

# Aquatic Habitat Improvement, Mainstem of Saginaw Creek, Petersburg Ranger District, Tongass National Forest

July 17, 2014

## Background

An interdisciplinary group (Heath Whitacre, Petersburg Ranger District Hydrologist; Julianne Thompson, Tongass Hydrologist-Watershed Program Manager; Quentin Smith, Tongass Supervisory Civil Engineer; Jacquie Foss, Tongass Soil Scientist; Ted Sandhofer, Tongass Sale Administration Program Manager; Heidi Lombard, Petersburg Ranger District Fisheries Biologist) evaluated best management practices (BMPs) on the Saginaw Creek aquatic habitat improvement project. The Petersburg District Ranger, Jay Anderson, determined that these actions fall under categories of action excluded from documentation in an environmental impact statement (EIS) or environmental analysis (EA) as established by the Chief, FSH 1909.15.30 (32.2)(7) “Modification or maintenance of stream or lake aquatic habitat improvement structures using native materials or normal practices”.

Stream restoration on the mainstem of Saginaw Creek began on July 7, 2014. The work included aquatic habitat improvement and bank stabilization with locally-sourced logs. The logs were used for instream and floodplain restoration on 2.4 miles of anadromous fish streams. The project required heavy equipment to place approximately 1,000 large wood (LW) pieces in four streams and their floodplains. The contractor implemented 30-minute rest periods where no machines were working in the water to let the sediment settle out and give the fish a break.

## BMP Implementation

Puncheon trails were used for the heavy equipment to operate on to prevent soil disturbance. Project maps for the puncheon trails were very helpful. The trails average about 10 meters in width and were created by felling 46-year-old young-growth trees and laying down a nearly continuous mat of cull logs and slash. Under repeated passes with equipment, the cull logs and slash were forced into the soil to a depth of 20 to 30 centimeters, altering the structure of the O, E, and upper B soil horizons. The puncheon trail was fluffed after stream restoration was complete. Fluffing broke up the dense slash mat and likely loosened the upper layers of soil that the slash had penetrated. Fluffing did not move all of the slash and some slash is still evident in the upper mineral soil horizons.

The contractors forgot booms on the first day of work, so no work occurred until booms were on site. Contractors were fast to respond and had them at the work site within 3 hours. This was a short delay.

There were hydraulic leaks twice during project implementation.





Saginaw Creek Photo 2. Another puncheon access trail with a felled young-growth mat.

One leak occurred while working in the stream and one while working on a puncheon trail. The contractors' deployed absorbent pads immediately, replaced the o-ring, and the problem was fixed. The spills were not reported to the Alaska Department of Environmental Conservation (ADEC) because the contractors were using biodegradable, vegetable-based hydraulic fluids. We did not know if this type of spill requires reporting, since it is not petroleum-based.

The review team was impressed by project innovations that occurred on the fly.

**Corrective Actions to Improve Implementation**

Puncheon trail rehabilitation is needed. Hand-slash and seed for bare areas were recommended by soil scientist. Seeding was not mentioned in the NEPA but is going to occur with force account funds.

**Adaptive Management Actions to Improve Implementation**

An erosion control plan needs to be required in the contract. Consider including seeding in the contract as part of the erosion control plan so it can be done immediately after work is completed. Erosion control seeding had not been completed at the time of monitoring, but was completed soon after.

Consider using a log loader for this type of project instead of an excavator; this will allow for narrower clearing limits on puncheon trails and less time working in the stream due to easier handling of the wood.

Clearing limit widths should be defined for puncheon trails in the contract, so they are not larger than needed.

