What are the conditions in the South Eld Sub-watershed?

Current conditions

Approximately five percent of the South Eld Sub-watershed is covered by urban land uses (see Figure 41 and 41a, Classification Percent Totals for South Eld Sub-watershed). South Eld has a drainage area of 2.3 square miles.

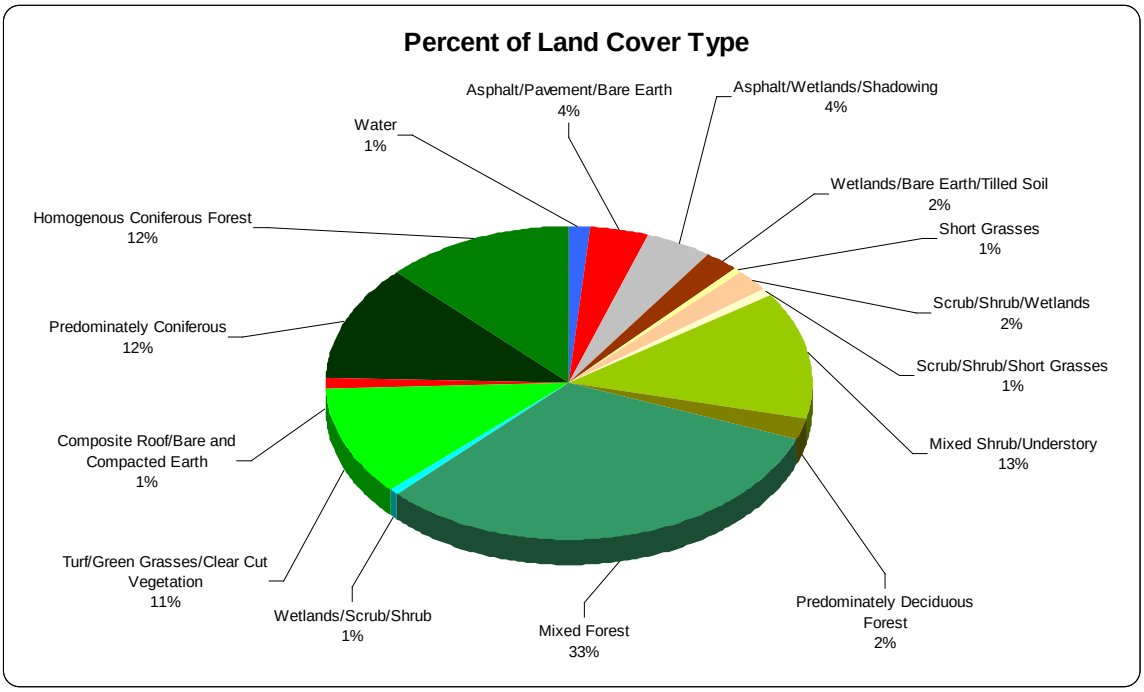


Figure 41a. Classification Percent Totals for South Eld Sub-watershed

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 South Eld and its tributaries in the South Eld 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 South Eld Sub-watershed is in "at risk" condition, with the exception of one "properly functioning" DAU for the delivery of water.

Human alteration to the natural movement of sediment

The effects of human land use on the natural delivery of sediment to the South Eld 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 is a “properly functioning” condition, with one DAU “at risk” for sediment.

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 South Eld 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 South Eld Sub-watershed is primarily in a "not properly functioning" and an “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 South Eld 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. There is no data to rank 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 South Eld 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 South Eld Sub-watershed is primarily in an “at risk” condition for the delivery and routing of heat.

Aquatic integrity

The effects of human land use on aquatic integrity in the South Eld and its tributaries in the South Eld Sub-watershed were characterized using the following landscape attributes: percent riparian forest, percent TIA, and available B-IBI scores at the DAU scale. There is no data to rank aquatic integrity.

Habitat Connectivity

Forest covers fifty-eight percent of the South Eld 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 South Eld Sub-watershed is considered "at risk" and "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. South Eld has primarily high and moderate ecological benefit, with only three DAUs ranked as low (Figure 42. South Eld 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 13. South Eld Environmental Benefit Ranking of Natural Resource Sites

South Eld Potential Restoration Sites				
Rank	Wetland	Riparian	Floodplain	Total
High	1	0	NA	1
Medium	0	4	NA	4
Low	10	7	NA	17

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 South Eld Sub-watershed totaled approximately 147 acres. We estimate that approximately 18 acres are currently wetlands or degraded/destroyed wetlands with some restoration potential. (Figure 43. South Eld Sub-Watershed Resource Sites).

