

What are the conditions in the McLane Creek Sub-watershed?

Current conditions

Approximately two percent of the McLane Creek Sub-watershed is covered by urban land uses (see Figure 31 and 31a, Classification Percent Totals for McLane Creek Sub-watershed).

McLane Creek basin has a drainage area of 11.7 square miles.

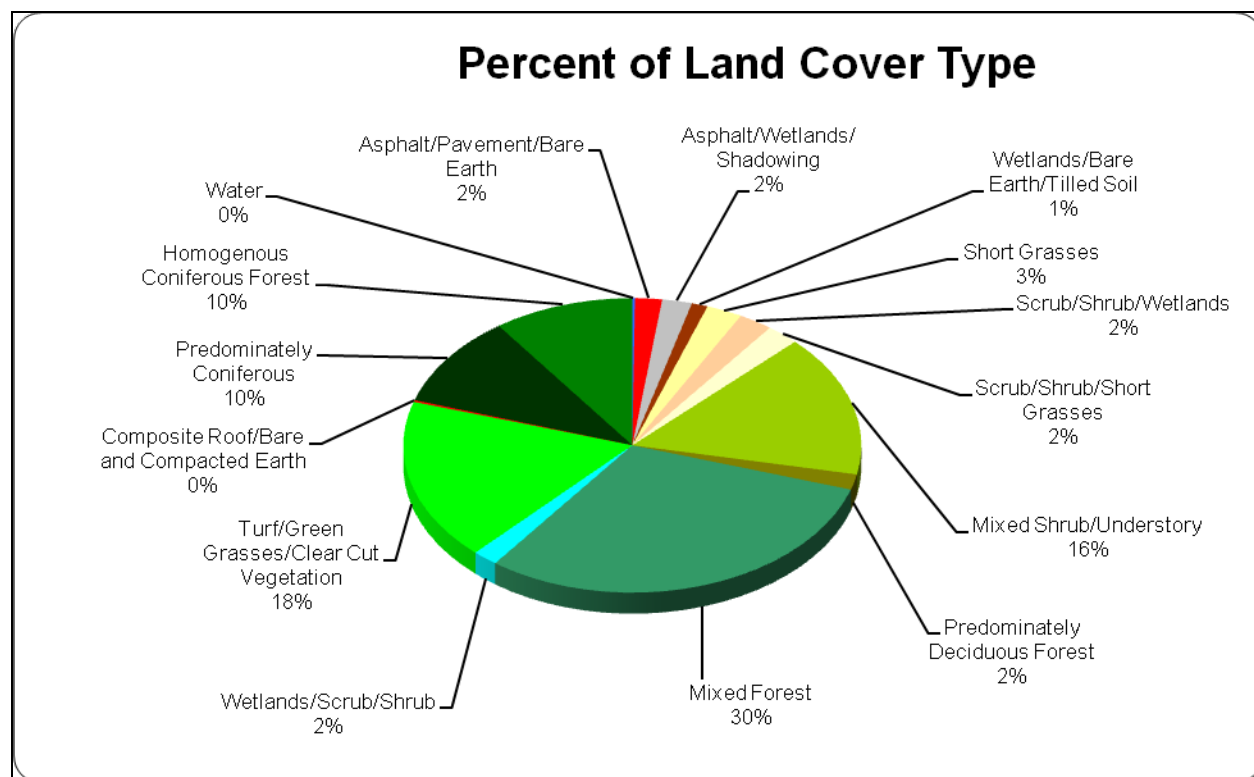


Figure 31a. Classification Percent Totals for McLane Creek Sub-watershed

Land cover data from 2005 SPOT imagery.

Human alteration to the movement of water

The effects of human land use on the natural delivery of water to the McLane Creek and its tributaries in the McLane Creek Sub-watershed were characterized using the following landscape attributes: percent TIA, percent forest land, and percent wetland cover at the DAU scale. Results indicate that the McLane Creek Sub-watershed is in an “at risk” condition for the delivery of water, with four DAUs “properly functioning.”

