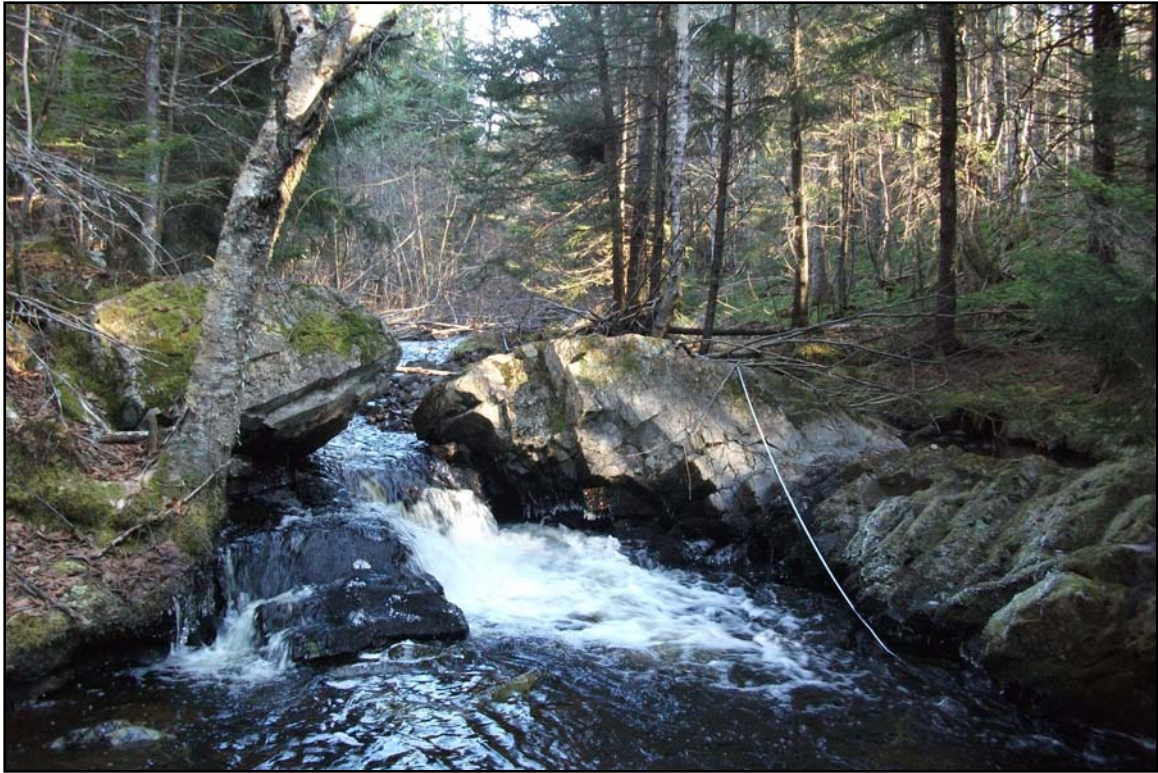


Kennebecasis Watershed Restoration Committee Habitat Assessment Report 2011



Prepared by
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KWRC
2011



Votre Fonds en fiducie pour l'Environnement au travail
Your Environmental Trust Fund at Work

Acknowledgments

The Kennebecasis Watershed Restoration Committee wishes to thank the ongoing support from The New Brunswick Environmental Trust Fund. This project would not have been made possible without the funding put forward. Many thanks also extended to the various committee members who dedicate much of their time and effort into directing the staff and volunteers of the KWRC. To the landowners throughout the watershed who graciously allowed us to park our vehicles and access the streams via your property, we send our thanks.

Executive Summary

In 2011, the Kennebecasis Watershed Restoration Committee conducted habitat assessments on six tributaries throughout the watershed. This study was done in order to obtain baseline data on these streams and to identify any and all problem areas within these freshwater contributors. The data collected will be used to direct the restoration efforts of the KWRC as well as to establish a long term monitoring and management plan for these areas.

Through this assessment, information was collected on the physical characteristics, riparian conditions, as well as basic water quality parameters in 100 m increments. This data will build on data collected in 1994 when 285.5 km of stream were assessed as an initial study of the watershed and in 2009 when tributaries of the Lower Kennebecasis sub-watershed were assessed.

This report discusses the issues, trends and concerns that were extrapolated from the review of the habitat assessment data collected in the field. The review was done by KWRC staff, committee members and other stakeholders. The 2011 data will be added to historical data collected on various other streams in 1994 and 2009. The results of the assessment were discussed individually by stream and recommendations were provided for each system.

Future efforts of the KWRC can be directed from the recommendations suggested in this report. These recommendations are to help direct the actions of the Committee and staff as we continue our efforts along the Kennebecasis. The recommendations are not all inclusive but rather an overview of the monitoring activities that could be undertaken.

Table of Contents

Acknowledgements.....	i
Executive Summary	ii
Table of Contents.....	iii
1.0 Introduction.....	1
2.0 Background.....	1
3.0 Study Area	2
4.0 Methodologies.....	3
5.0 Results.....	4
6.0 Discussion and Recommendations	6
6.1 Shannon Brook.....	7
6.2 Sheck Brook.....	8
6.3 Sally Brook	9
6.4 Little South Branch.....	10
6.5 Grooms Brook.....	11
6.6 Pickwauket Brook.....	12
Appendix A “Kennebecasis Watershed Restoration Committee Members”.....	iv
Appendix B “Fish Species of the Kennebecasis Watershed”.....	vi
Appendix C “2011 Habitat Assessment Field Sheet”.....	vii
Appendix D “Complete Data Tables for Habitat Assessment 2011”.....	x

List of Figures and Tables

Table 1: Tributaries by length in kilometers.....	4
Table 2: Condensed data for riparian zone characteristics of tributaries assessed within . the Kennebecasis Watershed.....	5
Table 3: Condensed data for stream and channel characteristics of tributaries assessed within the Kennebecasis Watershed	5
Table 4: Condensed data for habitat conditions of tributaries assessed within the Kennebecasis Watershed	6
Figure 1: Map of Shannon Brook assessment.....	7
Figure 2: Map of Sheck Brook assessment.....	8
Figure 3: Map of Sally Brook assessment	9
Figure 4: Map of Little South Branch assessment.....	10
Figure 5: Map of Grooms Brook assessment.....	11
Figure 6: Map of Pickwauket Brook assessment.....	12

1.0 Introduction

In 2011 the Kennebecasis Watershed Restoration Committee conducted habitat assessments on six tributaries throughout the watershed. A total of 38.2 km of stream system was assessed through funding provided by the New Brunswick Environmental Trust Fund. The goal of this work was to obtain baseline data on tributaries of the Kennebecasis River, identify any and all problem areas within the tributaries, and create management recommendations that will facilitate the ongoing restoration efforts of the KWRC. The data collected will also be the benchmark for future monitoring.

