

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

Current conditions

Approximately two percent of the Kennedy Creek Sub-watershed is covered by urban land uses (see Figure 6 and 6a, Classification Percent Totals for Kennedy Creek Sub-watershed). Kennedy Creek basin has a drainage area of 17.76 square miles.

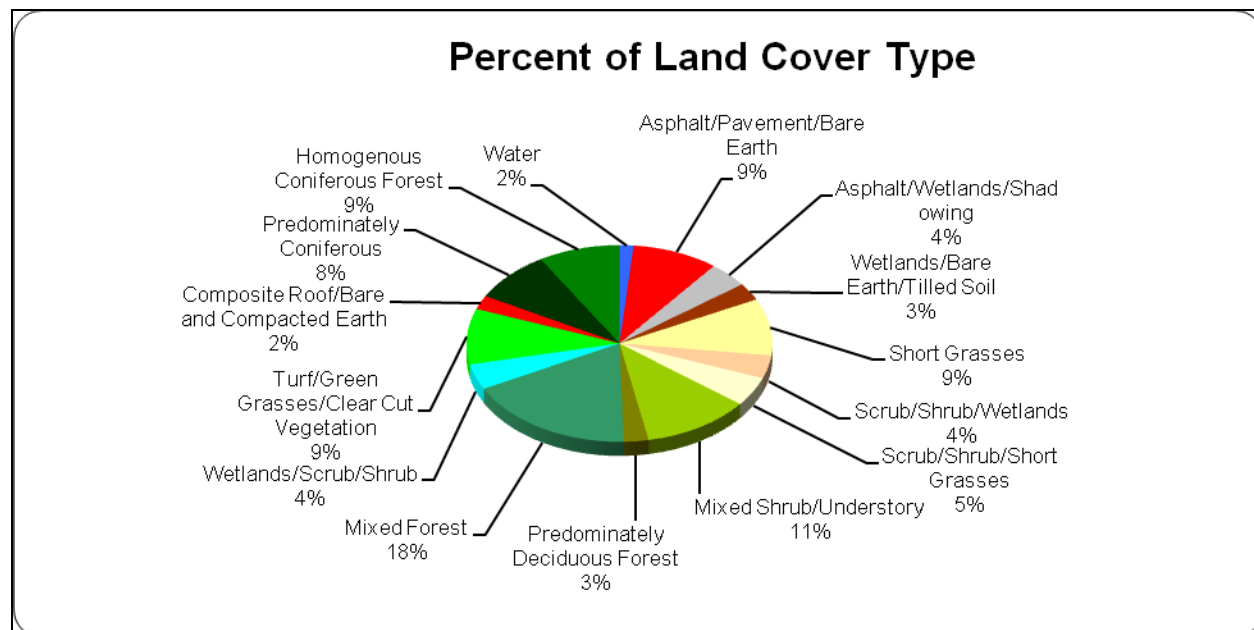


Figure 6a. Classification Percent Totals for Kennedy Creek Sub-watershed

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 Kennedy Creek and its tributaries in the Kennedy 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 Kennedy Creek Sub-watershed is in an “at risk” condition for the delivery of water, with three of 75 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 Kennedy 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. Results indicate that the Kennedy Creek Sub-watershed is in an “at risk” and “properly

functioning condition for the delivery of sediment, with approximately two-thirds of the 75 DAUs “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 Kennedy 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 Kennedy Creek Sub-watershed is primarily in a “not properly functioning” and “at risk” condition for the delivery and routing of wood. The exception includes one DAU that is “properly functioning.”

Human alteration to the natural movement of pollutants

The effects of human land use on the natural delivery and routing of pollutants in the Kennedy 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. Pollutants were not ranked based on the lack of data, thus a N/A.

Human alteration to the natural movement of heat

The effects of human land use on the natural delivery and routing of heat in the Kennedy Creek and its 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 Kennedy Creek Sub-watershed is primarily in an “at risk” condition for the delivery and routing of heat. The exception is two DAUs that are conditioned to be in “not properly functioning, and one DAU that is “properly functioning.”

Aquatic integrity

The effects of human land use on aquatic integrity in the Kennedy Creek and its tributaries in the Kennedy Creek Sub-watershed were characterized using the following landscape attributes: percent riparian forest, percent TIA, and available B-IBI scores at the DAU scale. Aquatic integrity was not ranked based on the lack of data, thus a N/A.