Human alteration to the natural movement of sediment

The effects of human land use on the natural delivery of sediment to the McLane Creek and its tributaries in the Kennedy Creek Sub-watershed were characterized using the following

landscape attributes: percent bare soils, road density, and percent unstable slopes at the DAU scale. However, because there are no forestry activities or unstable slopes in the sub-watershed, road density was the only applicable indicator. The result was an “at risk” and “properly functioning.”

Human alteration to the natural movement of large wood

The effects of human land use on the natural delivery and routing of large wood in the McLane Creek and its tributaries were characterized using the following landscape attributes: percent forested riparian and average number of stream crossings per kilometer of stream at the DAU scale. Results indicate that the McLane Creek Sub-watershed is primarily in a “not properly functioning” and “at risk” condition for the delivery and routing of large wood.

Human alteration to the natural movement of pollutants

The effects of human land use on the natural delivery and routing of pollutants in the McLane Creek and its tributaries were characterized using the following landscape attributes: Extent of 303(d) listed water bodies for nutrients, toxicants, and bacteria and condition and extent of wetlands at the DAU scale. Only five DAUs had data to rank pollutants. Results indicate that the McLane Creek Sub-watershed is in an “at risk” condition for the delivery and routing of pollutants.

Human alteration to the natural movement of heat

The effects of human land use on the natural delivery and routing of heat in the McLane Creek tributaries were characterized using the following landscape attributes: Extent of 303(d) listed water bodies for nutrients, toxicants, and bacteria, percent 67 meter riparian zone with mature canopy, road density, and percent TIA at the DAU scale. Results indicate that the McLane Creek Sub-watershed is primarily in an “at risk” condition for the delivery and routing of large wood. The exception is one DAU that are conditioned to be in “not properly functioning condition and one DAU that is “properly functioning.”

Aquatic integrity

The effects of human land use on aquatic integrity in the McLane Creek and its tributaries in the McLane Creek Sub-watershed were characterized using the following landscape attributes: percent riparian forest, percent TIA, and available B-IBI scores at the DAU scale. Results indicate that the McLane Creek Sub-watershed is in an “at risk” condition for aquatic integrity, with one DAU “properly functioning.”

Habitat Connectivity

Forest covers forty-two percent of the McLane Creek Sub-watershed. Most of the forest is in rural residential areas and the sub-watershed’s primary land cover is composed of commercial and long-term forestry. The McLane Creek Sub-watershed is considered “not properly

functioning” and “at risk”, with only one DAU considered “properly functioning” for habitat connectivity.

Ecological Benefit

All DAUs within the study area having ecological and biological processes that are considered “at risk” under current land use conditions were identified for further consideration. DAUs in the “at risk” category for multiple key ecological and biological processes are assumed to provide the greatest potential to maximize environmental benefits when restored. The process scores are then ranked according to the weight criteria, and converted to a high, medium, or low process rank. McLane Creek has primarily high and moderate ecological benefit, with only two DAUs ranked as low (Figure 32. McLane Creek Sub-watershed Weighted Processes).

Environmental Benefit

Once all the DAUs were ranked for their ecological benefit, all natural resource sites were ranked for their environmental benefit. Only the high and medium scoring sites were used in further evaluation to develop natural resource, fish habitat, and stormwater preservation and restoration sites.

Table 11. McLane Creek Environmental Benefit Ranking of Natural Resource Sites

McLane Creek Potential Restoration Sites				
Rank	Wetland	Riparian	Floodplain	Total
High	4	0	0	4
Medium	7	26	0	33
Low	27	25	6	58

The following wetlands, riparian and floodplain sections describe the environmental benefit ranking of the natural resource sites.

Wetlands

Prior to human alteration, wetlands in the McLane Creek Sub-watershed totaled approximately 772 acres. We estimate that approximately 430 acres are currently wetlands or degraded/destroyed wetlands with some restoration potential. (Figure 33. McLane Creek Sub-Watershed Resource Sites).

Riparian condition

Development has encroached on approximately 591 acres of the 67-meter wide riparian corridors in the McLane Creek basin. Of the 2135 acres, approximately 591 acres have some restoration potential (Figure 33. McLane Creek Sub-Watershed Resource Sites).