The survey work conducted on these tributaries provided information on the physical characteristics, riparian condition as well as basic water quality parameters. This data will build on data collected in 1994 when 285.5 km of stream were assessed as an initial study of the watershed and in 2009 when tributaries of the Lower Kennebecasis sub-watershed were assessed. The following report will discuss the results of the 2011 assessments in detail.

2.0 Background

The Kennebecasis Watershed Restoration Committee is a non-profit organization whose mission is to restore the aquatic environment of the Kennebecasis River watershed to historical conditions for fish and other aquatic, avian and terrestrial life. The Committee's goals are met through strategic habitat restoration, educational and advisory initiatives and promoting public awareness and participation in the restoration of the Kennebecasis River Watershed. The KWRC is composed of representatives from various provincial and federal departments, municipalities of the area, Soil and Crop Improvement Associations and local interest groups (Appendix A).

The KWRC has been planning, securing funding for, and implementing restoration activities within the Kennebecasis Watershed since 1994. The initiative began with a comprehensive habitat assessment of 285.5 km of stream. Based on the findings from this assessment, a prioritized list of impacted sites was compiled for the watershed to provide a clear direction for restoration efforts by the Committee. Strategic habitat restoration and enhancement activities are designed to promote aquatic health and water quality through improvements to the aquatic ecosystem in its entirety. The KWRC is committed to continuing restoration activities throughout the Kennebecasis Watershed in a concise and effective manner to reach the goal of a watershed with sustainable aquatic resources.

Community and landowner involvement and awareness are essential components to our projects that will help to ensure the sustainability of the watershed for years to come. These successes have not only had direct positive impacts on the landowners associated with the work, but also on the Village of Norton, the Village of Sussex Corner and the Town of Sussex. All of these councils are in full support of the initiatives undertaken, realizing they will be the benefactors of improved water quality and diminished flood and erosion damage due to ice generation on the system. We have a rich, successful, history and a clear future based on priority based planning and strong partnerships.

3.0 Study Area

The Kennebecasis River system has been and continues to be an important resource to the people of the southeastern area of New Brunswick. Kennebecasis is a Maliseet term that means “little snake”, a good description for the river whose watershed covers 134,660 hectares as it twists and turns from its head waters in Goshen to the head of tide at Bloomfield.

The mainstem of the Kennebecasis River is spread out over two counties, Kings and Albert, extending 103.35 km from its origin in Hamilton Lake to its confluence with the head of tide at Bloomfield. The Kennebecasis Watershed is made up of a number of significant tributaries including South Branch (17.89 km), Smith’s Creek (35.39 km), Trout Creek (26.75 km), Millstream River (45.52 km), and Moosehorn Creek (15.83 km) distributed throughout eight parishes from Elgin parish to Springfield parish.

The Kennebecasis River Watershed is located in the Saint John River Basin. The majority of the watershed is located in the Continental Lowlands Ecoregion (93.6%) with the remainder in the Southern Uplands Ecoregion (6.3%). The headwaters begin in the Southern Uplands Ecoregion, which is part of the unique Fundy plateau having elevations up to 500 m. This elevation creates a colder climate with forested ecosystems normally found in more northern latitudes. As the head waters drain into the Continental Lowlands Ecoregion, the climate becomes variable with warmer summer and colder winter temperatures and less precipitation than the adjacent Uplands Ecoregion. Generally, all of the tree species native to the Province can be found in this Ecoregion because of this broad range in climate and soil fertility.

The Kennebecasis River system plays a significant role in providing habitat for many species of birds, mammals and amphibians that use its banks, oxbows and backwaters for nesting and rearing of their offspring. This watershed is also the home to several different varieties of freshwater species of fish (Appendix B). Due to the physical and hydrological characteristics of the watershed, the Kennebecasis River and its tributaries have played a significant role in settlement, tourism, and commercial endeavors for the immediate and surrounding areas.

Through the years the Kennebecasis River System has been known for its recreational fishing opportunities especially in the pursuit of Salmonids such as Atlantic salmon and Brook Trout. Recreational fishing continues to be vigorously pursued by many residents and non-residents alike (Creel Census 2000).

The Kennebecasis River and its tributaries meander through a collage of geological land types and anthropogenic land-uses including vast agricultural lands, industries, recreational areas and municipalities (i.e. Village of Sussex Corner, Apohaqui, Norton, Bloomfield and the town of Sussex). Approximately seventy-eight percent of the watershed consists of forested lands with seventeen percent consisting of agricultural and occupied lands. The Kennebecasis Watershed is the home to a variety of different activities that directly and indirectly affect water quality as well as habitat conditions.

Agricultural, residential and other occupied lands directly influence the water quality and habitat conditions of the watershed through cattle grazing, riparian vegetation removal and agricultural and municipal runoff. Residential areas such as Penobsquis, Sussex, Apohaqui, Norton and Bloomfield as well as rural residences, dot the entire length of the Kennebecasis River and its tributaries. Industries such as a potash mine, saw mills, and fish hatcheries are located throughout its reaches. Recreational industries including two golf courses are also found on the Kennebecasis tributaries.

4.0 Methodologies

A combination of two methods was utilized for this study. Due to time constraints, staffing, and funding, a more rapid form of assessment was developed. A number of key habitat characteristics were investigated using field observations. The results were recorded on the field sheets in Appendix C. This methodology was taken from “Lower Kennebecasis Tributaries Habitat Assessment Report 2009” (Whalen, Finnamore, 2010). This was adapted from the DNR model for Habitat assessment.

