

Meeting Summary; GRAVEL AUGMENTATION WORK GROUP  
Tuesday May 13, 2014; Via Webex from TRRP Office, Weaverville, CA

**Participants**

Core members: Robert Franklin (coordinator, HVTF), Dave Gaeuman per WebEx (BoR); Andreas Krause (YTF), Conor Shea (USFWS), Mark Smelser (CDFW); Scott Kennedy per WebEx (DWR), Wes Smith (NMFS).

Other participants: Aaron Martin (YTF), Charlie Chamberlain (USFWS)

Notes: Robert Franklin (HVTF).

**Action Items Derived during the Meeting**

- Charlie Chamberlain will distribute Vision Quest PowerPoint and White Paper next week for a two week review by GAWG.
- Dave Gaeuman will check with Brant in regards to any technical information needed for 5-year permits on CRS wherein gravel is being added, as opposed to gravel only projects.
- Aaron will re-visit the subgroup gravel augmentation sites analysis, to prioritize the list of potential sites.
- Andreas will draft a biological rationale plus gravel specs/volumes for low-flow gravel augmentation sites, for circulation to Brant. He will work with Dave Gaeuman.
- Wes will request from Ernie an update on status/process for production of GAWG Long-Range Sediment Management Plan.
- Mark Smelser will develop a list of specific questions to Brant, to jog his comments regarding input for permits.

**Action Items from Previous Meetings**

1. **Scott** - Glean from the FES, ROD, IAP, and 2007 Coarse Sediment Management Plan (2007 CSMP) for the five most important and achievable objectives related to gravel augmentation or management; (done, see Draft Objectives 051214 Highlighted.docx)
2. Use Dave's recently developed transport rate based on GMA's work to inform long term transport volumes; and
3. **Mark** - Use Dave's mapping (in progress) and maps in Coarse Sediment Management Plan (2007) to target areas in need of gravel as well as gravel sources (done; see Gravel\_augment\_geo\_compile.pdf)
4. **Aaron** - Use our documented understanding of how the past gravel augmentations [Aaron] have behaved/evolved to develop site specific objectives and appropriate metrics to measure and monitor; (linked to #1); [Wes, Andreas, Conor serve as sounding board] (done: see Hab\_effects\_from\_gravel\_aug.pptx)
5. **Aaron** - Identify where more gravel could improve habitat conditions (includes Reviewing 2007 potential sites and screen potential sites for maximum placement in 5-yr plan) [Dave, James, Andreas, Conor serve as sounding board] (outstanding: shapefile of possible augmentation locations in the process of clean-up edit)
6. **Wes, Charlie, Justin** - Finish vision quest; group to write down attributes of "good" sites; this should feed into 5 – rush on this one ( outstanding: completion of this item has been pushed back to accommodate more careful review and editing)
7. **Brandt** -Develop outline for 5-year plan that meets regulatory and technical needs (done)
8. Combine the above into a five-year gravel augmentation plan to be implemented beginning during the spring of 2015 (outstanding).

## **Meeting Notes**

Ernie Clarke (USFWS) and Brant Gutermuth (BoR) were not able to attend. The agenda was reworked to suit.

### **Vision Quest:**

Charlie reported on further work on Vision Quest. Last time they presented the Google Earth exercise, showing examples of active river channels on rivers other than the Trinity. Since then they have developed a more in-depth analysis. TAMWG has requested a presentation. Charlie is considering that a White Paper report might be a suitable companion to a Powerpoint presentation. There was discussion of how a considerable portion of the valley floor zone along Trinity is no longer available for the river to move across: loss of flood stage; infrastructure; tailing piles and the like each have diminished the active area. The WG discussed how a 100-year time horizon for planning might be able to bring into focus how some of the valley floor constraints might be addressed; and example was removal of tailings in selected areas to accommodate expansion of channel meander zone and associated floodplain.

During fry rearing period, higher flows are not uncommon below Rush Creek and other tributaries, and fry habitat gain potential is high in the channel/floodplain areas flooded during these higher flows (see below under Aaron Martin's report on Dark Gulch). Temperature variability is a target being met in alcoves maintained by high flow channels. Recruitment of large wood along with development of riparian coverage across the floodplain can be planned only with a long-time-frame plan. Channel complexity is directly related to sorting of sediment, leading to higher variability in depositional features and increasing habitat complexity. Dynamic features are not predictable over time, not persistent in any particular location. White Paper and PowerPoint to be reviewed internally (GAWG plus) prior to going out to TAMWG or beyond.

Conor states that the gravel supply in Trinity is insufficient to see a fully alluvial river in more than a few short reaches. He believes it would be valuable to develop a map showing zones where we can/can't accommodate or achieve migration. Constructed rehab sites are in part designed with longevity in mind. Designs should be targeted toward leaving behind processes that continue to improve habitat. Conor says that the Long-range Sediment Management Plan should have measureable objectives and a comprehensive accounting of constraints.