Floodplain Condition

The floodplain condition of McLane Creek is relatively intact with little to no restoration potential (Figure 33. McLane Creek Sub-Watershed Resource Sites).

Natural Resource Sites

All potential natural resource sites were evaluated for their environmental benefit and ranked high, medium, or low. Following evaluation, a total of 37 sites were of high or medium environmental benefit (Figure 34. McLane Creek Ecological Processes and Resource Site Scoring).

Fish Habitat

There were 51 riparian sites evaluated for habitat value to salmonid fish species. These sites were then used to evaluate potential natural resource sites that have the potential to be stormwater retrofits sites. While the goal is to use natural resource sites as stormwater retrofit sites, we don't want to compromise high quality fish habitat sites.

Stormwater Retrofit

All the natural resource sites were evaluated for stormwater retrofit sites (Figure 35. McLane Creek Potential Stormwater Restoration Sites).

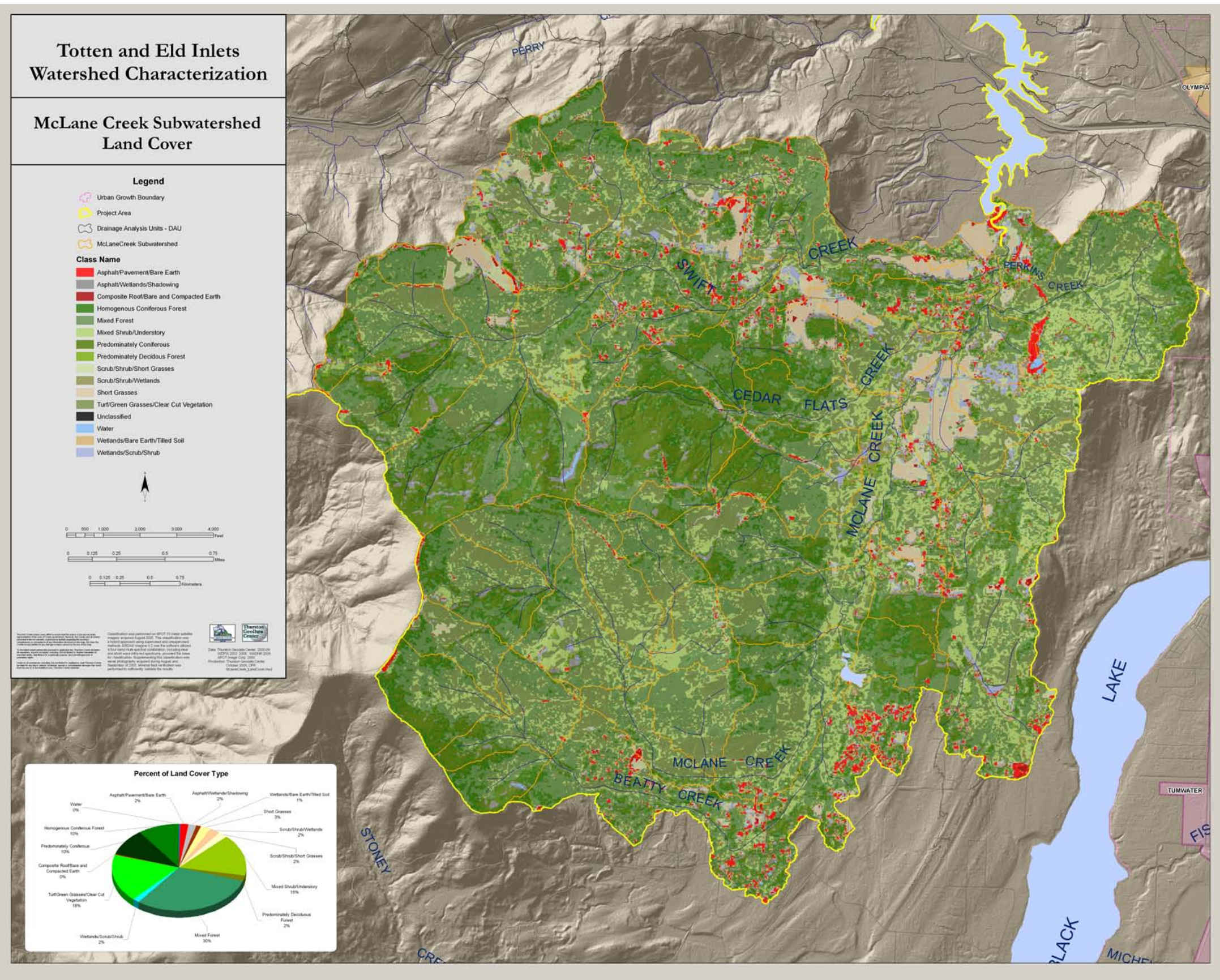