Habitat Connectivity

Forest covers 55 percent of the Kennedy Creek Sub-watershed, concentrated in the south west 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 Kennedy Creek Sub-watershed is considered “at risk” with only two DAUs 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. Kennedy Creek has 75 DAUs, with only three DAUs ranked as low, thus no restoration potential (Figure 7. Kennedy 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 6. Kennedy Creek Environmental Benefit Ranking of Natural Resource Sites

Kennedy Creek Potential Restoration Sites				
Rank	Wetland	Riparian	Floodplain	Total
High	4	3	NA	7
Medium	7	20	NA	27
Low	17	50	NA	67

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 Kennedy Creek Sub-watershed totaled approximately 1086 acres. It is estimated that approximately 825 acres of the sub-watershed, are currently wetlands or degraded/destroyed wetlands with some restoration potential. (Figure 8. Kennedy Creek Sub-Watershed Resource Sites).

Riparian condition

Forest harvesting and agricultural activities have encroached on approximately 522 acres of the 67-meter wide riparian corridors in the Kennedy Creek basin. Of the 3510 acres, approximately 522 acres have some restoration potential (Figure 8. Kennedy Creek Sub-Watershed Resource Sites).

Floodplain Condition

There is no regulated floodplain in the Kennedy Creek sub-watershed.

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 34 sites were of high or medium environmental benefit and ranked within the corresponding DAU (Figure 9. Kennedy Creek Ecological Processes and Resource Site Scoring).

Fish Habitat

There were 23 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, the goal is not to compromise high quality fish habitat sites.

Stormwater Retrofit

All the natural resource sites were evaluated for stormwater retrofit sites (Figure 10. Kennedy Creek Potential Stormwater Restoration Sites).