1. Location:

- Tributary – the tributary in which the assessment was being done was recorded along with the date
- Coordinates – using a Garmin Legend HCX the upstream and downstream coordinates of each reach were recorded using a letter and numeric label (ie. Thompson Brook would be TB-01)
- Reach Length – for the majority of reaches the length was set at 100m however, Thompson Brook was completed by assessing each pool, riffle, run, as a separate reach and thus the lengths were measured using a tape measure and recorded on the Department of Natural Resources field sheet (Appendix 1)

2. Riparian Characteristics:

- Vegetative cover – this was assessed using a percentage of cover. A field observation of bare ground, grasses, shrubs, and trees was taken.
- Shade cover – a visual estimate of how much shade the over hanging vegetation provided the stream being surveyed

3. Stream Channel Characteristics:

- Wet width – a measuring tape was used to take an average wet width of each reach with a minimum of three readings per reach
- Depth – a meter stick was used to assess the average depth of each reach with a minimum of three readings per reach
- Bank conditions – observations were taken on what percentage of the left and right banks were stable, slightly eroded, or heavily eroded

4. Aquatic Habitat Conditions:

- Substrate composition – a visual assessment of the percentage of bedrock, boulder/rubble, gravel, sands/fines was recorded for each reach

- Flow Conditions – a visual assessment was recorded on what percentage of reach was pool, riffle, or run

Notes were also taken on dissolved oxygen and temperature as well as other points of interest (ie: beaver activity, bridges and dumpsites). Assessments were done on each 100 m section of stream. Once all of the data was collected, staff then had to compile it into a condensed, readable format. The complete data tables can be found in Appendix D-I.

A total of six tributaries were assessed in the summer and fall of 2011. These tributaries were located throughout the watershed and also within the Kennebecasis Bay Composite area. The tributaries selected were based on discussions with stakeholders, KWRC Committee members, and a lack of prior knowledge of the tributary. Each stream was assessed from the top down, from the point where a channel and/or water was easily observed.

Table 1: Tributaries by length in kilometers

#	Name of Tributary	Approx. Length in km
1	Shannon Brook	4.5
2	Sheck Brook	6.7
3	Sally Brook	10.9
4	Little South Branch	8.2
5	Grooms Brook	3.4
6	Pickwauket Brook	4.5
	TOTAL	38.2

5.0 Results

Most of the data was that based on observation and therefore subject to interpretation. The hard data collected from the habitat survey can be utilized with land use, soil, and forest cover maps to provide a further understanding of each of these small tributaries. The results shown in the tables below however are simply the hard data condensed into easily understood tables. The tables represent three main components of healthy watershed habitat; riparian characteristics, stream/channel characteristics, and habitat characteristics.

Table 2: Condensed data for riparian zone characteristics of tributaries assessed within the Kennebecasis Watershed

Stream Location		Riparian Zone Characteristics										
Tributary Name	Sub-watershed	RB Cond.			LB Cond.			Vegetative Cover				% shade
		stable	eroding	bare	stable	eroding	bare	moss	grasses	trees	shrubs	
Sheck Brook	Millstream	90	10		87	13		2.27	32.05	44.84	17.52	59.58
Sally Brook	Smith's Creek	73	4	23	78	5	14	2.25	20.31	60.64	15.85	68.29
Shannon Brook	Trout Creek	67		33	64		36	6.7	47.6	97.8	20.8	60
Grooms Brook	Kennebecasis Bay	94	6		94	6		12.94	16.91	46.76	7.21	71.84
Pickwauket Brook	Kennebecasis Bay	82	18		82	18		13.78	28.39	41.11	11.11	66.74
Little South Branch	Upper Kennebecasis	95	5		95	5		8.71	16.37	55.23	16.79	72.07
TOTALS		83.5	8.6	28	83.3	9.4	25	7.77	26.94	57.73	14.88	66.42

Note: Totals indicate an average for each observed parameter. The unit of observation was assessed as a percentage.

Table 3: Condensed data for stream and channel characteristics of tributaries assessed within the Kennebecasis Watershed

Stream Location		Stream and Channel Conditions								
Tributary Name	Sub-watershed	Length (m)	Depth (m)	Wet Width (m)	Temp (°C)	Dissolved Oxygen	Substrate Composition			
							Bedrock	Boulder/Cobble	Gravel	Sands/Fines
Sheck Brook	Millstream	6700	19.61	333.12	17.24	15.25	1.19	13.82	27.87	55.41
Sally Brook	Smith's Creek	10900	22.7	393.87	15.85	9.33	0	21.15	28.65	49.23
Shannon Brook	Trout Creek	4500	13.28	282.3	12.01	10.16	9.29	23.31	32.11	44.22
Grooms Brook	Kennebecasis Bay	3400	15.99	271.32	7.7	10.12	0	16.88	28.24	55.14
Pickwauket Brook	Kennebecasis Bay	4500	26.65	320.95	7.67	10.57	3.82	36.84	30.53	31.75
Little South Branch	Upper Kennebecasis	8400	13.11	256.26	12.3	7.59	0.78	22.01	32.08	44.28
TOTALS		6400	18.56	309.64	12.13	10.50	2.51	22.34	29.91	46.67

Note: Totals indicate an average for each measured or observed parameter.

Table 4: Condensed data for habitat conditions of tributaries assessed within the Kennebecasis Watershed

Stream Location		Habitat Conditions				
Tributary Name	Sub-watershed	Temp (°C)	Dissolved Oxygen	Reach Composition		
				Pool (%)	Riffle (%)	Run (%)
Sheck Brook	Millstream	17.24	15.25	14.2	51	34.71
Sally Brook	Smith's Creek	15.85	9.33	15.7	27.86	54.63
Shannon Brook	Trout Creek	12.01	10.16	16.49	43.22	40.4
Grooms Brook	Kennebecasis Bay	7.7	10.12	24.39	35.45	40.15
Pickwauket Brook	Kennebecasis Bay	7.67	10.57	16.92	31.54	56.05
Little South Branch	Upper Kennebecasis	12.3	7.59	32.46	27.5	40.53
TOTALS		12.13	10.50	20.03	36.10	44.41

Note: Totals indicate an average for each measured or observed parameter.

Results from this data indicate that the largest issue within these tributaries, similar to the rest of the watershed, is stream bank erosion and riparian zone degradation. In many areas the streams have severely eroding stream banks and poor shade cover being offered by the riparian vegetation. This observation correlates with the high level of sands/fines being observed in these systems, which in 5 out of 6 tributaries composes greater than 40% of the substrate.

6.0 Discussion and Recommendations

Like they are for most river systems, the headwaters of the Kennebecasis watershed are vital to maintaining water quality and habitat health. Even though headwater streams are small and may appear to have no fish present, they still contribute greatly to habitat diversity, the food chain, and water chemistry. The six tributaries assessed by the KWRC in 2011 varied in land use, habitat ecology, and topography. Despite this fact the threats to the health of these streams is basically the same. Degrading riparian zones is contributing to elevation in stream temperatures, sediment inputs, and loss of valuable aquatic habitats.

