

Stream Access and Recreation Working Group Meeting Notes

October 25, 2016

AWSMP Office, 3130 State Route 28, Shokan, NY 12481

10:00am to 12:00pm

In attendance,

Marc Hollander, Working Group Co-Lead, American Whitewater, KCCNY

Mark Loete, Working Group Co-Lead, Ashokan-Pepacton Trout Unlimited

Leslie Zucker, CCEUC

Brent Gotsch, CCEUC

Chris Tran, NYC DEP

David Burns, NYC DEP

Doug Dekoskie, NYC DEP

Danyelle Davis, NYC DEP

Maxanne Resnick, Woodstock Land Conservancy

Harry Jameson, Mountain Creek Recreation

Tony Cocozza, Ashokan-Pepacton Trout Unlimited

Aaron Bennett, UC Dept. of Environment

Rob Stanley, Town of Shandaken Supervisor

Adam Doan, UCSWCD

Amanda LaValle, UC Dept. of Environment

Myles Gordon, KCCNY

Mary McNamara, Lower Esopus Watershed Partnership

Mike Flaherty, NYSDEC

Guest Speaker: Dr. Ellen Wohl, Colorado State University

Welcome and Introductions

Participants of meeting went around table and introduced themselves. Leslie Z. introduced Dr. Ellen Wohl of Colorado State University who was the guest speaker.

Presentation on Risk Analysis for Management of Large Wood in Streams

Dr. Wohl gave a presentation on her work analyzing large wood in streams. Some highlights from her presentation included:

1. Wood was once very common in North American streams prior to concerted efforts to remove it for irrigation, transportation, and flood mitigation purposes.
2. This removal has led to some unexpected consequences with instability and habitat degradation.
3. Large wood in streams is necessary for water quality, flood retention, and healthy habitat.
4. Large wood can also pose hazards to infrastructure and river users (particularly tubers).
5. Faculty at Colorado State University developed a decision process for managing large wood ([Wohl et al. 2016](#)). The process is designed to help managers evaluate the risks and benefits of instream wood.
6. They identified eight factors that increase or decrease the level of hazard that large wood creates for the safety of recreational users: access, reach characteristics, ability to avoid hazards, prior knowledge, location, snagging potential, strainers, and anchoring.
7. There are multiple options for reducing the hazard of large wood. They include: no action, monitor, stabilization, signage/outreach, remedial pruning, close reach, and move wood.

Committee Discussion

Following Dr. Wohl's presentation the working group members asked questions and discussed what was presented.

Q. Who takes on responsibility of anchoring, signage, closing the reach, etc.? Who assumes the responsibility/liability?

A. Army Corps of Engineers (ACOE) and the Bureau of Reclamation published a manual ([2016](#)) on large wood management, dealing in particular with engineered log jams (ELJ). The paper makes a strong recommendation that a professional engineer (PE) be involved with designing any project, such as a geoen지니어ing firm that hires PEs to do a risk analysis. This cuts down on liability concerns.

Q. What types of signs are placed on a river to alert people to hazardous strainers? Is there a standard type used similar to a Deer Crossing sign?

A. Some places use a big yellow sign that says "Hazard Ahead. Boaters must exit river now!"

Q. What is the hyporheic effect in bedrock streams?

A. It depends on the thickness of sediment above bedrock – even a meter of sediment will encourage hyporheic exchange. But if directly on bedrock will not have much hyporheic effect. [Wohl's presentation covered the role large wood plays in encouraging hyporheic exchange (water coming from just beneath the channel and returning), and the resulting benefits of denitrification and cooling stream water.]

Q. Speaking about velocity differential forces, is it a lift force that moves large boulders in streams?

A. Large boulders are mostly moved through drag force. The force of water flowing against the obstacle. For lift force, need a certain amount of water above the top of the obstacle. The velocity differential above/below the obstacle creates a pressure gradient. Once an object is destabilized it's more likely to keep moving; also if the entire bed is moving a large boulder is likely to keep moving.

Q. What is the research on and correlation between transport of wood and fine silt, clay?

A. Most research is on coarse sediment. Complex wood (trees with lots of branches) will trap more fine sediment near it. Unless entire rootwad for example becomes mobile; this could increase sediment transport.

Q. What is the longevity of engineered log jams?

A. Practice has only been around for about 10 years so it's still relatively soon to know how long many will last. Longevity is mostly a factor of whether the wood is fixed in place and how decay resistant the wood is. Rootwads are beneficial in the sense that they help with long-term stability.

Q. Any studies on floodplain wood retention?

A. Not much. Only a handful of papers that look at ecological benefits of floodplain wood. None looking at retention of floodplain wood or physical science. Observationally, retention is dependent on the size of pieces relative to the average space between tree trunks. Large wood may float but tends to be trapped.

Q. Is there a typical cycle for normal routine evaluation and event-based evaluation?

A. Don't have examples. Up until now there's been an automatic reaction to take all the wood out. Now spending a lot of money to put some of it back. Immediate focus was on getting roads

open and minimizing hazards. There might be studies of active wood restoration and management from the Pacific Northwest; most examples are from that part of the country.

