

Pearson Ecological

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Memorandum

To: Eddy Mejlholm and Interested Parties
From: Mike Pearson
Subject: Habitat Assessment of Luckakuck Creek Headwaters
Date: July 16, 2013

Purpose

This memorandum summarizes the data obtained of habitat assessment and fish/amphibian sampling work completed in the headwaters of Luckakuck Creek in Chilliwack:

1. to document fish and amphibian use of habitat in the headwater area
2. to find the upstream limit of fish access
3. to assess habitat values of areas beyond the limit of fish access

Methods

The channel was walked from its most upstream extent to Stevenson Road and assessed for connectivity, wetted area, water quality parameters, and potential as habitat for aquatic and riparian species.

Fish and amphibians were sampled in a pond upstream of Stevenson Street and in ponds 425 m downstream of Stevenson Road (Figure 1). The upstream pond was sampled using a backpack electroshocker and the downstream pond was sampled with Feddes traps baited with cat food and set overnight (Pearson 2009). Fish collection permits from BC Ministry of Forest Lands and Natural Resource Operations, Fisheries and Oceans Canada and a Species at Risk Act permit for sampling Salish sucker held by Pearson Ecological covered this work. Dissolved oxygen, water temperature, and specific conductivity were measured with handheld meters (YSI ProDO optic probe and Oakton PCTestr 35).