The KWRC selected 6 tributaries that have little baseline data available for the purpose of this study. The KWRC considered stakeholder input and cooperative landowners, municipal priorities and interests, and potential for future threats on the tributaries. The elemental goal was to establish baseline conditions for these streams and identify existing areas of concern within each. While this study identifies physical parameters it is hoped that future resources will allow for a chemical water quality analysis to be completed as well. Further to that a fish presence study would be beneficial towards developing a management plan.

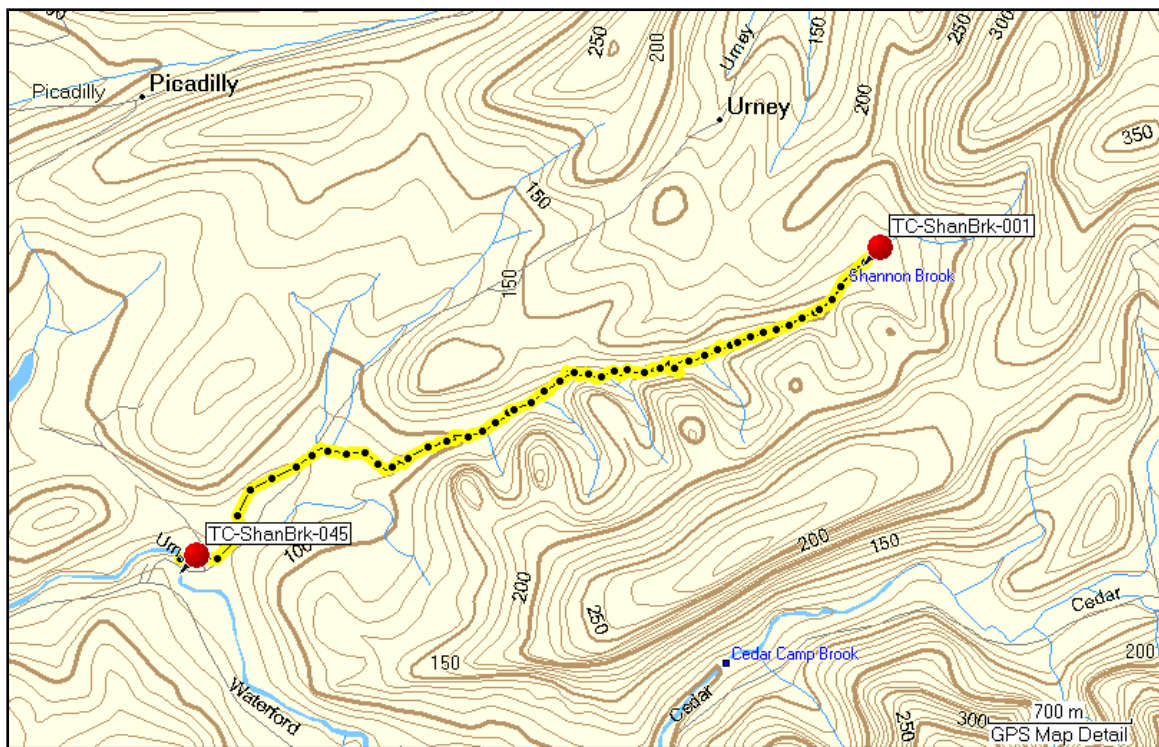
6.1 Shannon Brook

Shannon Brook is a tributary of the Trout Creek sub-watershed and one of the smaller systems included in the 2011 assessment. A total of 4.5 km were assessed from the headwaters to the confluence with Trout Creek, resulting in 45 assessment sections. Of these, 31 noted areas of eroding banks, 7 recorded high sand and fine content, and 7 areas with low percentage of cover. The areas of eroding bank are most likely the cause of the high sand and fine content throughout the stream which flows through land use areas including both agriculture and forestry practices.

Recommendations:

1. Educate the farmers along this tributary about better management practices
2. Identify a restoration project that can be done along this tributary that will improve riparian and aquatic conditions.
3. Encourage planning to protect this cold feeder stream and the rare geology along its southern valley