Figure 31 McLane Creek Sub-watershed Land Cover

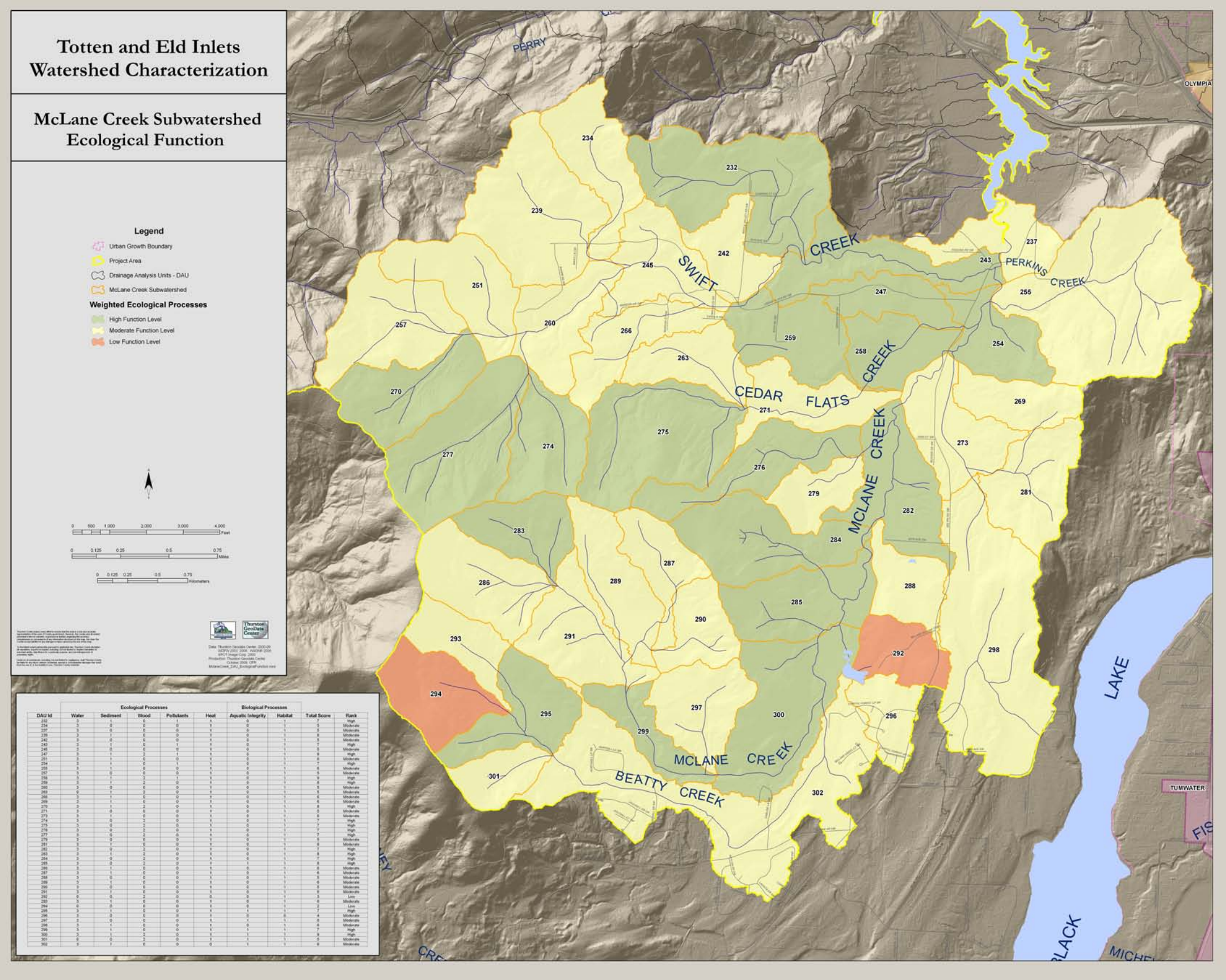


Figure 32 McLane Creek Sub-watershed Weighted Processes

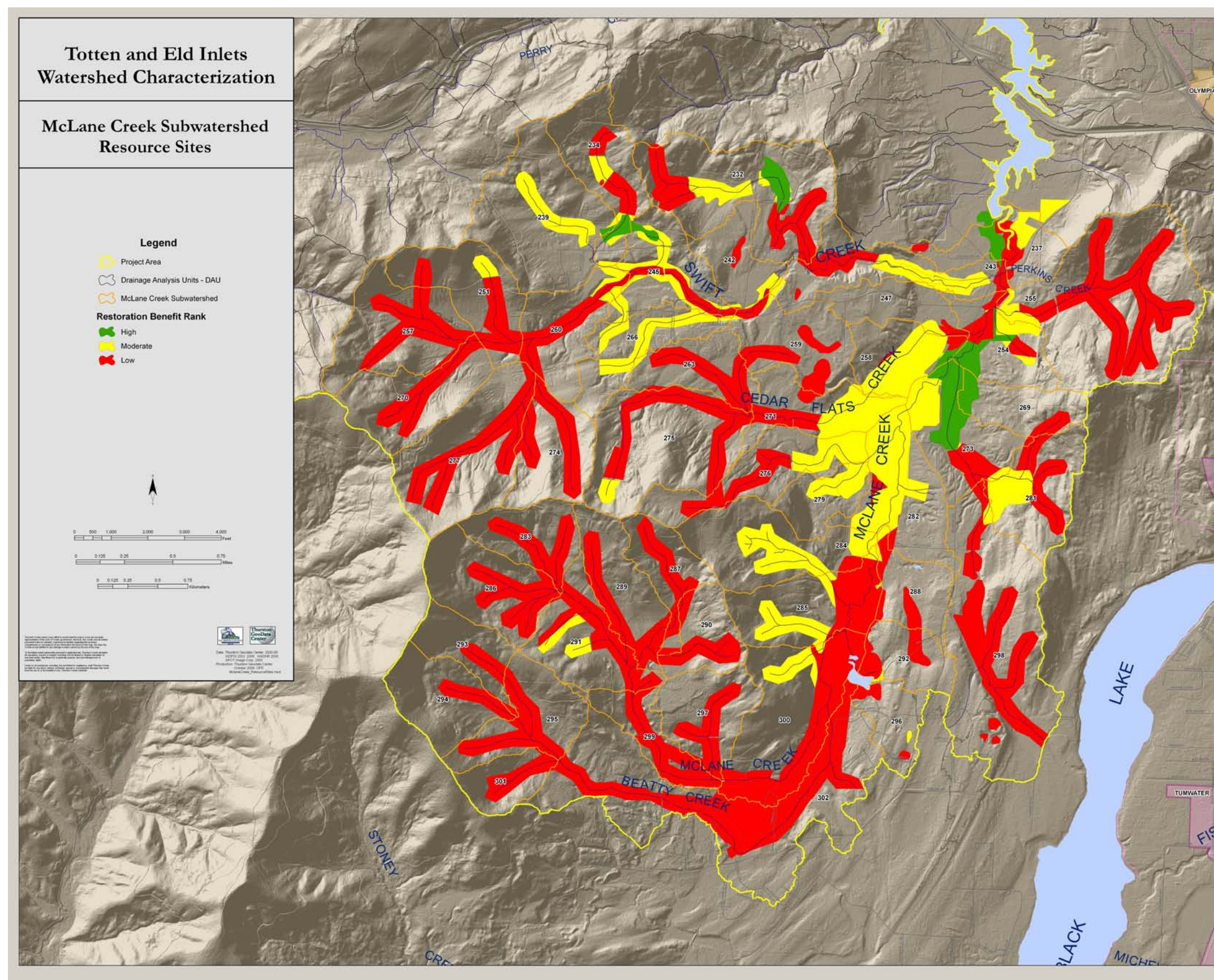


Figure 33 McLane Creek Sub-watershed Resource Sites

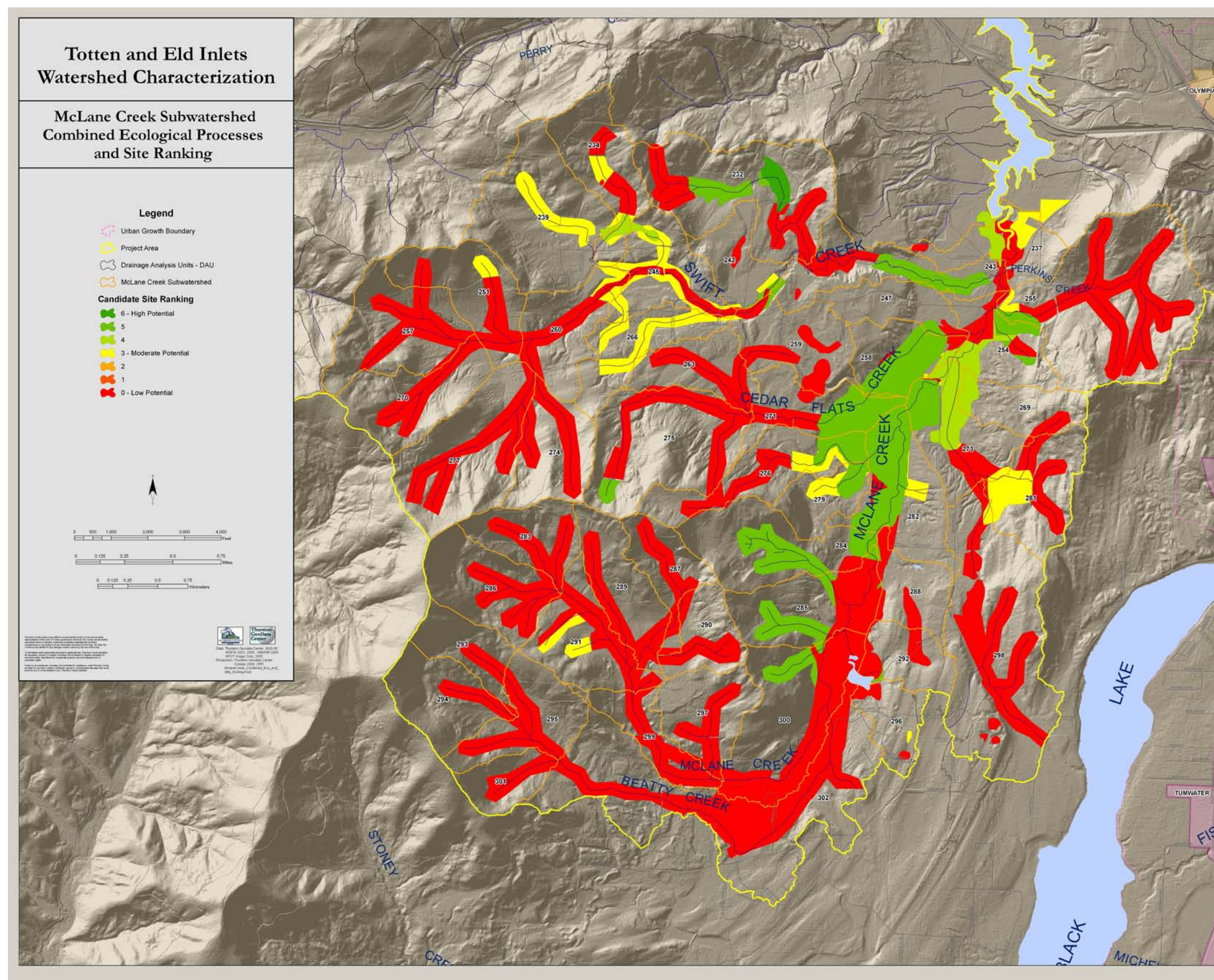


Figure 34 McLane Creek Sub-watershed Ecological Processes and Resource Site Scoring

