

**Water flow processes; Habitats & species (Updated after September 2017 board meeting)**

The Bertrand WID's plans and actions help to protect and enhance water flow processes and fish and wildlife habitats in the Bertrand and lower Fishtrap watersheds

Goal statement:  
Water flow processes (surface storage, discharge, recharge, delivery) are enhanced or protected as necessary in areas that are important for the watershed (see Figures 14 and 15 in the WID mapping report; also included in Appendix C of this document).

Progress could be measured by:

Some options for measuring progress:

- Status of water flow process degradation (H, MH, M, L) in assessment units within the Bertrand WID area (see Fig 14 in Appendix C).
- % effective shade cover along fish-bearing streams and ditches.
- Acres of wetland or wildlife habitat enhanced, restored and/or protected
- Stream length made accessible through removal of fish barriers

Recently completed or ongoing:

- i. Continued work on the Flow Augmentation Project, exploring how to manage water on agricultural lands in the Bertrand watershed in ways that would help to increase instream surface water flows.
  - a. Tested feasibility of augmenting surface streamflow with pumped groundwater (installed & monitored pilot pump & discharge system).
  - b. Assessed potential surface water storage sites in the Bertrand watershed (reconnaissance report issued 2007)
- ii. Watershed assessment for the Ag-Watershed Project (Jan 2016): identified priority areas where water flow processes – especially storage and discharge - could be enhanced through wetlands, ground water recharge and planting of riparian vegetation (see watershed characterization tables in Appendix B of this document).
- iii. De Boer culvert replaced in partnership with DD#4 (9/16), two additional culvert replacement projects completed.

Priority actions for management plan:

- iv. Review possible actions to enhance or protect water flow processes in specific locations within the Bertrand WID area, as listed in the watershed characterization tables prepared during the WID work session in January 2016 (see tables in Appendix B of this document).\*
  - Suggested actions in specific parts of the WID include, for example, enhancing surface water storage, reducing or preventing additional impervious cover, protecting and/or restoring riparian and forest cover, reducing subsurface drainage rates.
- v. Proactively identify locations for mitigation sites and mitigation actions (e.g. culvert replacement, riparian vegetation) to be addressed in programmatic 5-year drainage permits, that could also contribute to advancing watershed & habitat priorities (see watershed enhancement tables in Appendix B) \*
- vi. Coordinate with the Whatcom Conservation District to find more funding for areas where landowners are interested in replacing culverts on private land, to remove fish passage barriers (12/2015)

\* denotes actions that may need additional resources & more detailed scope & description