Figure 1: Map of Shannon Brook assessment



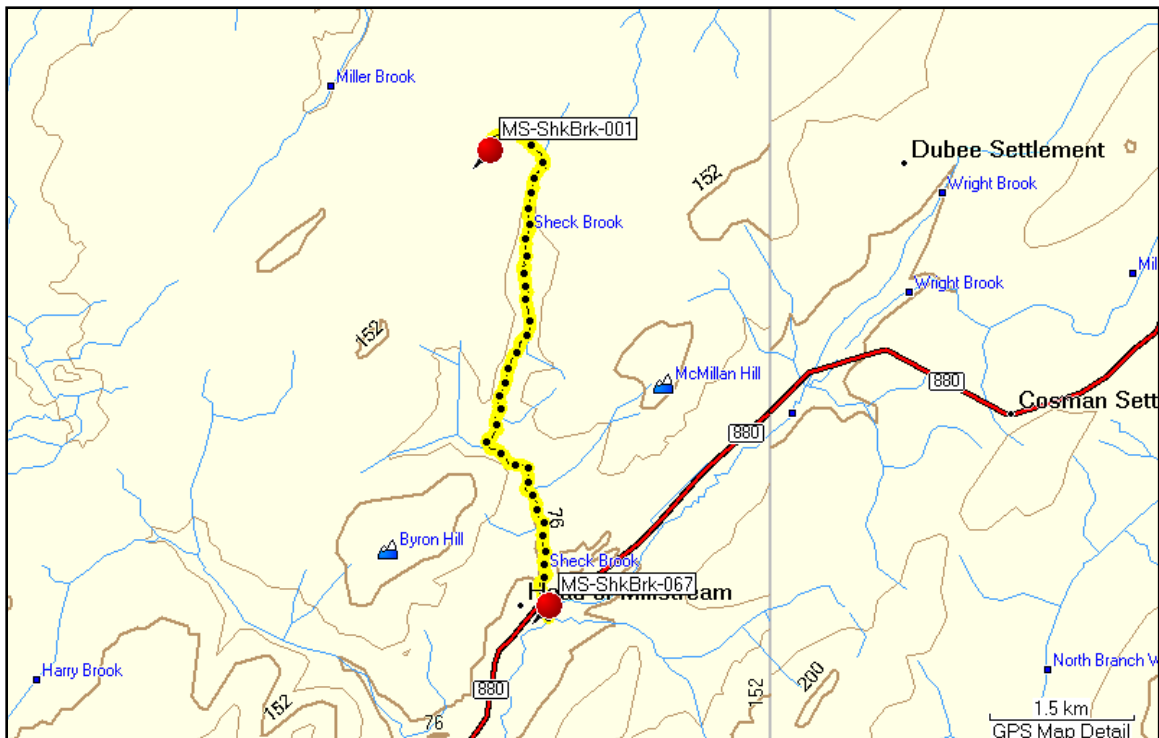
6.2 Sheck Brook

A total of 6.7 km of Sheck Brook within the Millstream sub-watershed was assessed during 2011. The results of this assessment showed 22 areas with high temperature readings. High sand and fine content was found to be an issue at 27 of the assessment sites of this brook and 16 areas were noted to have eroding banks. Low shade cover percentages were found at 16 sites as well. Most of the issues were concentrated in two main stretches of the tributary.

Recommendations:

1. Visit farms along this drainage to discuss riparian better management practices
2. Implement a riparian restoration project along the lower section of this system to allow easier fish passage up the stream.

Figure 2: Map of Sheck Brook assessment



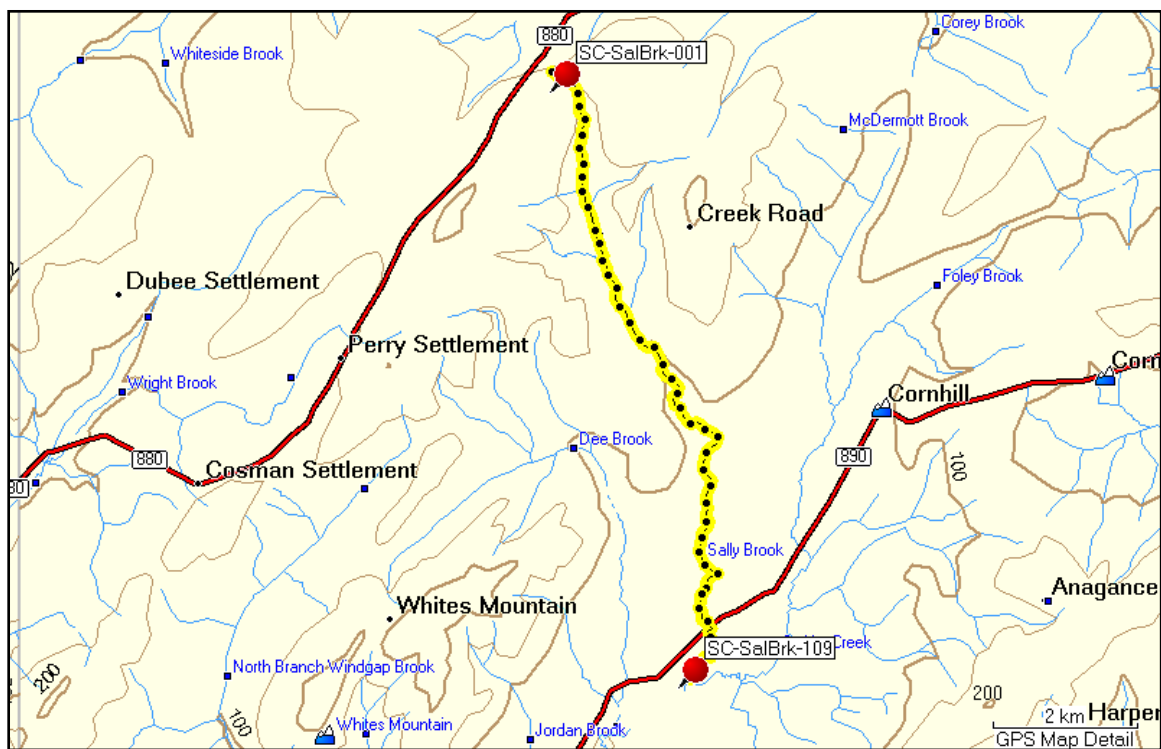
6.3 Sally Brook

Sally Brook, 10.9 km in length, within the Smith's Creek sub-watershed was assessed during the 2011 field assessment season. The 109 assessment sections resulted in 6 areas showing high temperatures and 33 sections containing high sand and fine content within the substrate and 48 areas with unstable or eroding banks. This system is mostly affected by forestry however there are also gravel pits in the area which may have an influence on the habitat.

Recommendations:

1. Monitor land use in this system including harvesting intensity and further resource extraction
2. Monitor substrate and water quality conditions for forestry and resource extraction impacts.