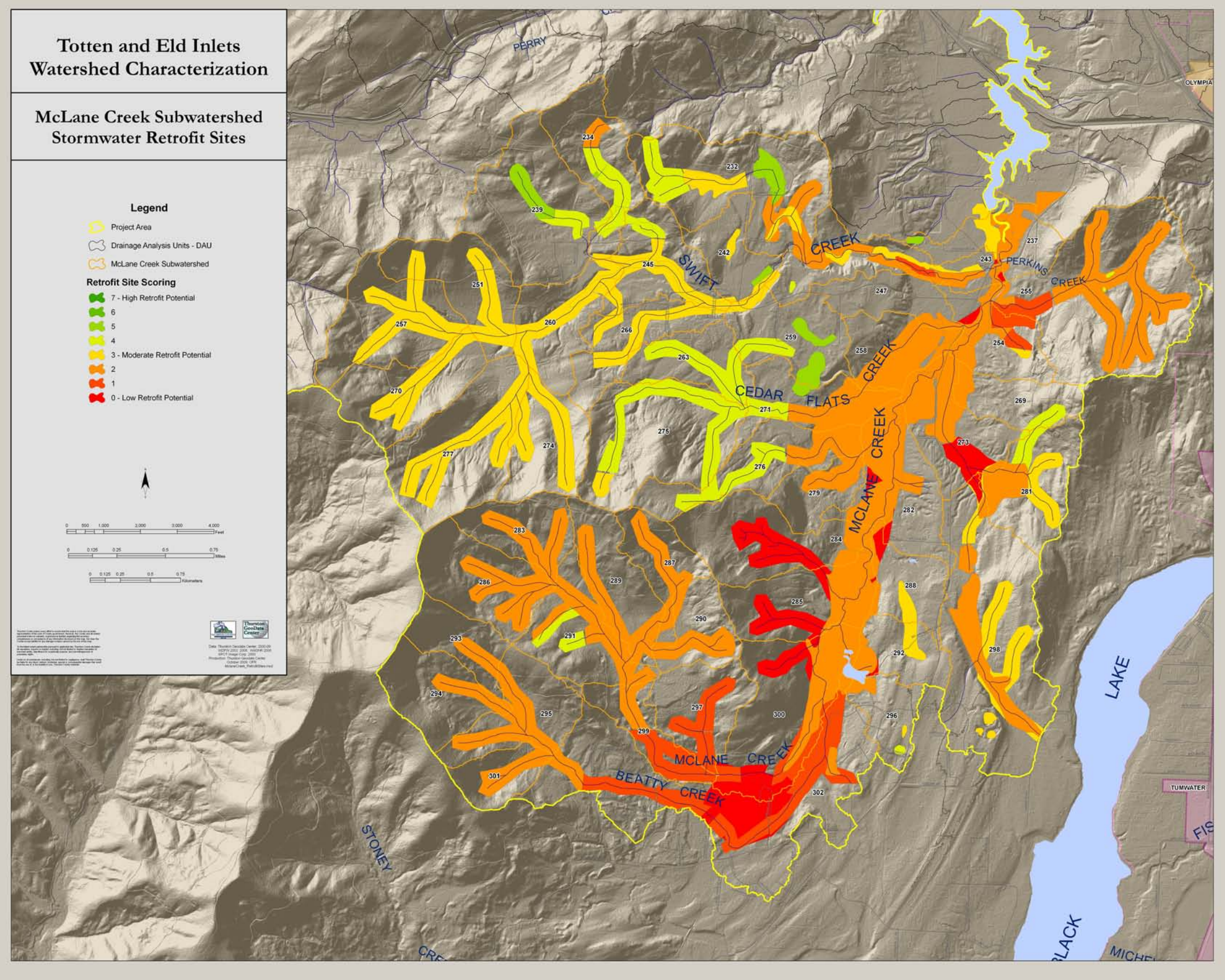


Figure 35 McLane Creek Sub-watershed Retrofit Sites