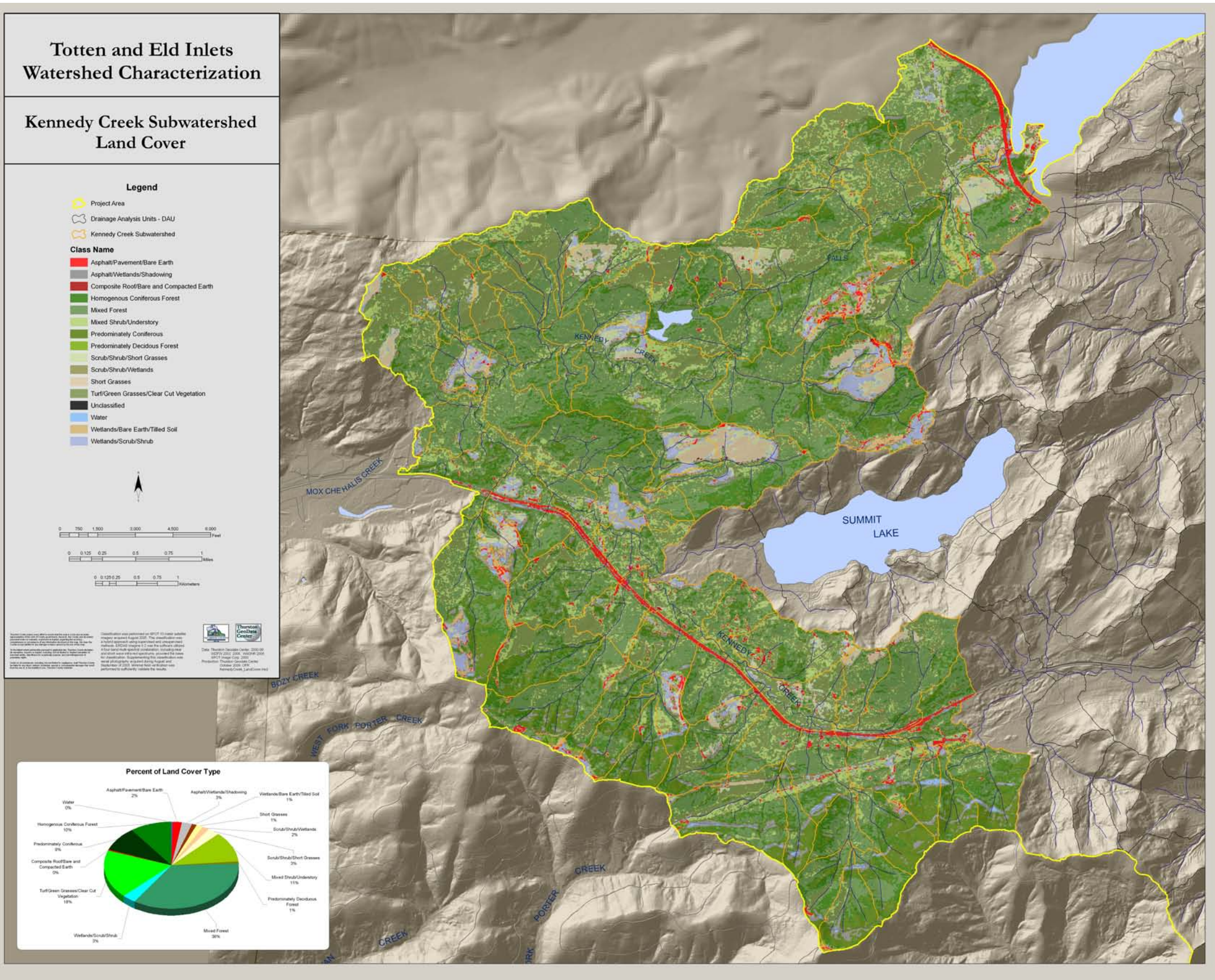


Figure 6 Kennedy Creek Sub-watershed Land Cover

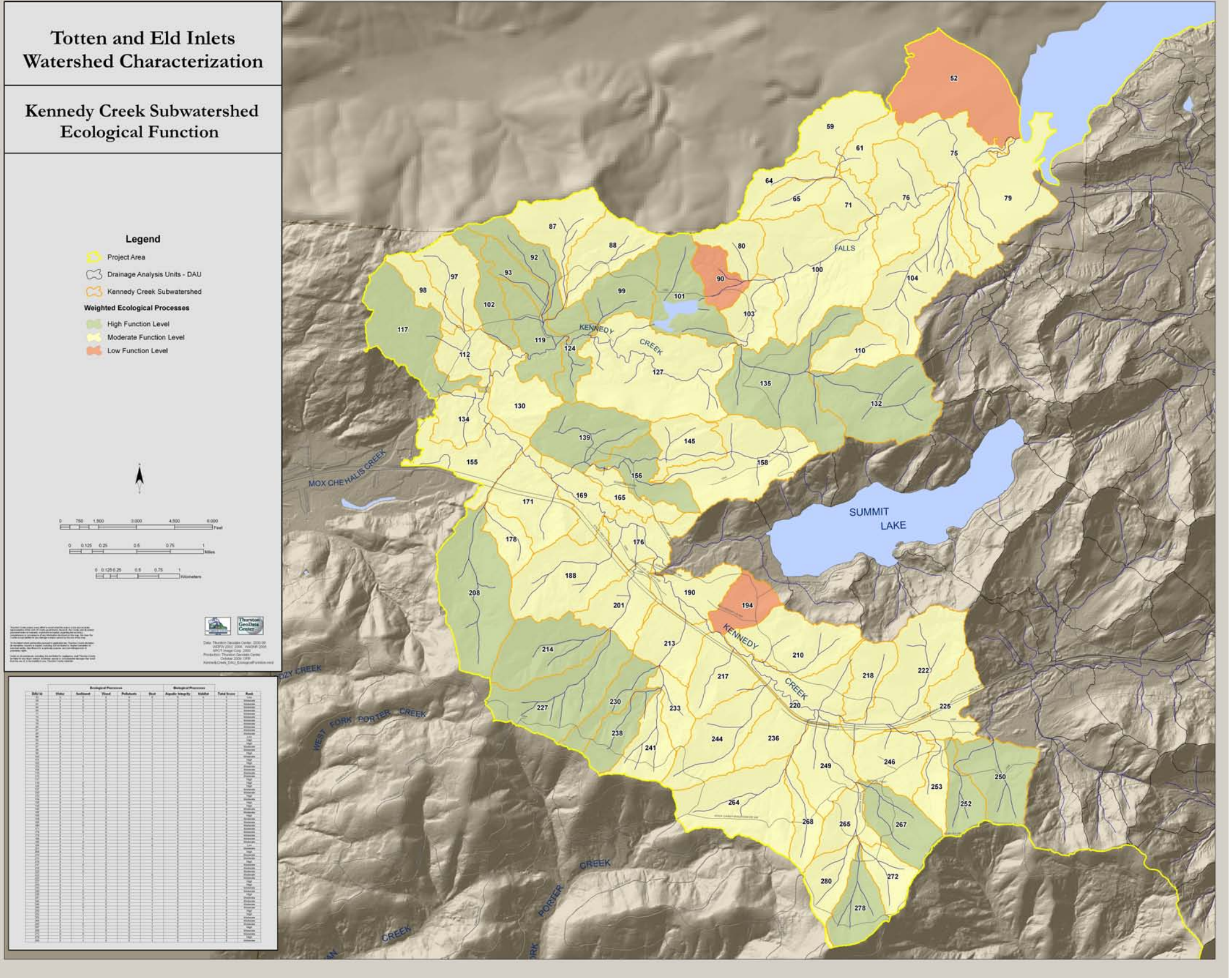