Figure 3: Map of Sally Brook assessment



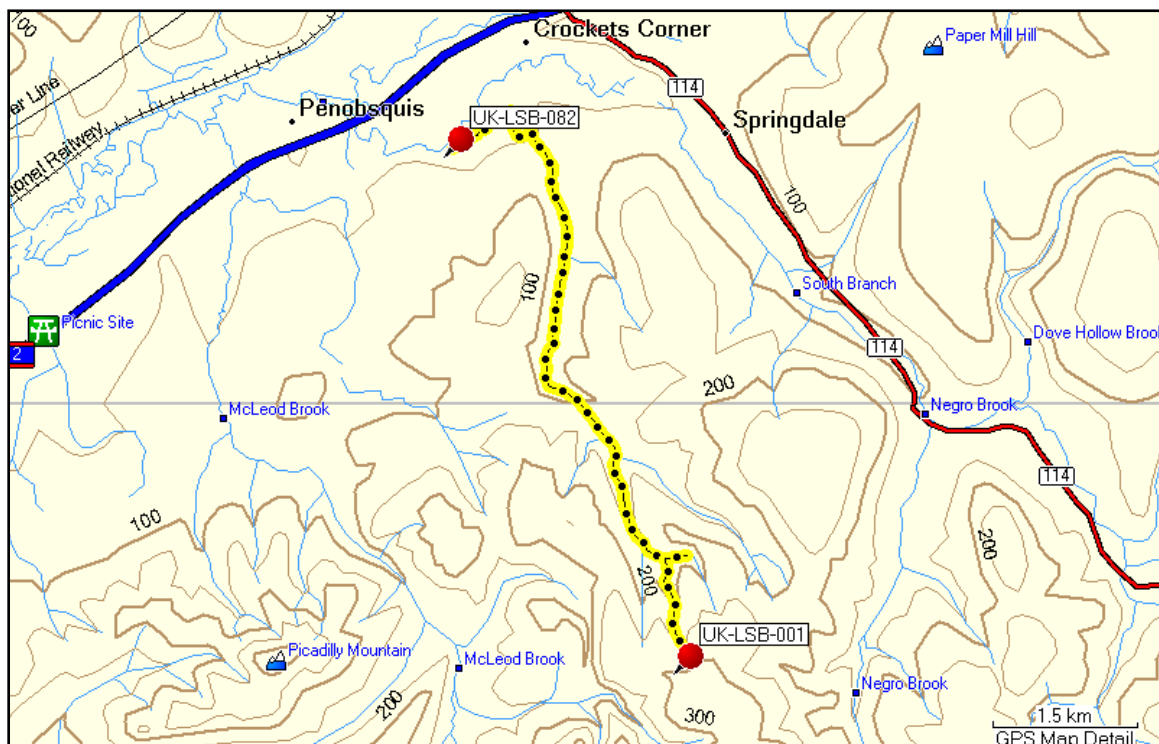
6.4 Little South Branch

Little South Branch, located within the Upper Kennebecasis sub-watershed resulted in being one of the more healthy streams of the 2011 assessment, especially considering the stress on the surrounding land. Of the 8.2 km assessed, 26 sites showed high sand and fine content although only 5 areas showed eroding or unstable banks and 3 areas of low shade. This particular area was of concern due to the various land uses that potentially affect it, including natural resource exploration, gravel pits, well pads, a highway crossing and an expanding mine site.

Recommendations:

1. Continue monitoring this site for land use changes causing damage to habitat
2. Consider maintaining the forested wetland areas along this stream or working with the landowners to implement a management plan
3. Perform population studies on this tributary and investigate impacts of stocked ponds on system.

Figure 4: Map of Little South Branch assessment



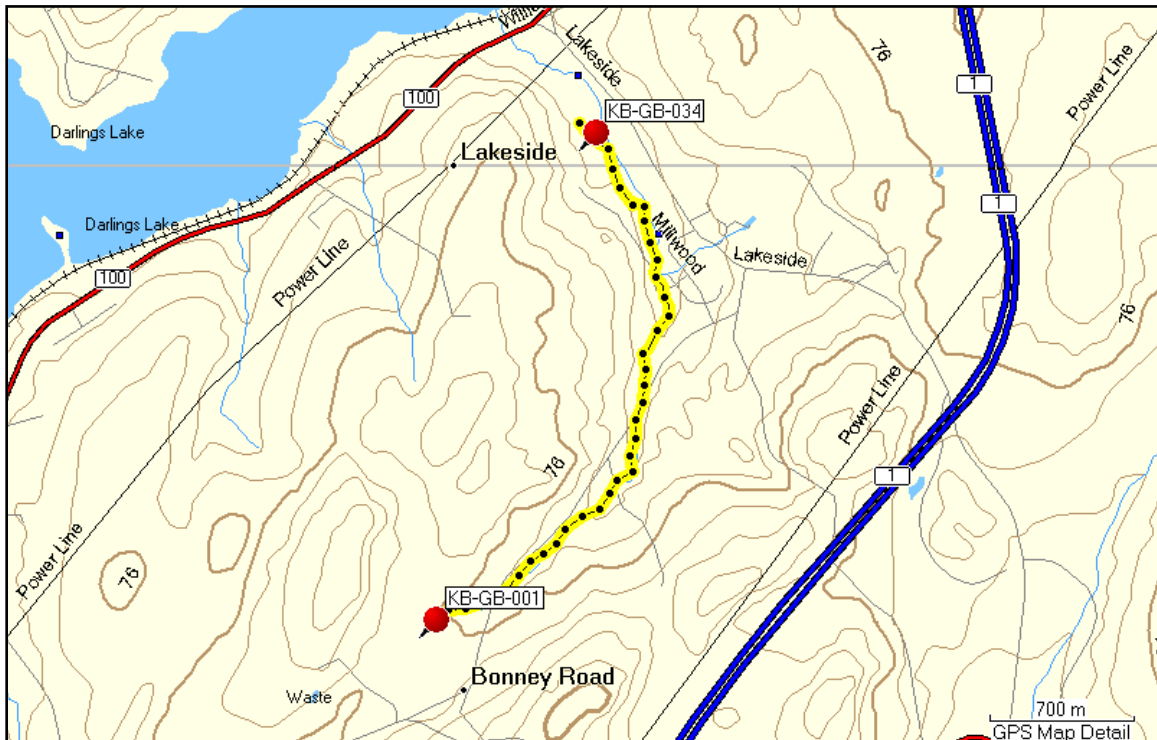
6.5 Grooms Brook

At 3.4 km in length, Grooms Brook found within the Kennebecasis Bay Composite area was the smallest system assessed in 2011. This stream is a fresh water input to the bay which flows through a wooded area and then into a residential area, which is putting some stress on the system. Riparian areas in this section are minimal and there were drainage pipes noted as well. It then becomes a wetland channel before completely losing its definition and entering the bay. The results show 15 areas with high sands and fines and 4 areas of eroding banks. The map below shows the location of the assessment area.

Recommendations:

1. Work with land owners to ensure that the stream remains free of garbage and that riparian buffer is maintained
2. Monitor pipes that are draining into the stream and sample to ensure they are not degrading water quality
3. Work to promote protection of the wetland ecosystem at the lower end of this tributary
4. Assess population diversity and health and determine if a fish ladder would be beneficial at the Hampton Bible Camp