Riparian condition

Urban development has encroached on approximately 89 acres of the 67-meter wide riparian corridors in the South Eld basin. Of the 196 acres, approximately 89 acres have some restoration potential (Figure 43. South Eld Sub-Watershed Resource Sites).

Floodplain Condition

There is no regulated floodplain in South Eld.

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 5 sites were of high or medium environmental benefit (Figure 44. South Eld Ecological Processes and Resource Site Scoring).

Fish Habitat

There were 11 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 45. South Eld Potential Stormwater Restoration Sites).

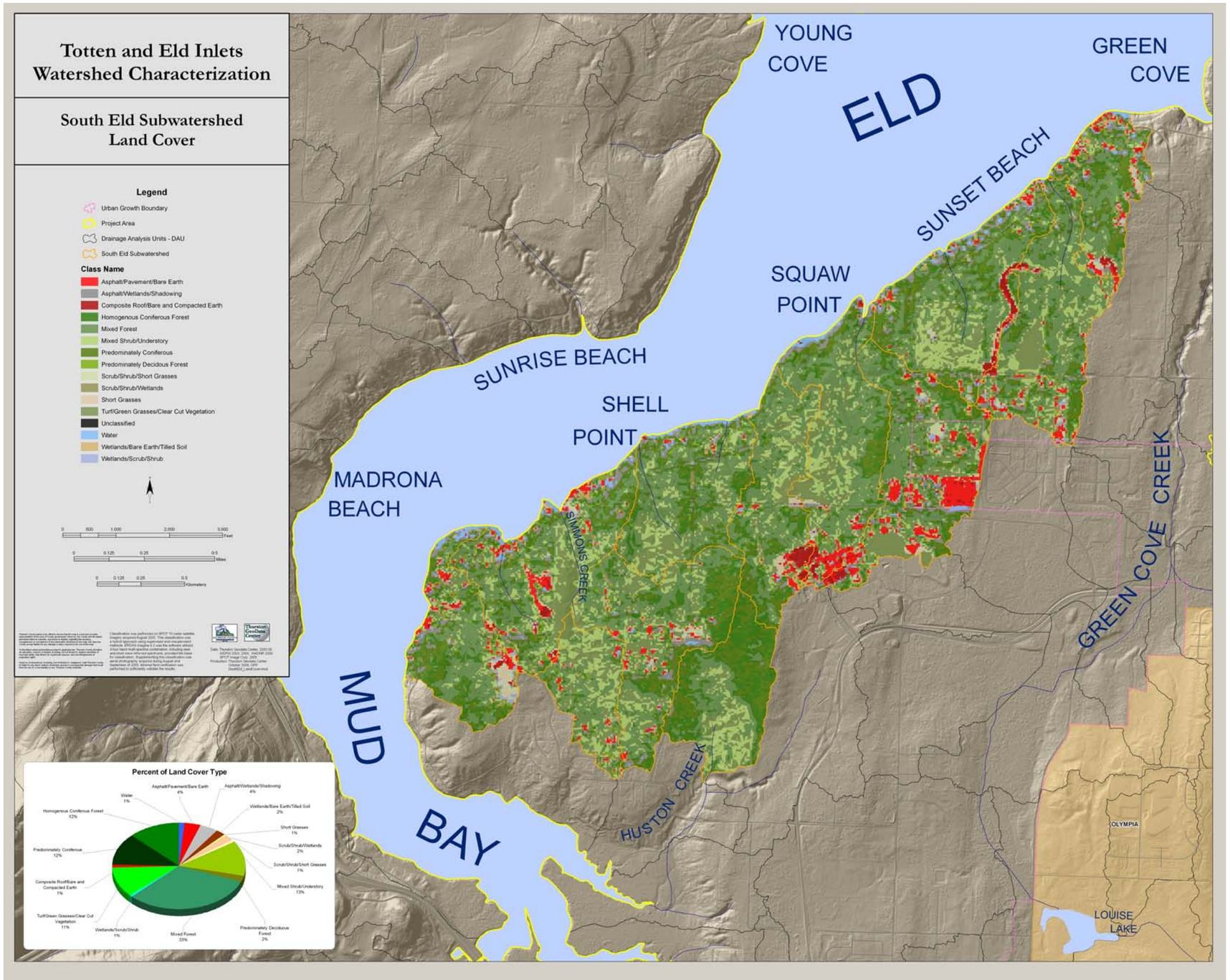
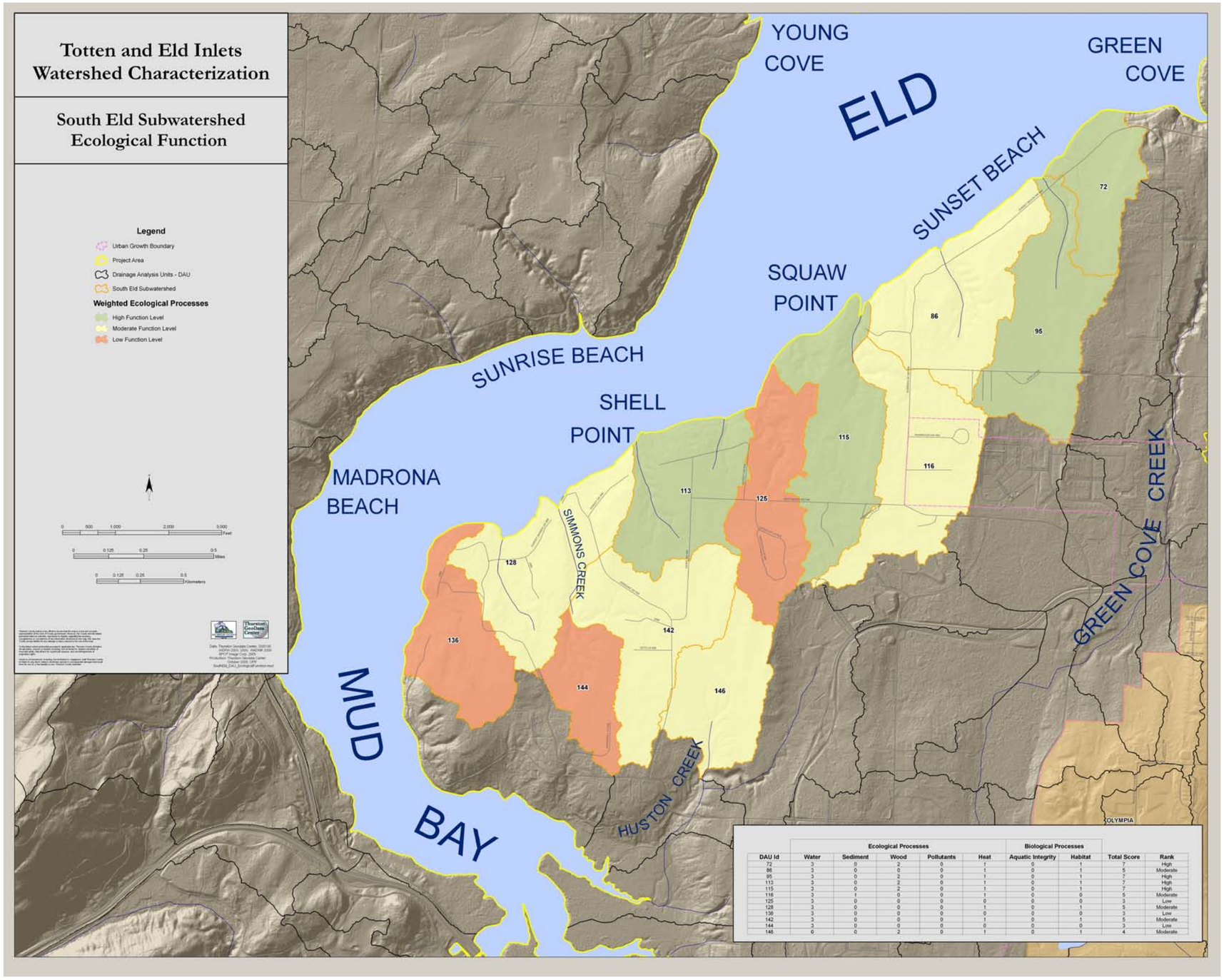


