

## **WEST BRANCH LITTLE SPOKANE RIVER WATERSHED COMMITTEE**

Meeting Summary

February 11, 2008

Riverside Fire Station, 3818 E. Deer Park – Milan Rd., Riverside, WA

### ***FINAL***

Bryony Stasney (facilitator) opened the meeting at 6:00 p.m.

**Attendees Present:** Howard Rowley (alternate for Josh Roath and Dick Anderson), Bev Rowley (alternate for Tammera Kirk, Sandra Roath and Lynne Anderson), Jill Short (alternate for Jim Wood and Max Smith), Luke Short (alternate for Pat Wood), John Harkness, Karen Averitt (alternate for Linda Cannon), Gil McGee, Mary Sterling (alternate for Kathleen Werr), Darrell Johnson, Mike Carney (alternate for Mary Harmon, Bill Harmon, Greg Sweeney and Burt Covert), Mike Lithgow, Pam Zarko, Joe Cagianet (alternate for Tom Wimpy), Andrew Huddleston, Brian Farmer, Ken Merrill.

**Introductions:** Everyone introduced themselves. Bryony asked everyone to sign-in to the meeting and to check and edit the information on the sign-in sheet. Bryony introduced herself as the Committee's facilitator. Bryony's contact information is: Bryony Stasney, [bstasney@golder.com](mailto:bstasney@golder.com), 208-676-9933 (office) and 208-755-1010 (cell).

### **Public Comment:**

- Mike Lithgow said that the kick-off meeting for the Pend Oreille County Shoreline Master Program Update went well. On January 16, Pend Oreille County gave a presentation to the eastern Washington Planners Forum. Mike said that he will be giving a presentation to the Committee at the February 25 meeting.
- Howard Rowley discussed the need to remove gravel from the Buck Creek stream channel where Buck Creek flows into Horseshoe Lake to allow fish passage to the lake. Howard said that he will contact the landowner and confirm access. Mike Lithgow said that an HPA will be needed from WDFW and maybe a substantial development permit through Pend Oreille County. The landowner will need to sign the permit applications. Howard said that he will work with Mike Lithgow on this.
- The Terry Hussman grant is open until the end of March 2008 for applications for habitat and water quality implementation projects. There is a limit of \$50,000 per project and a public agency / non-profit sponsor is needed. Application is made through Ecology.
- Luke asked if there are funds available (over and above funds for snow removal) since this area has been designated an emergency area. Brian said that the emergency declaration allows for the use of National Guard to assist with snow removal. Ecology has an FCAP grant for flood prevention activities that can be applied for through public agencies. Information on the FCAP fund is available on Ecology's web site.
- Andy reported that Senator Morton will not request that the Legislature change the funding allocation for the next \$75,000 for the Committee. This means that the funding (which will come through CTED from the state capital fund) is designated for

on-the-ground beaver mitigation projects only. Competitive bidding is not required. The POCD has to voucher for the grant funds. Administration and facilitation is not eligible for funding through this grant. However, administration needs as a line item for a beaver mitigation implementation project would likely be covered by the funding.

- Jill said that she would like Jim Marthaller to be specific on what the County would like to see in an engineer's report to support installation of the 4-ft beaver tubes. Bryony and Andy noted that the \$15,000 in the current grant could be used to support this study and that if the engineer's report supports installation of the 4-ft tubes, the tubes could be installed using the implementation funds that will come through CTED.
- Bryony asked the Committee if they use the project web site (hosted by Spokane County). Committee members said yes and that they download final meeting summaries.

#### **December 10, 2007 Meeting Summary Review:**

The draft December 2007 meeting summary was accepted by the Committee without changes. The final meeting summary will be posted on the web site at <http://www.spokanecounty.org/wqmp/projeszcts/ASP/WestBranch.asp>.

