maybe there needs to be a place for those programs to be brought into the yearly cycle, maybe not in the GCMRC budget.

Jeff: Yeah, I'd be real uncomfortable putting in there but we'll certainly be responsive to the needs that are articulated by this group through their strategic plan, through the meetings we have with the TWG, and as long as it's based on research and our traditional role in the USGS, we'd be supportive.

Larry: So we've got these pretty sexy projects that are going on. Certainly the mechanical removal of trout is a big deal, exploring the options of reducing non-native fish in the tributaries, tamarisk work that we're doing. Those are pretty attractive programs that the public should be pretty proud of this Govt. for doing and this process, at least if not doing directly but at least collaborating with those elements. There is good PR to be had out of these projects and perhaps in the outreach realm these are things that could be

Norm: I think also Larry there needs to be some kind of formal endorsement by this group. I know it's included in the budget but somehow some kind of sense of the TWG or the AMWG that they like these projects in some way might highlight them a little bit and get the Secretary's attention.

Randy S: I guess I would take a little bit different approach to that. This is where we have a fundamental difference in where this program needs to go and I really think we're constituted more to look at what kind of dam operations can be implemented to improve the environment. When we go up to the tributaries, there is no impact on that. It may be covered under the GCPA but I think at that point it is more appropriately included Norm in your plan for the Park than it is for the Strategic Plan for this group and certainly doesn't belong in the GCMRC Plan in my opinion.

Dennis: The project that Bill is discussing is in the HBC Comprehensive Plan and as Randy well knows we went through a lot of deliberation there about what was in and what was out but this is clearly an element of one of the three approaches to augmentation which includes translocation of HBC into other tributaries to satisfy in situ refugia needs as opposed to taking them out of Grand Canyon National Park and putting them in a holding facility. Just wanted to identify that is already acknowledged by the program in a sense. The AMWG hasn't agreed to that Plan and the intent is to move it forward for FWS.

Matt: This is a general comment that made transition us into our next agenda item. On projects such as yours Bill, and these NPS projects like the weir and everything, I think we should always ask ourselves how information from these kind of outside of the AMP, how that data and information is being integrated back into the databases and information library at GCMRC and how we can make sure all that stuff keeps integrating back into the greater good for this program.

Bill L: I agree and I think Jeff Cross would agree that anything that we do.

Matt: It's a problem that we've had in the recreation research with the Park doing projects and this thing, and funding projects. There is not a lot of interaction between those where it's obvious that it needs to be.

John R: As the strategic plan is developed, that information responsibility at the Center, what does it house? That's a good question that you raised.

Jeff: I think that has already been articulated in previous documentation. We're suppose to be the storehouse for all the information that is collected under the AMP for GCD.

John R – He just raised the question for things that are outside the program and Randy's question of it being in or out.

Jeff: Once they're determined to be inside, it's a matter of record that GMCRC's task is to be the repository for that information.

Matt: I would argue that it's also the repository for information particularly on some of these larger projects, like the weir project at Bright Angel that is directly affecting populations in the mainstem and those interactions. I just want to make sure we don't lose that information because it's some other agency's responsibility. That it's in a central place where you can get that information. You don't have to shop around in various agencies.

Bill D: All the things we're doing for the HBC need to be considered by GCMRC in total. It may be done by the Park Service, AMP, Upper Basin. There are all kinds of things going on and if you don't have a central place for all this information to go, you're going to lose track of how they lead you. I agree with you totally.

Dennis: Where does it stop as we go up into the LCR at some point in time. We live in a world of computers and database searches and agencies who are responsible for maintaining their information. When Mike Liszewski comes forward and asks for additional dollars for the web, we turn him down but here we're saying that GCMRC should be responsible for everything. We need to put more funding in that effort.

Mark – I disagree with Larry. I really don't see the slaughtering of tens of thousands of trout as being sexy and I really don't like the fact that visitors to the park are losing their recreational opportunity. We lost the opportunity to fish for warm water fish with GCD. If we're going to replace that, that's one thing but if all we're doing is taking away the opportunity to fish for trout, it's by no means a sexy thing. If we're going to go about replacing a pipe, and the HBC as a fishing opportunity that's something I would be willing to support. We have West clear creek where we have brown trout at the headwaters, rainbow trout down a little further and we have roundtail chub below. Roundtail chub are certainly a sport fish in the state of Arizona. There is no reason HBC could not be as well.