From: Probert, Cheryl -FS <cprobert@fs.fed.us>
Sent: Thursday, August 06, 2015 10:48 PM
To: David Arthaud - NOAA Federal
Cc: Kenneth Troyer - NOAA Federal; David Mabe - NOAA Federal
Subject: Re: Suction dredging in SF Clearwater River
Attachments: image002.png

Thank you, I appreciate this info!! It's just what I was looking for. Cp

Sent from my iPhone

On Aug 6, 2015, at 10:55 AM, David Arthaud - NOAA Federal <david.arthaud@noaa.gov> wrote:

> Cheryl, this is more than a couple of bullets but I tried to capture the issue for solidarity. Thanks. DA
>
> Large-scale and long-term damage caused by placer mining is well documented in history. Placer mining includes few if any benefits to salmonids and their habitat and recreational placer mining using motorized suction dredges still causes a number of significant adverse effects to listed salmonids and their critical habitat. Gasoline engines are used to increase digging power and stamina over manual methods and successful accrual of gold requires determined and repeated dredging focused on features likely to collect gold, which are often preferred habitat of salmonids. Spawning bars are placer deposits, broken bedrock collects heavy gold and provides pathways for cooler hyporheic flow and groundwater used as refugia by salmonids, and stream banks protect strata containing gold yet provide cover and forage for salmonids. Regulations reducing the size and power of motorized suction dredges and a suite of other mitigations can help limit impacts to local (within a few hundred meters) and temporary (within 1-3 years) scales.
>
> Salmonid yearclass strength is mostly set during freshwater rearing early in life. Limited resources and competition cause strong density dependence. Rapid growth of young fish is critical to reduce predation and provide energy that will increase survival during migration. Even small scale and low intensity reductions in habitat quantity and function (cover, food, space) can have significant effects on salmonid population growth. Continued mining during very low flows and high water temperatures, like those in the SFCR during summer 2015, exacerbate adverse effects of motorized placer mining on listed salmonids.
>
> An annotated list of motorized suction dredge mining impacts on listed salmonids that can be mitigated in whole or part, includes:
>
> 1. Visual and noise disturbance and dislocation of fish.

2. Turbidity related displacement, injuries (gill abrasions), and reduced feeding.

3. Destruction of redds, including associated eggs, larvae, alevins, and fry.

4. Crushing juveniles that seek refuge in substrates when alarmed or during daylight in winter and in clear, shallow water during summer.

5. Crushing, dislocating, exposing, and forcing drift of salmonid forage, including: insects and other macroinvertebrates, lampreys, snails, mollusks, amphibians, larval and other small fish. Both richness and density of forage can be reduced.

6. Covering substrates and filling interstitial spaces with fine sediment, which particularly alters salmonid spawning, refugia (escape and thermal), and overwintering habitats, and can further reduce preferred forage (i.e., larger insects and snails).

7. Moving, disaggregating, sorting, and redistributing substrate components reduce habitat function, diversity, and integrity. This is a key long-term or cumulative impact. Riffle crests can be changed, which may affect reach hydraulics. SFCR substrates are filled with surficial fine sediments and its habitat is simplified, caused in part by legacy and continued placer mining.

8. Redistributing benthic organic matter, which is a primary source of carbon and energy for salmonid forage and binds metals and other contaminants that can be harmful to salmonids.

9. Dislodging or destroying periphyton (complex assemblage of algae, cyanobacteria, microinvertebrates, their secretions, and detritus attached to submerged surfaces) reduces habitat supporting salmonid forage. Periphyton may require months or seasons to reestablish.

10. Re-suspending fine sediments, heavy metals (copper, mercury, lead, zinc) when streams are at their lowest velocities and volumes, increases contaminant concentration and settling.

