

# Trees to Tap

## Steering Committee Meeting Notes (full)

Notes prepared by Jeff Behan and Lisa Gaines (30 January 2018); revised Feb 2018.

### Meeting: 25 January 2018

Attendees: Marganne Allen, Seth Barnes, Jeff Behan, Ashley Coble, Mike Collier, Mike Cloughesy, Dave Emme, Lisa Gaines, Cathy Kellon, Teresa Kubo, Jon Souder, Brian Staab, Mary Scurlock, and Josh \_\_\_\_\_ (representing Gene Foster)

## To Do's

- **INR:** Create a project webpage within the Institute for Natural Resources' website
- **Steering Committee:** Provide contact information about stakeholders who should receive updates about the project, including eventually soliciting publications from them. Provide name, affiliation and email address to [lisa.gaines@oregonstate.edu](mailto:lisa.gaines@oregonstate.edu).
- **Jeff (INR):** conduct preliminary search of publications for the following parameters in order: (1) suspended sediment variability/turbidity – quantity, timing); (2) water quantity – peak summer least supply high demand); (3) Dissolved organic carbon – not nitrates in surface water; and if time allows, (4) pesticides.
- **Steering Committee:** If you have any key literature regarding the abovementioned parameters for the preliminary search send the URL or the publication to [jeff.behan@oregonstate.edu](mailto:jeff.behan@oregonstate.edu)
- **Josh (DEQ)** to provide ownership, water supplies (Non-transient, non-community (workplace and school)); community system (includes municipalities) information available through the DEQ state layer to [jon.souder@oregonstate.edu](mailto:jon.souder@oregonstate.edu) and [lisa.gaines@oregonstate.edu](mailto:lisa.gaines@oregonstate.edu).
- **Brian Staab** to provide Lisa Gaines and Jeff Behan information about and online system for people to deposit publications.
- **INR:** Set next steering committee meeting. Tuesday March 13<sup>th</sup>, 11:00am-2:00pm. We'd prefer that this meeting is face-to-face, but will have a GoToMeeting set up. We will work to reserve the same room as before for the second Steering Committee meeting. Please do whichever is most convenient for you.

### Trees to Tap Steering Committee Meeting #2

Tuesday, 13 March, 2018 11:00 AM - 2:00 PM PDT

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/799843117>

You can also dial in using your phone.

United States: +1 (872) 240-3212

Access Code: 799-843-117

First GoToMeeting? Let's do a quick system check: <https://link.gotomeeting.com/system-check>

## Suggestions/Decisions

- Primary purpose of the review is to lay out what we think we know about the effects of forest management on [drinking](#) water. Secondary purpose is to lay out the gaps.
- This project is not a one-to-one update of the 2001 report
- Before the next meeting, conduct preliminary search of publications for the following topic areas in order: (1) suspended sediment variability/turbidity – quantity, timing); (2) water quantity – peak summer least supply high demand); (3) Dissolved organic carbon – not nitrates in surface water; and if time allows, (4) pesticides
- The Steering Committee would like to be involved with or at least see the questions being developed for the municipal water providers
- Based on the issues of priority that are revealed from the municipal water providers, the Steering Committee and co-PIs will help determine the focus of the review.
- In the final report have a background piece about current forest management as a background and on different ownerships. There could be generalities articulate.
- This is more of a policy construct and not about compliance

## Recap of meeting discussion (in agenda item order)

### Acronyms

DEQ: Oregon Dept. of Environmental Quality

INR: Institute for Natural Resources

OFRI: Oregon Forest Resources Institute

OHA: Oregon Health Authority

OSU: Oregon State University

SC: Steering Committee

SR: Systematic review

TTT: Trees to Tap (Project)

**Jon:** Introduces project, provides background.

**Mike (OFRI):** OFRI board wanted to look into drinking water. Funded a study- factbook-lit review in 2001. Landscape since then has changed, lots of new research, e.g. paired watersheds. Met with OSU forestry to discuss approaches. Jon suggested a systematic review (SR) approach. Ball is now rolling. OFRI wants to communicate FACTS to Oregonians re water and forestry. This is to be primarily a communication piece for the public.