Figure 7 Kennedy Creek Sub-watershed Weighted Processes

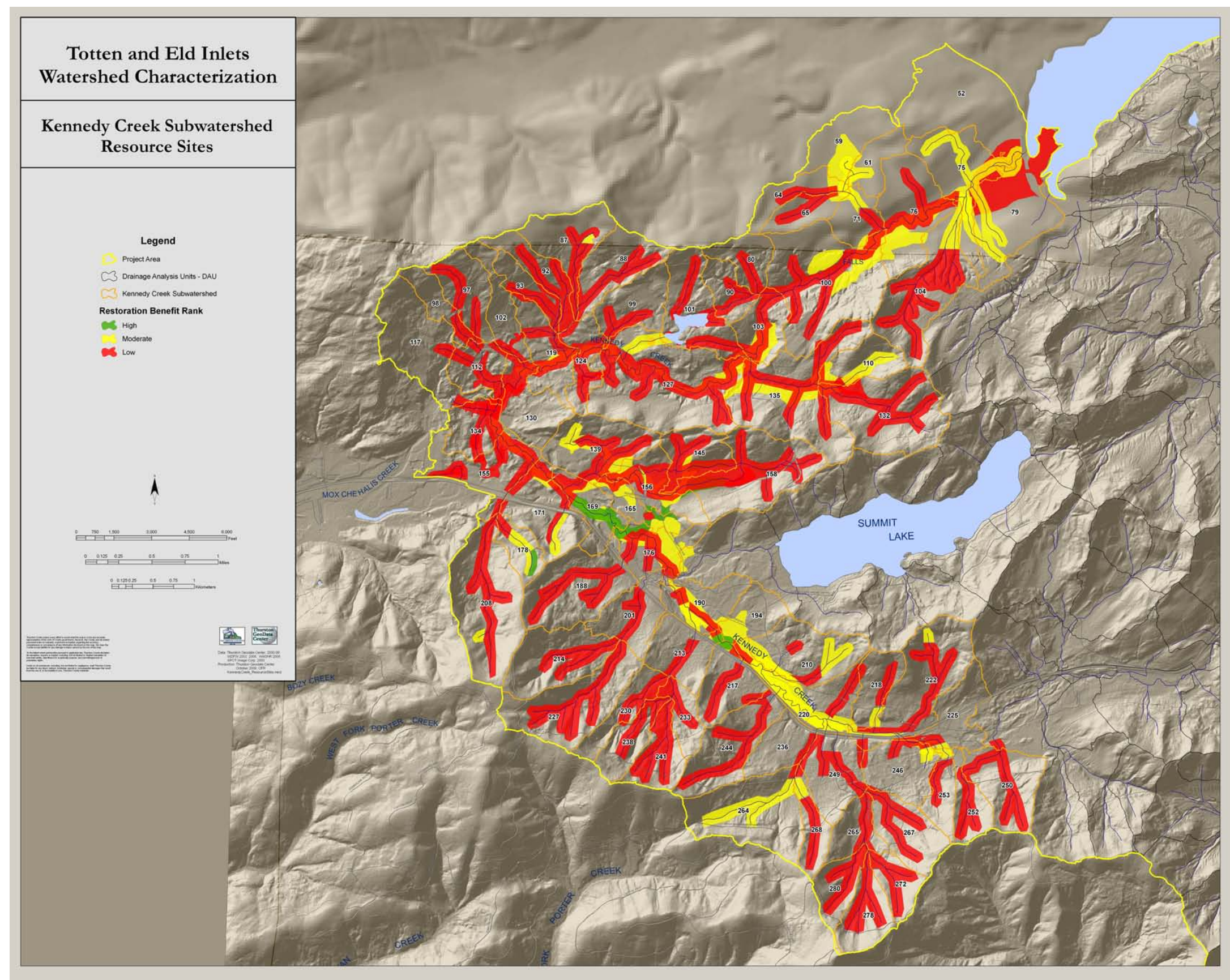


Figure 8 Kennedy Creek Sub-watershed Resource Sites