Figure 5: Map of Grooms Brook assessment



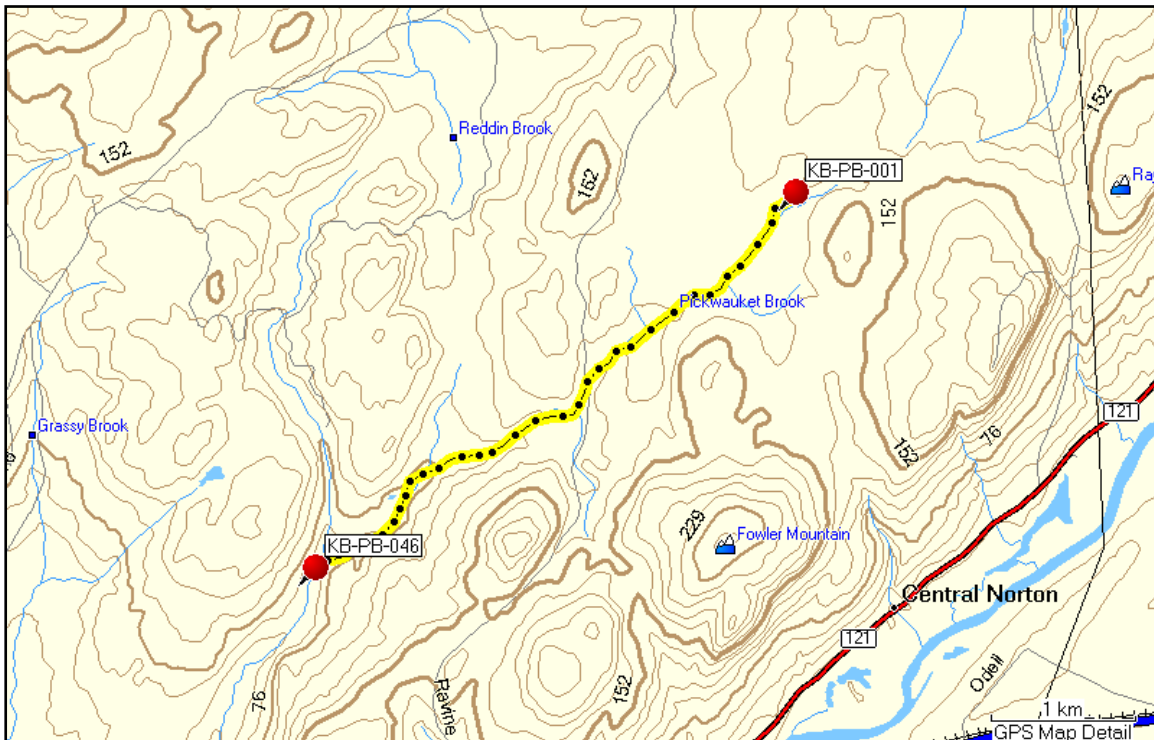
6.6 Pickwauket Brook

Due to weather conditions and time constraints, only 4.5 km of this system could be assessed including the headwaters downstream to the confluence with another tributary. Pickwauket Brook is another freshwater input of the Kennebecasis Bay Composite sub-watershed. Throughout the sections assessed it was found that 16 areas have unstable or eroding banks, 7 areas have high sand and fine content within the substrate and 7 areas also contain low shade cover percentage. This system is also highly impacted by beaver activity, resulting in the formation of several large dams and beaver ponds within these upper reaches.

Recommendations:

1. Continue assessing this system to gain an overall assessment of this system
2. Discuss with Hampton High School their habitat assessment findings.

Figure 6: Map of Pickwauket Brook assessment



Appendix A:

Kennebecasis Watershed Restoration Committee Members

KWRC Members

Municipal Partners

- Town of Sussex
- Town of Hampton
- Village of Sussex Corner
- Village of Norton

Government Partners

- Department of Natural Resources
- Department of Environment
- Department of Agriculture and Aquaculture
- Department of Transportation
- Department of Fisheries and Oceans
- Canadian Forest Service

Non-Government Partners

- Potash Corporation of Saskatchewan
- Corridor Resources
- Sussex Fish and Game Association
- Royal District Planning Commission
- Kings County Agri-Conservation Club (NBSCIA)
- Fundy Model Forest
- Canadian Rivers Institute

Appendix B:

Fish Species of the Kennebecasis Watershed

Fish Species within the Kennebecasis River Watershed

Family	Common Name	Genus-Species
Acipenseridae	Shortnose Sturgeon	<i>Acipenser brevirostrum</i>
Anguillidae	American Eel	<i>Anguilla rostrata</i>
Catostomidae	White Sucker	<i>Catostomus commersoni</i>
	Long Nose Sucker	<i>Catostomus catostomus</i>
Clupeidae	Alewife (Gaspereau)	<i>Alosa pseudoharengus</i>
	American Shad	<i>Alosa sapidissima</i>
Cottidae	Slimy Sculpins	<i>Cottus cognatus</i>
Cyprinidae	Creek Chub	<i>Semotilus atromaculatus</i>
	Pearl Dace	<i>Semotilus margarita</i>
	Blacknose Dace	<i>Rhinichthys atratulus</i>
	Fine-scale Dace	<i>Chrosmus neogaeus</i>
	Common Shiner	<i>Notropis cornutus</i>
	Golden Shiner	<i>Notemigonus crysoleucas</i>
Esocidae	Chain Pickerel	<i>Esox niger</i>
Gadidae	Burbot	<i>Lota lota</i>
Gasterosteidae	Fourspine Stickleback	<i>Apeltes quadracus</i>
	Threespine Stickleback	<i>Gasterosteus aculeatus</i>
	Ninespine Stickleback	<i>Pungitius pungitius</i>
Ictaluridae	Brown Bullheads	<i>Ictalurus nebulosus</i>
Percichthyidae	Striped Bass	<i>Morone saxatilis</i>
Petromyzontidae	Sea Lamprey	<i>Petromyzon marinus</i>
Salmonidae	Brook Trout	<i>Salvelinus fontinalis</i>
	Atlantic Salmon	<i>Salmo salar</i>
	Rainbow Trout	<i>Oncorhynchus mykiss</i>

Appendix C:

2011 Habitat Assessment Field Sheet

NWRC Stream Survey Sheet

General Information

Date: _____ Assessor(s): _____
 System: _____ Assessment Sheet: _____
 Stream order: _____ Reach length: 100m, assessed at 25 m intervals
 Landowner(s): _____ Picture(s): _____

Beginning of reach (GPS coordinates): N 45°
 End of reach (GPS coordinates): N 45°

POI (@__m)	Description				Bank	Temp.(°C)	DO(ppm)
See p	Trib.	Xing	Dam		lft. right		
See p	Trib.	Xing	Dam		lft. right		
See p	Trib.	Xing	Dam		lft. right		

Weather General:

Air Temp(°C): _____ Water Temp(°C): _____
 Days Since last Precipitation: _____ Type: Light Medium Heavy

Channel Characteristics

	%	0m	Dry Width	Wet Width	Depth
(Base %'s on observations @ 25, 50, 75, 100m)	Riffle	25 m			
	Run	50 m			
	Pool	75 m			
DO (taken @ 50m)		100m			
PH (taken @ 50m)		average:			

	Height (cm)	Erosion (circle one)		
Left Bank:		Stable	Mild	Heavy
Right Bank:		Stable	Mild	Heavy

Notes on channel: (circle one) Main Split Trib.