**Jon:** Wanted a steering committee that reflected Oregon. Looking to SC to define scope. Wanted to bring in people involved with drinking water, providers, regulators, etc. Also forest industry reps. Balance of interests. We will also have a website, and also looking at additional ways to involve stakeholders. Looking for input for additional contacts.

**Lisa** Explains INR purpose and role: to link OSU faculty and expertise to decision makers, mainly state politicians and agencies but also federal. Convene groups, science reviews, Oregon Explorer, includes staff at both OSU and Portland office. Neutral clearing house for the TTT project.

**Jon:** Wanted to keep SC to a manageable size. Main project purpose is to update 2000 report, which had two parts: 1) science background, and 2) what is going on with H2O suppliers. [Jon] looked at that report and it seemed that a choice was made- it is pretty broad. We have a similar choice- go broad OR deep. Also, [we should?] include an inventory of water suppliers. OHA & DEQ have worked on that, we'll base our work on that. We also have social scientist on team who will be surveying providers. How do water suppliers see their relationship to their source watershed? What is the range of situations? Some are: community/municipality owns the source watershed, or feds own it, or privately owned. Science review part: need to make some choices RE broad or deep. What is relevant science? Need to also look at temporal scale.

**Brian:** There might be mixed watershed ownerships in some cases. Perhaps look into those more complex situations.

**Jon:** There are also differences in capacity of municipal water suppliers.

**Marganne:** I'm a little bit confused about audiences...

**Brian:** Is this about decision making, or public education?

**Mary:** I'm also unclear on our audience[s], and also on the project's purpose. Is one purpose to lay out a research agenda? Or is to explain what's going on? If it is to illustrate research gaps, we might go about it a different way.

**Jon:** Primary goal is to look at the current state of science knowledge; lay out what we think we know about the effects of forest management on water supply. What are risks associated with particular practices in particular conditions? When you do an SR, data gaps fall out pretty clearly as a secondary byproduct.

**Mike C:** OFRI has evolved in its thinking regarding what "public" means. [Rather than all members of the public, we now target] engaged, focused members of the public.

**Teresa [EPA]:** Are parts 1 & 2 going to go on concurrently? If so, would there be opportunities for iterative question identification?

**Jon:** We did find that we needed to adjust and adapt as we went along with our tide gate project.

**Lisa:** SR can blow up into a time intensive project if we aren't careful. We could also produce a systematic literature map, without digging into it as deeply.

**Jon:** Looking at Gant chart- we're in early stage. Hope to get SR done by Jan 2019. Send Jeff out to do some preliminary searching; report back in mid-March. Lays out rough sketch of lit ID & coarse filter process; steps leading up to scientists doing actual review.

**Mike C:** What is interface between the steering committee and the social scientist's survey? **Jon:** We hadn't anticipated there would be a whole lot but not opposed to reporting periodically to SC.

**Mike C (?)**: I would like to see the survey questions.

**Brian:** [I think that the] surveys will be critical to guide the [lit] review. Will help put research into context of real places, real users.

**Jon:** The survey will be more social science focused- what issues are you facing?

**Mike Cl.** [Are there] political or other issues?

**Jon:** What is your experience? Some people out on coast are pretty vocal about what they want to see in their watershed. [I think we would want to] lean more toward scientific and quantitative issues, rather than political.

**Mary:** Would be giving some standing to water quality providers and what their issues are. Need to respect those. But it would be a missed opportunity to not ask questions about perceived problems and challenges, give color to the situation. It would be interesting to see different responses. We will probably see different answers. I think we should include some questions about issues.

**Lisa:** [Perhaps the survey could have] two components. Maybe get a rough idea about lit, then get some prelim input from surveys to guide the closer focus of the lit review.