### **Effects of Gravel Augmentation on Juveniles**

Aaron walks us through a PowerPoint. Starting with rehab sites - placement of bars and evolution of sites at Sawmill, Trinity House Gulch, Reading Creek. Many bars eroded, some were "replaced" by deposited features within same reach. Lowden Meadows forced meander bar was constructed to be out of water even at 11,000cfs release; bars placed at Trinity House and elsewhere were much lower – allowing overtopping at flows approx. 4000-5000. Cableway site showed increase in habitat thanks to flooding of right bank Hocker Flat and Dark Gulch are examples of bars forming via dynamics. Hocker Flat has emergent right bank bar and modest gains. In contrast, the lowered floodplain on right bank appears to be working very well. As early seral stage vegetation begins to cover the lowered floodplain (approx. 2000 cfs floods this area) fish habitat, including "optimal" habitat shows enormous gains. Conor remarks that the

unconfined channel and nearby upstream sediment source (Rush Creek) at Dark Gulch mark its potential as greater than other sites such as Lowden Meadows.

### **Potential Locations for Augmentation**

Aaron presents findings of subgroup: Andreas, Wes, Dave G., James Lee, Andreas. They met to identify potential gravel augmentation locations along the river targeting the 5-year permit period. A total of 15 sites were identified, including 5 previously-identified injection sites. No constraints such as accessibility, landowner cooperation or construction feasibility were given weight at this step. The presentation proceeded downstream from Lewiston Dam, pointing out locations where fish habitat gains were potentially achievable. McIntyre Gulch shows where bedrock outcrops interact with gravel moving through the system, in a way that shows promise as a model for dynamic features nested within static features. In this reach, bedrock outcrops appear across the channel cross-section, and alluvial deposits form and re-form in a high-complexity mosaic. It is the sense of the group that substantial improvements in habitat complexity will come from a combination of construction, incorporation of large wood, plus gravel additions. In many locations, simple addition of gravel into unmodified reaches will result in only modest gains, as gravels will be transported downstream quickly instead of depositing as bars. Specific examples wherein habitat is improving in response to high loads of sediment plus large wood, even in the absence of construction activity include McIntyre Gulch, where in-channel outcrops of bedrock force changes in flow direction at a wide range of higher flows.

### **Combining USGS Alluvial Maps, CSMP maps, and Gaeuman analyses**

Mark Smelser offers that Long-range Plan development should combine information from efforts completed over the years: recent mapping by USGS, mapping included in the Coarse Sediment Management Plan of 2007, and Gaeuman's maps of bank makeup/erodibility, combined with Gaeuman's recent work: reports on pool filling and average sediment transport rates.

### **5-Year Permit**

Permitting Requirements are associated with sites where no construction is required to make gravel augmentation beneficial. We are moving forward only on sites where simply placing or injecting gravel is sufficient, not where gravel will only be added in concert with construction.

### **Long-Range Sediment Management Plan**

There was no update regarding the Plan.

### **Hatchery Reach Design**

The design for this project has been postponed for the time being. Discussions underway are addressing potential and pending changes to hatchery management as they have potential to impact decisions regarding goals for rehabilitation in this reach. Project construction is now expected to occur no soon than 2016.

# Gravel Augmentation Workgroup Meeting Agenda

Tuesday 13 May, 2014  
 9:00am to 4:00pm  
 Arcata Fish and Wildlife  
 Office Large Conf. Room or  
 Teleconference - WebEx

**Coordinator:** Robert Franklin

**Desired Outcomes:**

1. Plan for meeting deadlines re: long-range sediment mgt plan and 5-year permits
2. Clear assignment of responsibilities to Workgroup members, and others, related to #1.
3. Common understanding of habitat objectives (Vision Quest)
4. Common understanding of WG guidance from Phase One Review
5. Clear assignments for developing long-range sediment management plan.
6. Approve content of WG report to TMC at March 2014 meeting.

**Please be familiar with:**

1. Purpose of the Gravel Augmentation WG and Physical WG
2. Trinity River Flow Evaluation Study – geomorph/riparian sections
3. Integrated Assessment Plan – sediment and geomorph objectives
4. SAB Phase One Review recommendations
5. Coarse Sediment Management Plan (2007) and suggested revisions

**WebEx Call-in/Log-in Details**

Time: 9:00 am, Pacific Daylight Time (San Francisco, GMT-07:00)

Meeting Number: 570 769 496 Meeting Password: Abc123!

Time	Topic	Presenter
9:00	Introductions, WG Protocol, Agenda Overview, Review of notes from February meeting, Overview	Franklin
9:15	Summary of task (TMC motions, needs from regulatory agencies, milestones a) 5-year permit needs, b) refine/revise long-term CSMP plan	Clarke
9:30	Technical analyses completed since last meeting <ul style="list-style-type: none"> <li>• Vision Quest: relating sediment management to desired habitat conditions for multiple species of fish; defining top-priority objectives for long-range sediment management</li> <li>• Gravel augmentation effects on habitat</li> <li>• Potential locations for gravel augmentation</li> </ul>	Workgroup
11:45	Update on Long-range Sediment Management Plan: content, authorship, status Update on information for 5-year permit: content, authorship, status	Franklin and Workgroup
12:00	Lunch	
2:30	Addressing Long-range needs <ul style="list-style-type: none"> <li>• TMC direction (role of Physical WG vs role of GAWG)</li> <li>• Regulatory compliance</li> <li>• Phase 1 Review recommendations</li> <li>✓ DSS</li> </ul>	Franklin and Workgroup
3:15	Assignments to WG members – documentation of final recommendation	Franklin
4:30	Adjourn	