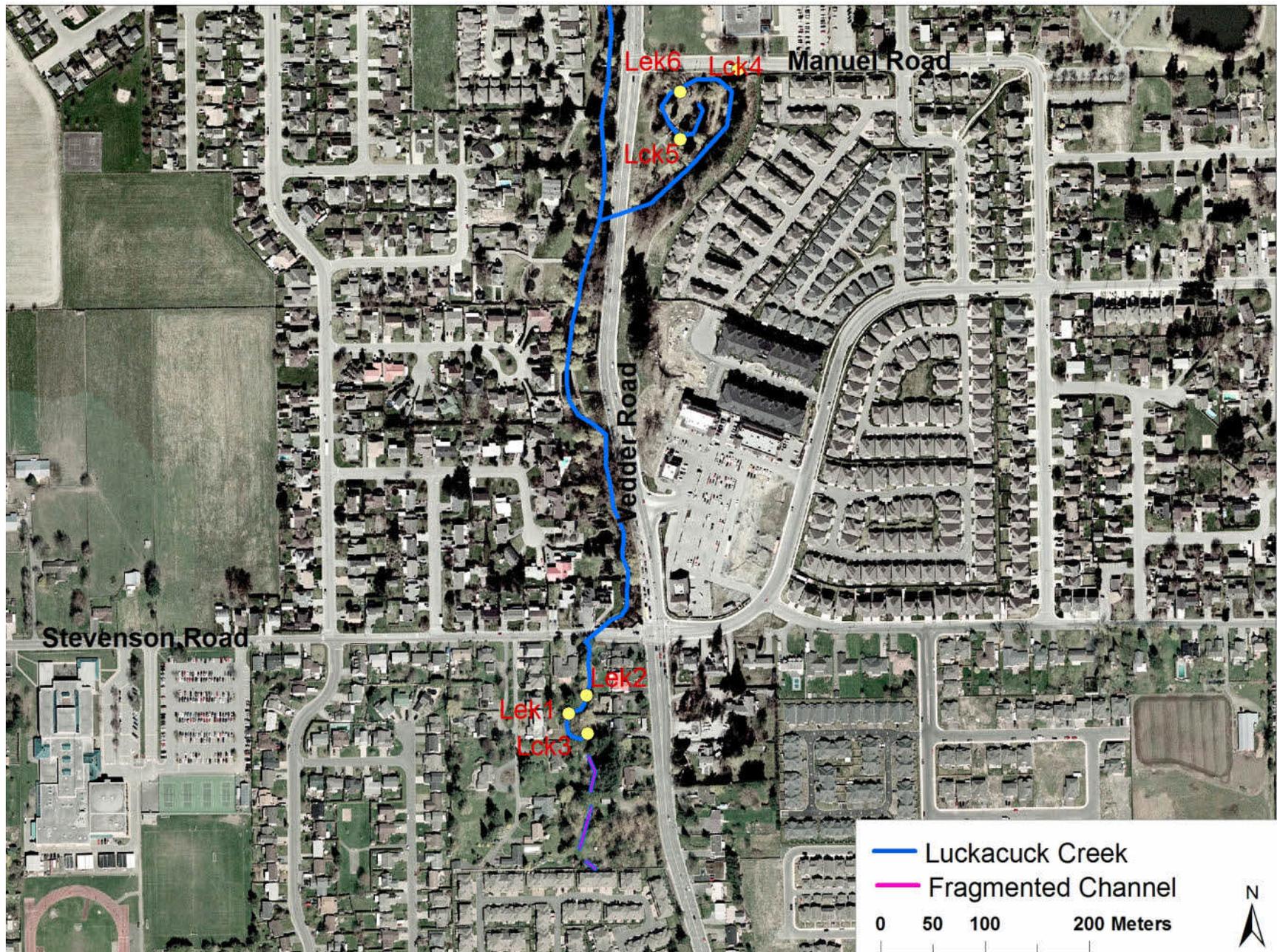


Figure 1: Sampling locations in the Luckacuck Creek headwaters sampled on July 14 and 15, 2013. Site descriptions and results are provided in table 1.

Results

Upstream of Stevenson Road

The uppermost section of channel is fragmented by the historical placement of fill in three areas. The southernmost fragment is a small pond, the other two fragments are currently dry, but clearly contain water during the wetter periods. Significant riparian vegetation surrounds the channel fragments, although a number of introduced plant species are established. Six northwestern salamander juveniles (*Ambistoma gracile*) were captured in a small headwater pond upstream of Stevenson Road. This pond and adjacent channel is currently isolated by a dry culvert under Stevenson Road, but would be connected by higher water levels through most of the year.

Manuel Road Ponds

Forty-four Salish suckers and 57 threespine stickleback were captured in the ponds at Manuel Road. A large school of juvenile Salish suckers (approx. 150 individuals) was observed in the ponds at Manuel Road. Water quality here cool, well oxygenated and suitable for salmonids and other native fish species.

Table 1: Descriptions of sites visited in the Luckakuck Creek Headwaters

Location	Site Description	Observations
LCK1	Small pond	Uppermost limit of water on July 14
LCK2	Pond upstream of Stevenson Raod	Water Temperature:19.1 C Dissolved oxygen 11.52 mg/l Six Northwest salamander larvae captured
LCK3	Uppermost limit of fish access	Channel muddy and recently dewatered No inlet found
LCK4	Feddes trap set overnight	18 Salish sucker; 37 Threespine stickleback Water temperature: 15.2 C Dissolved oxygen 7.95 mg/l
LCK5	Feddes trap set overnight	26 Salish sucker; 20 Threespine stickleback
LCK6	Footbridge	Observed ca. 150 Salish sucker juveniles

Discussion

The headwater area of Luckakuck Creek upstream of Manuel Road has high value as fish habitat. It is known to support a significant concentration of Salish suckers, a nationally endangered species, and has habitat conditions suitable for year round rearing of salmon and trout species. The water temperature in the Manuel Road ponds is very low for July and indicates strong inflows of groundwater.

The channel upstream of Stevenson Road is fragmented seasonally by sections of dry channel and the uppermost sections are fragmented by areas of historical fill. They do continue to provide important habitat for amphibians, small mammals and songbirds and to provide an area of groundwater recharge. Given the close proximity to high quality fish habitat, the connected portion of Luckakuck Creek upstream of Stevenson Road would be used between fall and spring by Salish sucker, and probably

salmonids when water levels are higher. Restoring connectivity with the fragmented areas through the removal of fill or the installation of connecting culverts would extend the fish accessible portion of the Luckakuck Creek headwaters, providing additional habitat with relatively effort or expense. Given the high groundwater table in the area, excavation may increase groundwater flows into the channel and improve drainage in surrounding areas. Control of invasive plant species and planting of native riparian vegetation would significantly enhance the habitat value of the area for a variety of native wildlife species. Given the close proximity of habitat Salish sucker, funding for such a project may be available through federal grants by partnering with local stewardship groups.

Should you have any questions or wish to discuss these findings, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Pearson", is centered on a light gray rectangular background.

Mike Pearson, PhD, RPBiO