#### **Hydrology, Lakes and Rivers. Presentation by Ken Merrill (Ecology)**

Ken Merrill is a limnologist with Ecology in Spokane. Ken has worked on wastewater discharge permitting and TMDL development. Ken's contact information is: WA Dept of Ecology - WQ Program, 509-329-3515, [kmer461@ecy.wa.gov](mailto:kmer461@ecy.wa.gov).

Ken worked on Eloika Lake in the 1980s. Ken's talk will cover: hydrology of rivers and lakes; lake stratification and how this affects the ecology of lakes; nutrient dynamics; dissolved oxygen; and phosphorus source control. Ken's presentation slides will be posted at <http://www.spokanecounty.org/wqmp/projeszcts/ASP/WestBranch.asp>.

Phosphorus is the limiting nutrient to primary productivity (e.g., algae growth) in most freshwater lakes. Blue-green algae fix nitrogen from the air and can adjust themselves within the water column to make light available.

The greater the watershed area to a lake, the greater the nutrient loading. The West Branch LSR lakes are linked. A good understanding of watershed hydrology will be needed to understand impacts to specific lakes in the West Branch LSR watershed. Diamond Lake likely has a small watershed since it is located in the upper watershed.

Lake stratification is important to the ecology of lakes. Water is at its most dense at 4 degrees C. 4 degrees C is about 38 degrees F. The lakes in the West Branch will turn over twice a year – in the spring and fall. The thermal layers of a lake are: the epilimnion (upper layer); metalimnion (middle layer); and hypolimnion (lower layer). In the summer, the epilimnion will be about 20+ degrees C and the hypolimnion will be as low as 4 degrees C in the deeper lakes. The depth and temperature of the layers

depends on various factors including lake depth, groundwater and surface inflows, air temperatures and wind. Trout like to be in the coldest water that has the most oxygen.

The annual cycle of thermal stratification in lakes includes:

- spring turnover - the surface of the lake warms, all the water is at about 4 degrees C and the water mixes;
- early summer stratification - the top layer of the water warms, resulting in a warm less dense upper layer, a thin thermocline and thick cold hypolimnion;
- late summer - the thermocline deepens as it is pushed downwards by the upper warm layer of water;
- fall turnover - the surface of the lake cools, all the water is at about 4 degrees C and the lake water mixes;
- winter - the surface of the lake freezes and the water below the ice cap is 4 degrees C or less.

The photic zone is the zone in which light is available to support photosynthesis. A high diverse plant community in the photic zone / littoral zone is a sign of a healthy lake. Aquatic plants provide essential habitat to fish and wildlife. Manipulating the plant community in rivers and lakes must be done carefully. 2 / 4- D kills dicots and should break down over a year or so. Casseron is not currently an approved aquatic herbicide; it has been used in the past. Casseron is a granular herbicide that does keep a residue in the system and can affect the system for many years. It is illegal to plant lily pads in lakes. WDFW is the enforcement agency related to this.

**Q:** Why are there few plants along the shore at Sullivan Lake?

**A:** Most likely because the lake is drawn down in the winter which results in freezing and desiccation of the plants.

**Q:** What do you think will be the impacts of having so much snow this year?

**A:** The amount of pollution is the same but there is more water associated with the pollution. So, in fact the pollutants will likely to be more diluted. The biggest issue is likely the City of Spokane combined sewer / stormwater system that results in discharge of raw sewage into the Spokane River during large runoff events. The City of Spokane combined sewer / stormwater overflow will not impact the West Branch LSR.

The seasonal succession of phytoplankton populations includes: diatoms (silica shells) in the spring; green algae in the early summer (that use the phosphorus, die and sink); blue-green algae in the late summer; and diatoms again in the late fall and early winter. These populations use carbon dioxide and give off oxygen.

It is important not to drink water from rivers and lakes since some phytoplankton populations may cause chronic health problems due to their toxicity. Blue-green algae are believed to have resulted in a number of dog deaths in recent years in the potholes reservoir near Moses Lake. Excess phosphorus is a cause of blue-green algae blooms.