Q. Are there any figures on the economic impact of the Trout fishery in Colorado?

A. Don't know of any estimates. It's very important, but probably less than elk hunting (the hunting tags are expensive).

Q. How have local governments reacted to the evaluation protocol? What level of commitment have municipalities made to using it?

A. People at a recent watershed conference reported they are just starting to use the checklist and are excited about it. The Bureau of Reclamation and ACOE's recent support for wood reintroduction is a huge step. Fort Collins and Boulder, CO are places that are being proactive in using the evaluation.

Q. Would wood retention have made the 1976 flood on the Big Thompson River less destructive?

A. With this steep and narrow of a canyon it wouldn't have mattered if more wood was there. There was a local, convective storm late in the day. Campgrounds and houses were downstream. It wasn't raining that hard where they were and people didn't evacuate when emergency personnel asked; 142 people died. Some people evacuated down valley to evacuate rather than to higher elevation. Signs are now posted in Colorado saying "Climb to Safety."

Q. Sabo dam concept is interesting but they can be expensive. How do you weigh and balance the catching of the debris with their cost?

A. Sabo dams are fairly common in Japan and in Alpine areas of Europe like Austria, Switzerland and northern Italy. There is well established engineering that goes into them before they are put in place. They evaluate the channel slope, transport potential, etc. Closed Sabo dams (AKA check dams) that catch sediment need to be cleaned out every so often to remain effective. It's not practical for everywhere. Would have to weigh the cost of structure with the amount of people/property they are protecting.

Q. How do you balance bank stability with natural bank erosion?

A. Acceptable erosion is very context specific. Wood doesn't necessarily cause erosion. Depends on how the wood or large wood is positioned and placed/oriented. Need someone with an

engineering or geomorphic background to evaluate. They can use hydraulic models to estimate what wood will do during different flows and discharges.

Q. How do different user groups work together effectively?

A. In Colorado and other locations there are watershed groups that meet regularly to discuss these issues and try to come to consensus. Ultimately, the ACOE has jurisdiction over navigable waterways. For certain activities, a permit is needed under Section 404 of the Clean Water Act and the ACOE regulates that. Watershed groups can provide input on what management approach is taken.

Committee input:

In NY, the State takes over a lot of responsibilities for the ACOE. The ACOE permit is over top of the State permit (as in other states). Many streams don't fit into categories regulated by the State, and for those streams, the ACOE has sole jurisdiction.

The State regulates disturbance to the banks, not the large wood itself. The permit is to do work that creates a disturbance when removing wood.

Other Comments from Dr. Wohl

Based on early observations of the Esopus watershed, these look like high energy, high transport, high capacity streams. Three scenarios to consider:

- 1) Accept wood will be mobile and plan for that.
- 2) Figure out a way to anchor wood in place without creating additional hazard.
- 3) Focus on floodplain wood that can create a lot of environmental benefits.

Words matter, and Dr. Wohl encourages not calling wood "debris." Instead using the terms large wood, instream wood, or large wood material. Debris makes one think of cars and trash washed into streams. Debris has only a negative connotation. Wood is beneficial when you think of streams as an ecosystem.

There's a lot of middle ground that can be found. Large wood management doesn't have to be an all or nothing approach.

Next Steps for the Committee

- Use a checklist to evaluate the risks and benefits of large wood in streams.
- Use this checklist in the section of stream in high recreational use.
- Work to find a middle ground and start with the desire to leave wood, but move to removing or moving wood out of harm's way where it's needed.

Esopus Creek Fishery and Drought

Mike F. reported that DEC has issued a request to anglers to not fish the Esopus Creek from the Shandaken Tunnel outlet (Portal) to the reservoir.

The Schoharie Reservoir is at 7% capacity and water coming from it is highly turbid. DEC evaluated the combination of having a concentration of fish coming up from the Ashokan Reservoir to spawn, but staging below the Tunnel waiting for higher flows to move upstream, with shutting down the Portal, which would make the fish highly vulnerable to angling and predation while trying to spawn.

As a result, DEC is seeking an emergency regulation to close angling in this section before the season closes at the end of November (has not been issued yet).

Normally there is enough water to release (from the Tunnel) through the fall. Current flows from Portal are 20 cfs. Normal flows would be closer to 180-200 cfs this time of year. Normal flows around the Coldbrook stream gage are 300 cfs. They are around 40 cfs currently.

Recently, turbidity levels entering the intake and exiting at the Portal were around 40 NTU. At the Coldbrook gage, the Esopus was around 6 NTU, leading to the conclusion that by the time the sediment reached Coldbrook it was settling in the stream bottom.

There is concern among some members of the working group that DEP is not making enough of an effort to preserve the available cold water in the reservoirs (specifically the Schoharie Reservoir) particularly for fisheries but also for recreational releases (the October recreational release was canceled because of the lack of cold water reserve). It is the belief of some that the Operational Support Tool (OST) was meant to help balance all of these concerns based on real-time data. It was explained that the OST uses current data as well as historical data to help make decisions but it's not the only tool used to ultimately make decisions on water releases.

The next State Pollution Discharge Elimination System (SPDES) Permit meeting, which typically provides updates on all of these matters, will be held in February 2017 in Shandaken.

Adjourn

Next meeting date to be announced.