Figure 41 South Eld Sub-watershed Land Cover



DAU Id	Ecological Processes: Water	Sediment	Wood	Pollutants	Heat	Biological Processes: Aquatic Integrity	Habitat	Total Score	Rank
72	3	0	2	0	1	0	1	7	High
86	3	0	0	0	1	0	1	5	Moderate
95	3	0	2	0	1	0	1	7	High
113	3	0	2	0	1	0	1	7	High
115	3	0	2	0	1	0	1	7	High
116	3	1	0	0	1	0	0	5	Moderate
125	3	0	0	0	0	0	0	3	Low
128	3	0	0	0	1	0	1	5	Moderate
136	3	0	0	0	0	0	0	3	Low
142	3	0	0	0	1	0	1	5	Moderate
144	3	0	0	0	0	0	0	3	Low
146	0	0	2	0	1	0	1	4	Moderate

Figure 42 South Eld Sub-watershed Weighted Processes

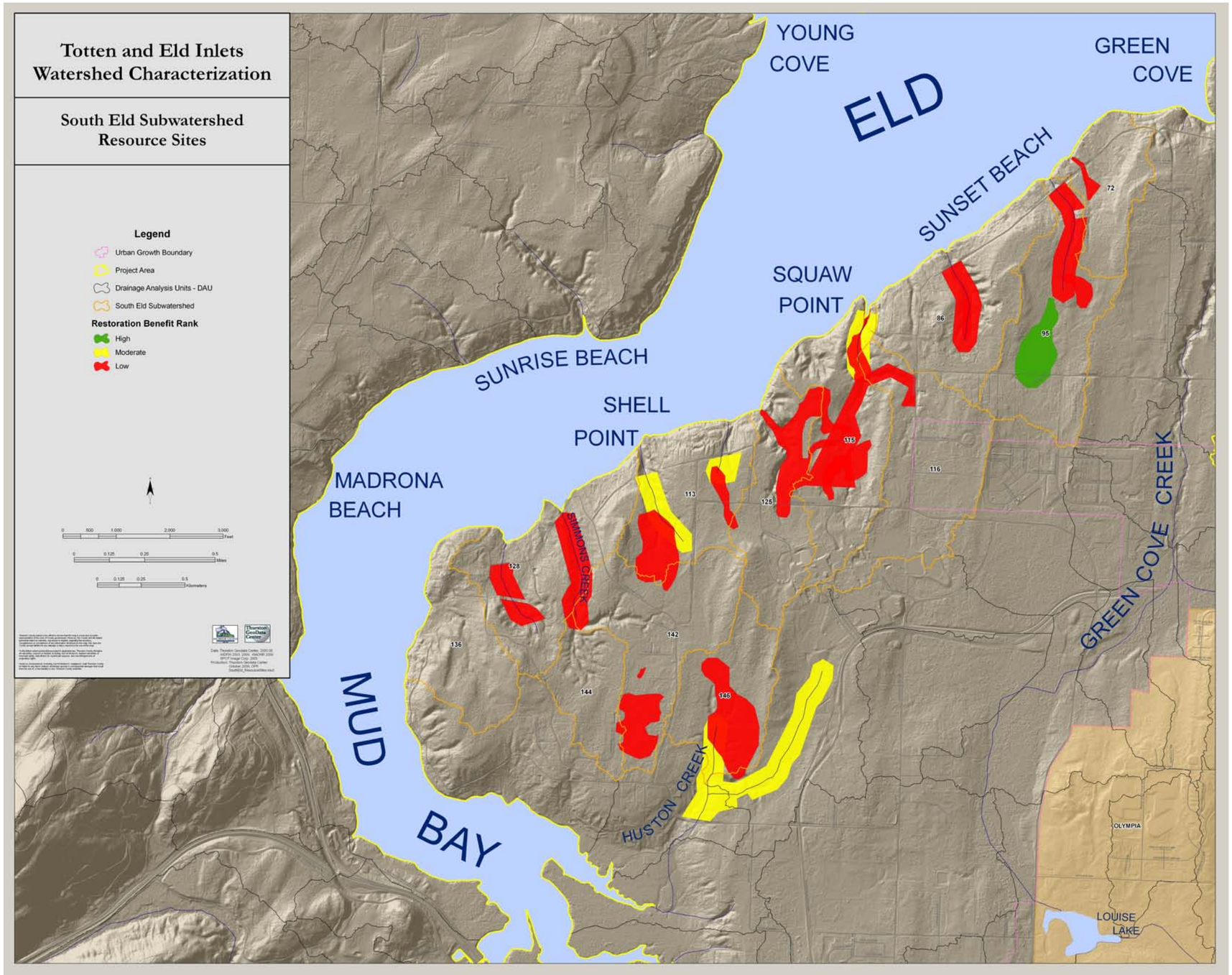