The phosphorus cycle includes: input of phosphorus to lakes from e.g., stream inflows, surface run off, sewage (primarily bioavailable P<sub>03</sub>) and aerial deposition; use of phosphorus by fish, bacteria and plants within the water column; decay of plant and animal matter that may result in release of phosphorus into sediments and into the water column from sediments in anoxic conditions. In an oligotrophic lake (e.g., Priest Lake and Pend Oreille Lake), most of the phosphorus is bound in the sediment and there is only a thin anoxic zone at the bottom of the lake. In eutrophic lakes (i.e., high productivity lakes such as the West Branch LSR lakes), release of nitrogen and phosphorus can occur from the anoxic zone (i.e., the low oxygen zone at the bottom of the lake). With increasing productivity caused by increased loading of phosphorus to the lakes, plants proliferate and die off can result in creation of more extensive low oxygen conditions at the bottom of the lake that in turn results in release of phosphorus from the sediments into the water column. This is why it is particularly important to minimize phosphorus inputs to the West Branch LSR lakes.

Ken showed a series of bathymetric maps from the mid to late 1950s for West Branch LSR lakes, including Diamond, Sacheen, Trout, Horseshoe and Eloika Lakes (see Ken's slides at <http://www.spokanecounty.org/wqmp/projeszcts/ASP/WestBranch.asp>). It is important to understand how water moves through these lakes to understand nutrient loading. For example, bank storage can be important – during high water, water moves from the lakes into the shallow groundwater along the shore and then may return into the lake as the water level in the lake declines. Also, residence time of water in the lake depends on how the lake is stratified and the temperature of the inflow water. Ken noted that the West Branch chain of lakes and rivers is an amazing and diverse system.

Important components of phosphorus source control include:

- Management of watershed activities to minimize phosphorus inputs.
- Road design and maintenance – to minimize sediment input to lakes and rivers.
- Elimination of septic systems near lakes - even well designed systems result in phosphorus migration to lakes when the ground is saturated. Even septic systems 500 feet from the lake may not be sustainable in the long term.
- Landscaping is also important – letting bullrushes, cattails and shrubs grow along at least a portion of the shoreline can help with wake erosion. Using fertilizers without phosphorus should be considered.

**Q:** It seems that the water in Sacheen Lake is dark. Is this the result of tannins? The eastern portion of the lake has a very thick sediment layer.

**A:** The dark water may be naturally occurring tannins in the water related to peat bogs. The sediments in the eastern portion of the lake may be naturally occurring glacial deposits.

The Committee thanked Ken for his presentation.

**Draft Action Table Review and Project Priorities for 2008:**

Bryony made sure everyone had copies of the 18 page handout of the draft WB LSR Action Table (dated 012808). To keep the meeting on time, Bryony suggested that the Committee work tonight to identify possible projects for implementation with the \$75,000 available for beaver mitigation projects.

The possible projects discussed by the Committee are listed below (the \*\*\* and highlighted projects are those that appear to be most feasible based on available funding and Committee support at this meeting). Andy said that he would contact the CTED representative to confirm project eligibility for funding.