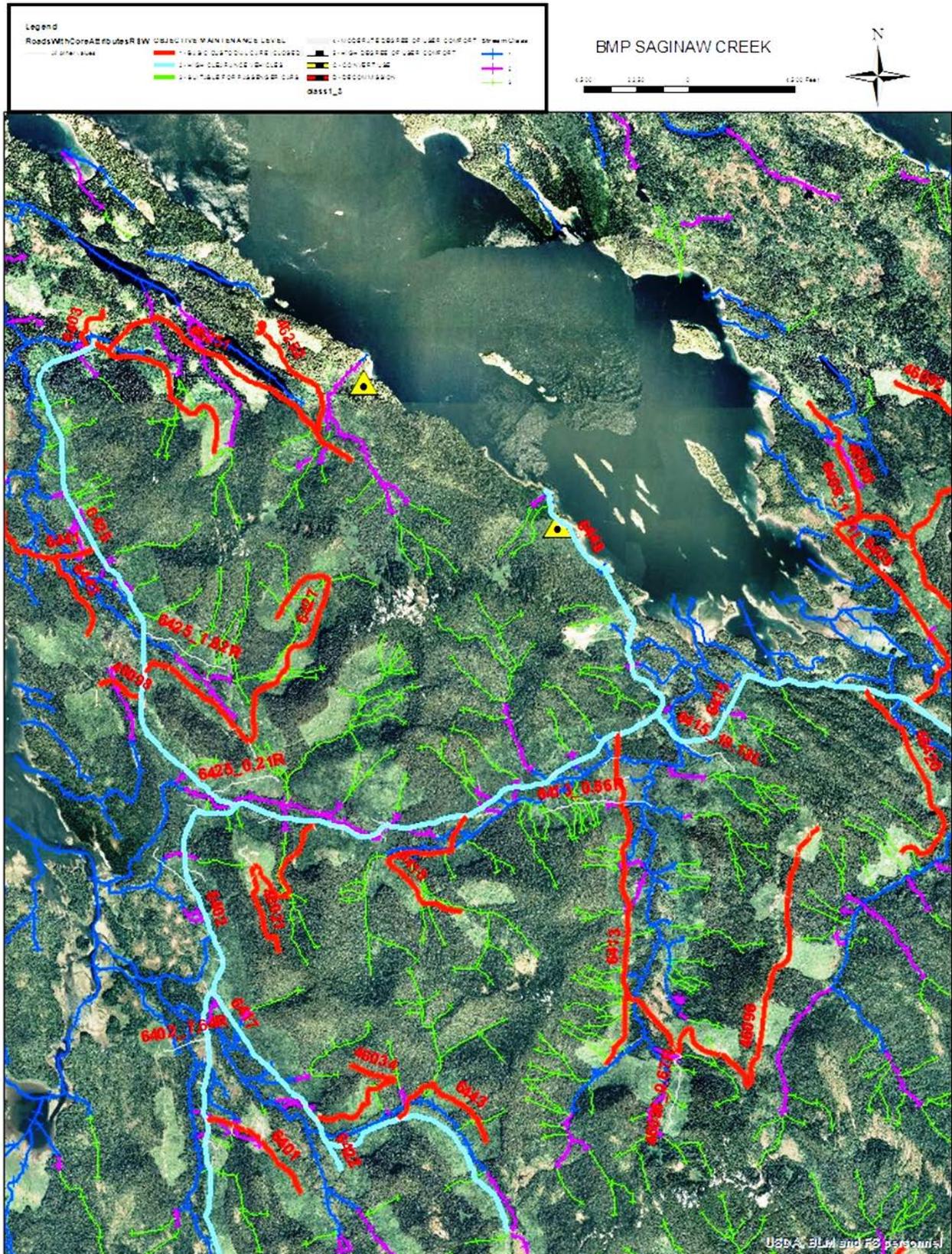
**BMP Effectiveness**

**Corrective Actions to Improve Effectiveness**

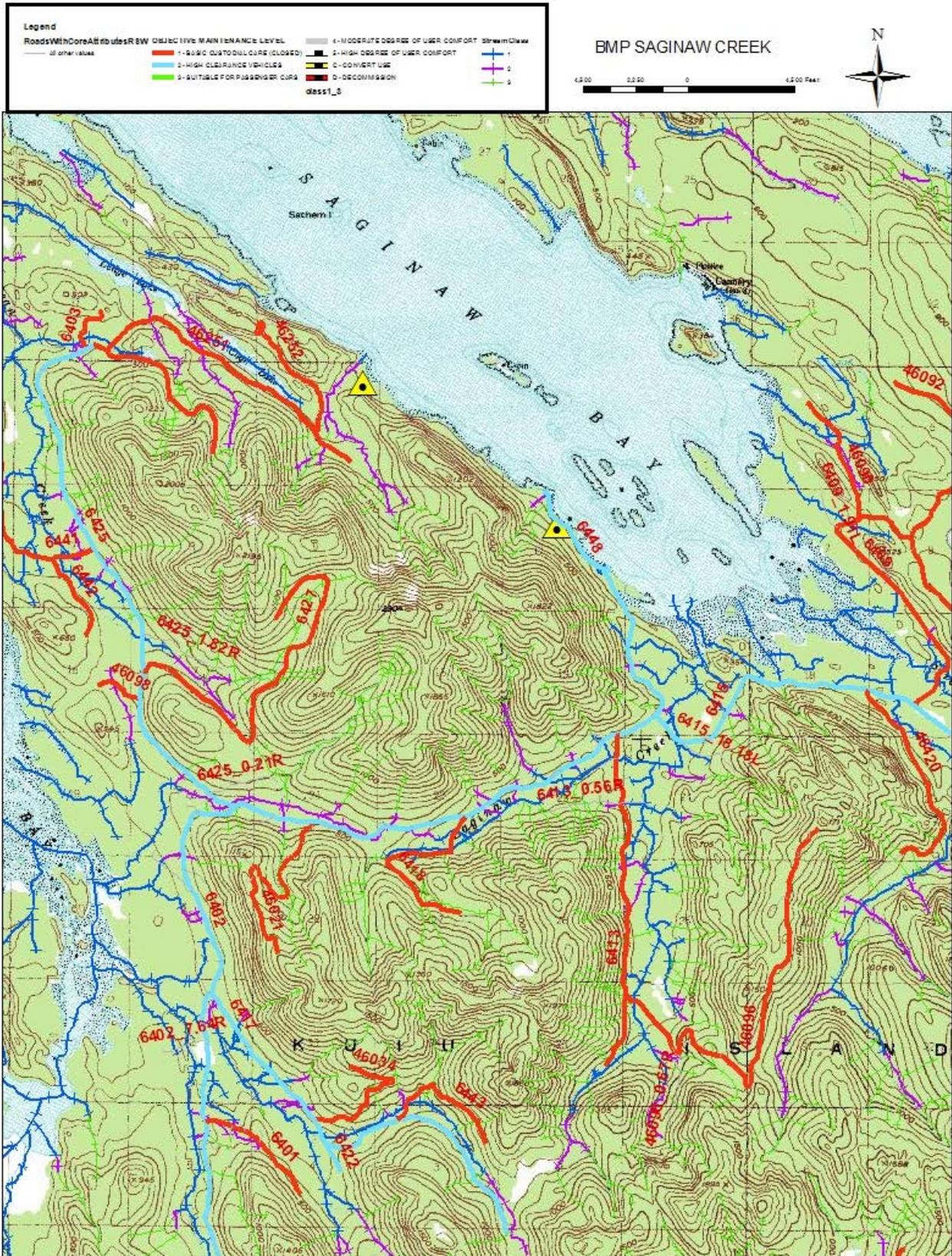
Staging decks of logs should not occur on puncheon trails in the riparian management areas (RMAs) to minimize disturbance to the RMA and to minimize the footprint of the puncheon trail.

**Adaptive Management Actions to Improve Effectiveness**

Consider trade-offs of rock roads instead of puncheon trails for this type of project in the future.



Saginaw Creek Figure 1. Ortho photo of Saginaw Creek



Saginaw Creek Figure 2. Saginaw Creek map