**Seth:** [I think we] need to be realistic about how many layers we're able to get to, given our timeframe. Not necessarily against it but [I'm wary whether it's feasible].

**Jon:** I think some of the primary issues will be glaringly obvious. Think we can do both; top down, bottom up. I.e. hear from water providers, but also get going on lit search. Look bottom up from the eyes of the water providers...what are the issues in the watershed and how does forest management fit in that context?

**Josh @ DEQ.** [Via phone line.] Get input from water providers to provide input on issues they are facing with their raw water supplies. Will be qualitative, but can help us ID issues faced by water quality engineers.

**Lisa & Jon:** How should steering committee make decisions & operate? Do we need a SC chair, or should we let Jon et al. guide. **Seth:** What do you want from us? [Do you want to use us as a] sounding board or [do you want us to] make decisions? **Lisa:** Thinking sounding board, but also help guide us. E.g. which questions should we focus on? [**Seth** still looking for clarification.] **Jon:** Weigh in on telling us if it is not feasible. We probably won't be voting, but we do want indications of [your level of] agreement. [SC should serve as a] strong sounding board, we'll try to be flexible. **Mike Cl:** Have SC guide content, have Lisa et al. guide process. **Lisa:** Lays out various scenarios RE wide vs deep.

*[We break for lunch; Jeff gives PowerPoint presentation on systematic review.]*

---

[Jeff's notes continued after his PowerPoint:]

Someone [**Brian?**]: This question is too broad - referring to "straw" question in last PowerPoint slide: "What are the effects of forest management on municipal water supplies from forested watersheds in Oregon?"

**Jon:** We need to focus on water supply for humans. We need to think about scale. **Mary:** We'd need some foundational info on thresholds. We're talking about measurable ecological parameters. We're talking about Oregon. Forested watersheds. Not all drinking water is from forested watersheds.

**Josh DEQ:** Community water systems are sometimes not municipal. Non-transient, non-community e.g. schools, workplaces. Where populations are consuming water every day. Surface or ground? **Jon:** Mostly surface intake.

**Mike CL:** scale is important, in Eugene there are hundreds of forest practices, but also a huge watershed (McKenzie) some other community watersheds are very small.

**Seth:** Important discussion since it defines the geographic scale of what we are looking at. Will also affect the amount of research we can find. [Geology is an important component of suspended sediment, and may have very little to do with adjacent forest management, especially when done in accordance with contemporary practices.](#)

**Mike CL:** We need to look more broadly than that. **Jon:** Should we focus on sediment and turbidity?

**Marganne:** What we hear about most is sediment/turbidity and pesticides/herbicides; then maybe dissolved organics.

**Brian:** Can surface water assessments help?

**Josh:** Yes, but maybe not about what are biggest challenges for treatment. Agrees with Marganne on big issues [i.e. sediment/turbidity and pesticides/herbicides; then maybe dissolved organic carbon]. Some people concerned about fire retardants.

**Brian:** Wonders how big of an issue temperature is.

**Mary:** SC will guide initial list. But relevant lit won't necessarily be focused on these, more on mechanisms. **Jon:** We can't analyze data.

**Brian** agrees. Can we set up a website where people can submit literature for consideration?

**Seth:** Takes issue with use of older research conducted in context of forest practices in place at the time, practices are much different (better) now. **Jon:** Agrees, but there are also legacy roads that are still causing impacts. So it is kind of complicated.

**Cathy:** I look at road density, road placement, location, etc. **Marganne:** There is no definition of a "legacy" road. **Brian:** Well you can still define what practices were in the, say the 1950s.

**Marganne:** You can have new roads that are problematic, and old roads that are fine.

**Mary:** You almost need a background on what are current practices, and lit that comes from different timeframes. Also, study sites on different ownerships. We need a credible, accurate piece regarding what's going on [RE forest practices] now. [From Lisa's notes: there may be generalities we can articulate about current forest practices and different landownerships as a background piece in the report.]