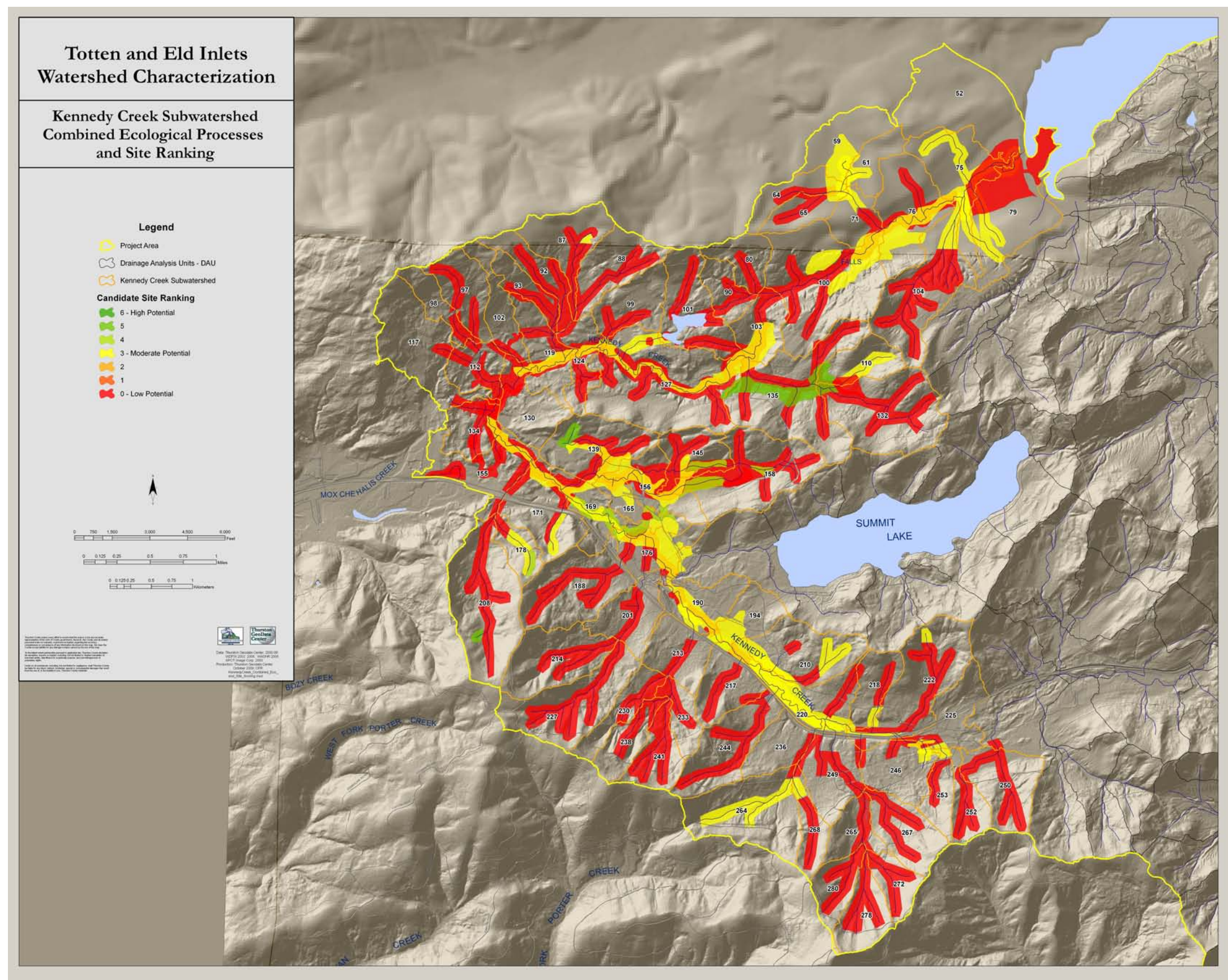


Figure 9 Kennedy Creek Sub-watershed Ecological Processes and Site Scoring