Figure 43 South Eld Sub-watershed Resource Sites

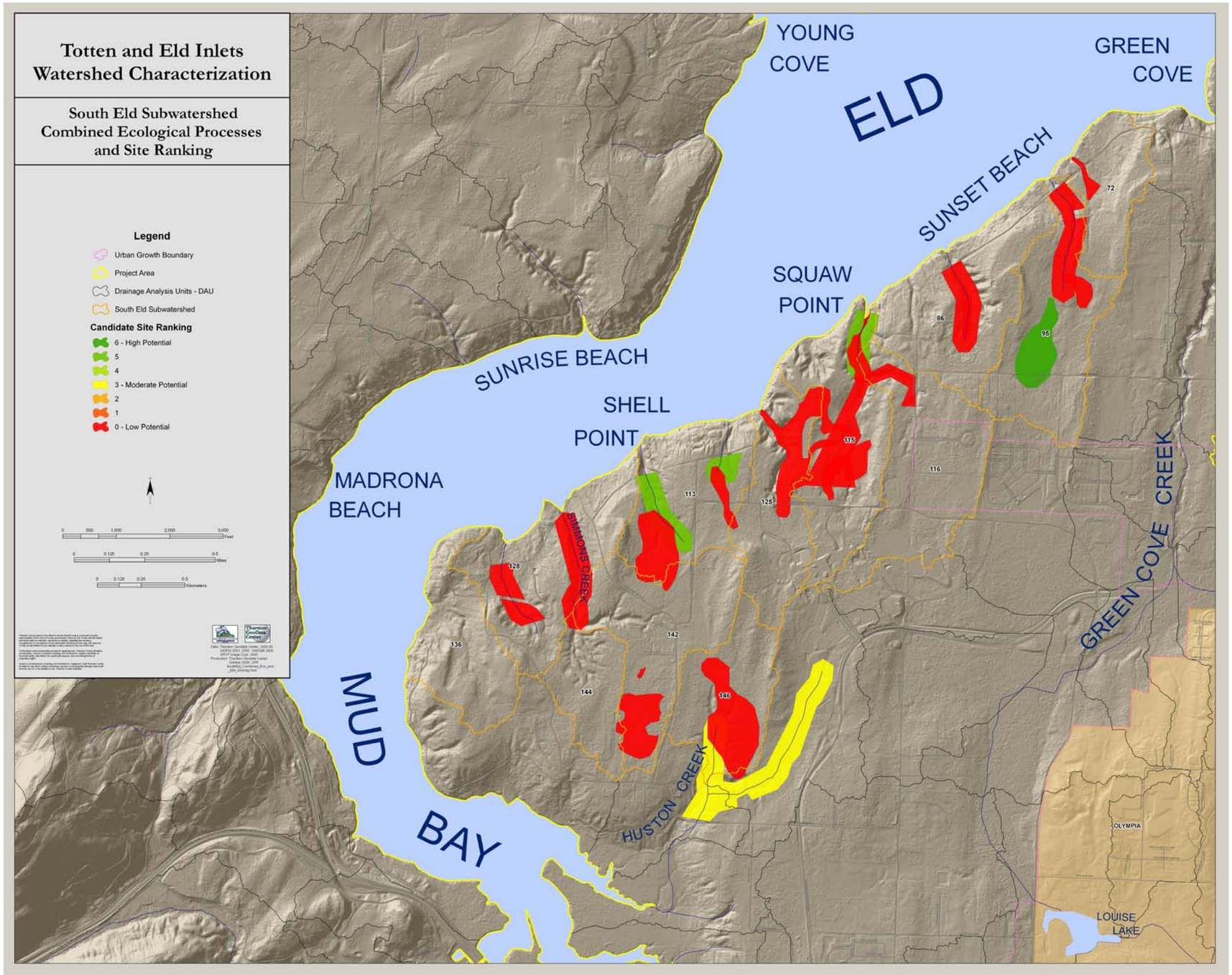


Figure 44 South Eld Sub-watershed Ecological Processes and Resource Site Scoring

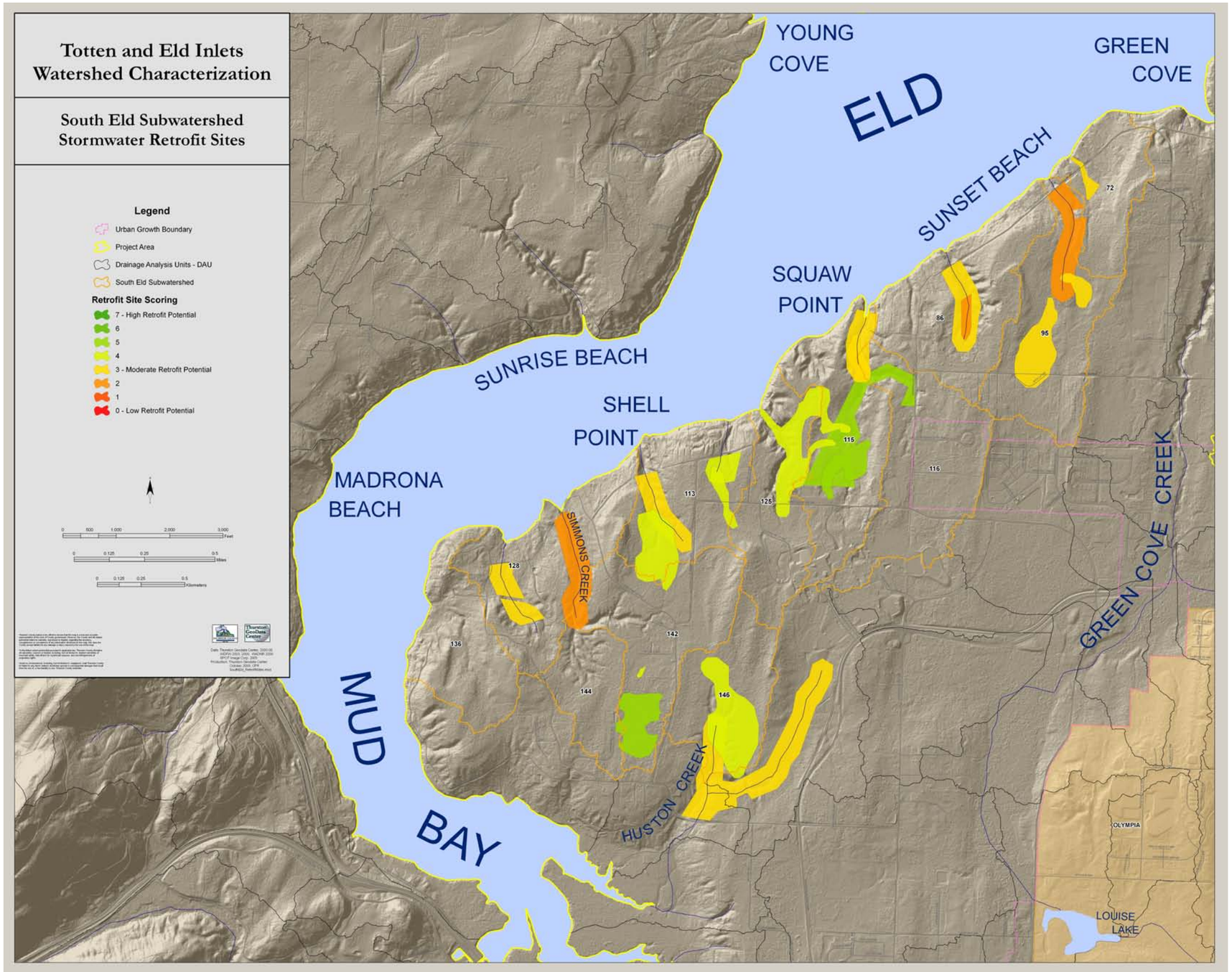


Figure 45 South Eld Sub-watershed Retrofit Sites