**Jon:** Are people amenable to using current plans for that? We don't get into compliance, right? Can we assume that there is general compliance with these [current forest practices]? [Group generally agrees, yes.]

**Jon:** My perspective is that we are not just updating old report. Might use some of the same references, but we're using new methods. 2000 report was fairly broad, but not too deep. Feels we can go deeper, even with same breadth.

**Cathy:** Advocates for some "straw" review questions, at least taking a stab at some: "Do Oregon forest practice rules concerning stream buffers...sediment/erosion...." [left unfinished].

**Brian** doesn't think questions should be guided by forest practice rules on buffers.

[Not sure how said] Will the source water assessment help define the framing of the science questions?

### Forest Management Practices

#### Road management

- building/maintenance
- use, hauling
- lack of maintenance
- decommissioning

#### Vegetation management

- Harvesting (prescription, pre-commercial thinning, yarding)
- Reforestation (including herbicides, pesticides, fertilization)
- Non-commercial fuel reduction (prescribed fire, mechanical)
- Invasive species

#### Out of scope of the project

- Recreation
- Cows, grazing
- Marijuana

### Parameters

- Standards related to water coming into plants ("raw" water treatment) Clean Water Act
- Turbidity/suspended solids; variability
- Pesticides & other forest chemicals (e.g. fertilizers)
- Dissolved organic carbon (not nitrates in surface water)
- Temperature
- Quantity (peak summer least supply high demand) Perry and Jones work
- Nutrients
- pH
- Wildfire response effects- e.g. pumping, fire suppression retardants
- Climate, ecosystem services

**Brian:** Need whatever we write to at least address climate change effects. Need to include this context. E.g. higher flows, flood events may destabilize sediment more often. **Jon:** Maybe we should have a matrix that shows some of these different effects and how they interact. Also, discuss ecosystem services.

*Perry & Jones paper. Find it.* [Appears to be this one[?]: Perry, T.D., and J.A. Jones. 2016. Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest, USA. *Ecohydrology* 2016:1-13. Also relevant: Fred Swanson & Gordon Grant peak flow work (ten years ago).

### Geographic scope (of project):

Stratify by Oregon ecoregions, forested watersheds. As defined in Forest Practices Act? What is generally accepted? **Josh(?)**: Western US conifer forests generally, then look at west side “wetter” forests, and east side “drier” forests. **Brian:** Need some broad categories. **Jon:** Are we excluding juniper? Definitely exclude Basin & Range. Priority is west of Cascades.

[Not sure who said] Also consider geology. Sediment is going to differ by topography, rainfall, etc. and research done of forest activities and sediment but do we have a good sense about what those relationships are?

**Ashley:** We should start with GIS analysis of where water systems are, what landownership looks like, forest composition- have this on front end.

**Teresa:** Measurement is usually at the base of the [forest] management unit. Not sure how close that is to the water intake. Need to find if there are seminal, foundational studies that we should address or note, as part of framing?

**Brian:** I think we need to look at water treatment technologies that are being applied in Oregon, and what quality they need to work. **Mary:** Likes this because it takes into account variability in capacity and situations in different places (small vs large systems). It is more complicated than just the legal standard. **Jon:** Could also inform decisions about how to invest limited funds to improve community water.

**Geographic scope of literature:** focus on OREGON, but also WA, BC, NorCal, Idaho and Montana. A “deep dive: would go farther out. Include some foundational work, recent likely better. Mid 80s for private, mid 90s for NWFP, 90s for riparian, ~2000s for landslides. “Relevance” will use common sense, at least to a degree, to determine this. [Determine what? Scope of impact?] Hierarchy of consideration: The one in the presentation looked pretty good.

**Marganne:** What is the “baseline” with regard to parameters? Need some kind of mention of this. **Brian:** I think most studies will provide some kind of [ranking?]

Ranking of parameters (importance to stakeholders and public)

1. Turbidity/suspended sediment
2. Quantity (end of summer problem)
3. Dissolved organic carbon
4. Pesticides-forest chemicals