- **\*\*Streamflow gaging and seepage runs (WB.SW2-2)** to collect data to better understand the hydrology of the West Branch LSR system. The Spokane County Conservation District can provide costs for gaging. The group agreed that there is also a need to evaluate the existing gages and data, conduct a gap analysis, identify additional gage sites, consider climate stations and determine how this data will be used (e.g., to populate a hydrologic model).
- **Installation of a water control structure at Sacheen Lake (WB.SW3-2).** The group agreed that this would be very expensive and could not be funded with \$75,000.
- **Removal of the fish barrier dam at Harworth (WB.SW3-2).** As currently constructed and with the boards and gates removed, it is a dam with a weir and has an elevation change of 16 to 20-inches. This is a good stream flow measurement point. The elevation of the dam does not affect the elevation of Sacheen Lake.
- **Sediment and vegetation removal from the stream channel between Fertile Valley Road and Harworth (WB.SW3-4).** The most likely area for removals would be between Dam nos. 2 and 3 where the water in the channel is now shallow. Also, the channel below Dam no. 3 could be considered for sediment removal. The group agreed that this could be very expensive but that it could be feasible to remove sediment / vegetation in a small area. It may not be possible to drive heavy equipment to this site. Sediment could potentially be removed by dredging.
- **\*\*Bank restoration / stabilization projects related to flooding (WB.WQ11-3 and WB.WQ12-3).** The Committee did not have specific stream / lake shore reaches for projects. Cost share projects (connected to mitigation of flooding and erosion connected to beavers) could be considered by the Committee. The Committee considered constructing demonstration site(s) (including plantings and bioengineering). Jill said that she will communicate with a Sacheen Lake homeowner to see if they would be interested in using a community area. Brian said that Ecology would support this type of project. Andy noted that the POCD also has a grant for stream restoration and is communicating with Sacheen Lake homeowners about potential projects – so that there may be an opportunity to combine funds.
- **\*\*Installation and maintenance of beaver tubes (WB.WQ12-4) and debris clean-up / removal (WB.WQ12-5).** The County has requested an engineering

study / work plan to support installation of the 4-foot tubes at Sacheen Lake. The Sacheen Lake Sewer District will be writing a letter to the County requesting direction for the study / plan. The Committee hopes that the County and Sewer District can provide an update at the February 25 meeting. The Committee agreed to consider various design options for the tubes to minimize maintenance needs caused by floating debris clogging the tubes.

- **Property purchase for conservation (WB.G&LU2-2).** There is a 15-acre piece for sale for about \$150,000.
- **\*\*Gift baskets with good products – to give away as gifts at Lake / River Assoc. meetings (WB.WQ14-2 and WB.ED1-4).** The purpose of these gift baskets would be to reach out to others in the watershed and to educate landowners about good practices such as water conservation and minimizing phosphorus inputs to surface water bodies. Andy said that he will check to see if the POCD has funding for educational outreach that could be used for purchase of gift baskets. A Committee member would attend the Assoc. meeting to give away the gift basket and explain the various products.

#### **Public Comment:**

- John noted that the Diamond Lake Assoc. will be talking about the beaver issue at Diamond Lake their meeting on February 12.
- Karen noted that there is a bill in the legislature to support managers for watersheds across the state. Karen said that she would pass information on to Bryony to email out to the Committee.
- The Committee agreed that they would like to continue having facilitated meetings and discussed the possibility of using the remaining funds in the current grant to cover meeting facilitation until the Committee can find other funding sources.

#### **Membership:**

The Committee made no membership changes.

#### **Next Meeting (agenda, tasks and announcements):**

The next Committee meeting will be at the Riverside Fire Station, 3818 E. Deer Park – Milan Road, Riverside, WA at **6 – 8:30 pm** on Monday February 25, 2008. Bryony will bring coffee for the next meeting. The meeting will include:

- A presentation from Mike Lithgow (Pend Oreille County) on the Pend Oreille County Shoreline Master Program Update.
- Continued work on prioritization of implementation projects and the draft action table.

Additional ideas for workshops / educational presentations:

- Work Plans and Quality Assurance Project Plans (QAPPs).
- Hydrology of the WB LSR watershed by the Spokane County Conservation District (based on review of the gaging completed to date by the Spokane County Conservation District).
- DNR presentation on forest practice regulations and lake sediment studies.

- Ecology / Spokane County Conservation District presentation on WB LSR water quality impairment and TMDLs.
- WDFW on WB LSR wildlife habitats and Corridors (contact Jeff Lawlor / Steve Zender)

**Adjourn:**

- Bryony adjourned the meeting at 8:45 pm.
- Digital recording files for this meeting will be mailed to the POCD. Digital recording files of this meeting are:
  - WBLSR Committee 021108.wav