On Tue, Aug 4, 2015 at 8:35 AM, Probert, Cheryl -FS <cprobert@fs.fed.us> wrote:
Thanks Ken, I appreciate the bullets, even while you are on vacation! Cp

Sent from my iPhone

On Aug 4, 2015, at 7:22 AM, Kenneth Troyer - NOAA Federal <kenneth.troyer@noaa.gov> wrote:

> Will do, Cheryl. I am on leave right now but this is important and i am copying both Dave Mabe and David Arthaud, the biologist on this and some other of our consultations involving suction dredging.
>
> In brief, unmitigated suction dredging can:
>
> 1) Turn over and destabilize steelhead spawning gravels. When steelhead need to spawn in the gravel next spring, the dredging process may have covered gravels completely, filled the interstitial spaces with enough fines that they will be poorly oxygenated for incubating eggs, and/or loosened substrate structure such that gravels will shift readily with high flows during and after steelhead spawning and potentially crush incubating eggs.

2) Cause turbidity day after day that can adversely affect juvenile steelhead rearing in the South Fork Clearwater River. Among the potential adverse effects are displacing the fish from preferred habitats into areas where they won't feed as well or be more likely to be killed by predatory fish and birds, and for the fish that stay in the suspended sediment, adverse physiological affects including gill abrasion and reduced function of gill membranes.

David Arthaud can offer a more complete picture of the effects, so I hope that he has a chance to add some more info and pass that along to you today. Thank you for keeping us apprised, Cheryl.

On Mon, Aug 3, 2015 at 2:44 PM, Probert, Cheryl -FS <cprobert@fs.fed.us> wrote:

Ken,

We issued Notices of Noncompliance to several of the miners on the South Fork and they were not happy. They are contesting a lot of stuff but the place I need to make sure I am solid on is why we consider suction dredging at this scale to have significant impacts if we do not have mitigations. Can you give me a couple of bullet points from your perspective on the significance of the impacts on fisheries without mitigations. Thanks! Cp

<image001.png>

Cheryl F. Probert
Forest Supervisor
Forest Service

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Caring for the land and serving people

From: Kenneth Troyer - NOAA Federal [mailto:kenneth.troyer@noaa.gov]
Sent: Wednesday, July 22, 2015 3:56 PM
To: Probert, Cheryl -FS
Subject: Re: Suction dredging in SF Clearwater River

Document ID: 0.7.766.5147 RELEASE 0000099

thanks for letting us know, Cheryl. Dave will likely pass info along to our law enforcement folks as we get it. Our LE was peripherally involved with EPA and USFS or BLM LE last summer.

On Wed, Jul 22, 2015 at 3:39 PM, Probert, Cheryl -FS <cprobert@fs.fed.us> wrote:

Just FYI, we are issuing Notices of Noncompliane where appropriate. Cp

Sent from my iPhone

On Jul 22, 2015, at 3:34 PM, Kenneth Troyer - NOAA Federal <kenneth.troyer@noaa.gov> wrote:

> fyi, Cheryl and Will. We are still in the consultation process as you know, but appreciate the heads-up from Clint that some folks are going ahead and dredging anyway (I assume on the basis of their letter permit from IDWR, even though that permit says on it that they need a permit from EPA also, which none of them could have yet because the EPA permit will rely on the USFS permit for compliance with NEPA/ESA).

> ---------- Forwarded message ----------
> From: **Shawna Theisen - NOAA Federal** <shawna.theisen@noaa.gov>
> Date: Wed, Jul 22, 2015 at 3:23 PM
> Subject: Suction dredging in SF Clearwater River
> To: David Arthaud - NOAA Federal <david.arthaud@noaa.gov>
> Cc: Kenneth Troyer - NOAA Federal <kenneth.troyer@noaa.gov>, David Mabe - NOAA Federal <david.mabe@noaa.gov>, "Hughes, Clinton E -FS" <cehughes02@fs.fed.us>
>
> Hi David A,
>
> I just thought I would give you a heads up on some dredging that is currently occurring in the South Fork Clearwater River again this summer. I called Ken this afternoon to make sure you were the right guy to include in the information gather that will start to occur.
>
> Clint Hughes with the NPCNF stopped into my office to let me know there are 11 different dredges operating in/near the stretch

that the dredging occurred last year. I asked Clint, who is heading to the river to take a look, to send us any photos they may take of the operations. I also recommended that a fish biologist accompany him and document habitat conditions.

Once I figure out the right forest contact name/number, I'll email that info to you and I'll forward anything else that may come my way.

Happy summer!

Shawna

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Shawna Theisen

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