Substrate Characteristics

Breathable: Y / N
 (Riffles are not logged with sands & fines)

<input type="checkbox"/> Fines
<input type="checkbox"/> Sands
<input type="checkbox"/> Gravel
<input type="checkbox"/> Cobble
<input type="checkbox"/> Boulder
<input type="checkbox"/> Bedrock

Riparian Characteristics (Base %'s on observations @ 25, 50, 75, 100m)

Left Bank	Shade Cover:	Right Bank	Shade Cover:
Moss:	Shrubs:	Moss:	Shrubs:
Grass:	Trees:	Grass:	Trees:

Land use Description: Woodlot Agriculture Active Dam
 Residential Undevelopped Bog Roadway

Tree Types Present: Spruce Pine Maple Birch Oak Ash Fir
 Alder Cherry Elm Willow Hawthorne Apple Poplar

NOTES:

Appendix D:

Complete Data Tables
for
Habitat Assessments 2011

Shannon Brook Habitat Assessment

Data Spreadsheet 2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Bedrock	Boulder	Cobble	Substrate Comp			Pool	Riffle	Run	RB Cond.		LB Cond.		Vegetative cover				
											Gravel	Sands	Fines				Stable	Bare	Stable	Bare	moss	grasses	shrubs	trees	%shade
Shan-01	45°42.403	65°21.236	50	13.5	5	10.7	?	0	0	10	40	30	20	10	10	80	100	0	100	0	10	7.5	20	62.5	70
Shan-02	45°42.386	65°21.272	100	8.5	123	10.7	10.3	0	5	20	25	30	20	5	35	60	100	0	100	0	10	7.5	20	62.5	70
Shan-03	45°42.351	65°21.327	100	13	114	11	10.2	0	0	10	25	50	15	10	50	40	0	100	0	100	12.5	27.5	32.5	27.5	60
Shan-04	45°42.316	65°21.374	100	8	166	10.7	10.4	0	0	15	25	40	20	15	55	30	0	100	100	0	15	15	7.5	62.5	72.5
Shan-05	45°42.278	65°21.411	100	9.25	175	10.7	10.4	0	5	15	30	40	10	15	50	35	100	0	100	0	10	10	20	60	70
Shan-06	45°42.248	65°21.465	100	10	176	10.5	10.4	0	10	20	30	35	5	10	60	30	100	0	100	0	5	20	30	45	67.5
Shan-07	45 42.226	65 21.528	100	8.5	240	10.6	10.5	3	7	15	25	45	10	15	40	45	100	0	100	0	10	12.5	30	47.5	65
Shan-08	45 42.203	65 21.604	100	10.3	325	10.6	10.4	5	0	10	25	50	10	15	65	20	100	0	100	0	7.5	12.5	17.5	62.5	62.5
Shan-09	45 42.190	65 21.658	100	12.5	165	10.6	10.4	0	0	10	30	50	10	15	45	40	100	0	100	0	7.5	22.5	35	35	70
Shan-10	45 42.179	65 21.714	100	12	263	10.5	10.5	0	0	10	35	40	15	20	60	20	100	0	100	0	12.5	25	20	42.5	70
Shan-11	45 42.163	65 21.774	100	8.75	298	12.1	11	0	0	10	30	45	15	20	20	60	0	100	100	0	0	30	15	55	72.5
Shan-12	45 42.152	65 21.839	100	11.8	176	12	9.98	5	0	10	30	40	15	15	40	45	0	100	0	100	0	27.5	32.5	40	67.5
Shan-13	45 42.132	65 21.899	100	9.5	200	12.2	10.1	0	5	20	25	40	10	20	40	40	100	0	100	0	0	5	35	60	77.5
Shan-14	45 42.111	65 21.961	100	9.25	293	12.3	10.1	0	0	15	35	40	10	25	40	35	100	0	100	0	0	37.5	25	37.5	85
Shan-15	45 42.110	65 22.030	100	9.25	498	11.6	10	5	0	15	30	45	15	25	45	30	100	0	0	100	5	20	7.5	67.5	82.5
Shan-16	45 42.081	65 22.098	100	12	393	11.5	10.1	15	0	10	35	30	10	20	25	55	100	0	100	0	5	15	7.5	72.5	82.5
Shan-17	45 42.081	65 22.167	100	16.3	313	11	10.3	7	0	23	30	30	10	15	25	60	0	100	100	0	7.5	22.5	7.5	57.5	67.5
Shan-18	45 42.091	65 22.240	100	14.5	243	11	10.3	5	0	20	25	40	10	20	50	30	100	0	100	0	2.5	47.5	12.5	37.5	67.5

Shan-19	45°42.070	65°22.306	100	10.3	213	10.7	10.4	15	0	10	30	35	10	15	35	45	0	100	0	100	5	25	5	65	67.5
Shan-20	45°42.077	65°22.365	100	10.3	330	10.7	10.3	0	5	20	30	40	5	20	35	45	100	0	100	0	7.5	7.5	0	80	80
Shan-21	45°42.063	65°22.433	100	9.5	326	10.4	10.4	0	0	15	30	50	5	15	45	40	0	100	100	0	10	17.5	2.5	70	87.5
Shan-22	45°42.038	65°22.495	100	10.3	246	10.2	10.4	0	2	18	35	40	5	15	45	40	0	100	100	0	12.5	10	25	75	82.5
Shan-23	45°42.005	65°22.545	100	11.5	289	10.2	10.5	0	5	15	30	40	10	10	50	40	100	0	0	100	10	22.5	5	62.5	80
Shan-24	45°41.987	65°22.604	100	11	280	12.4	10.1	0	5	30	50	10	5	20	50	30	100	0	100	0	17.5	22.5	25	35	57.5
Shan-25	45°41.959	65°22.670	100	12.3	325	12.2	10.1	0	5	35	55	5	10	25	45	30	0	100	0	100	5	40	22.5	27.5	47.5
Shan-26	45°41.928	65°22.731	100	10.3	300	12.4	10.3	0	5	35	50	10	0	10	50	40	0	100	100	0	0	45	17.5	37.5	12.5
Shan-27	45°41.910	65°22.802	100	15	298	12.1	10.4	0	5	20	40	35	5	20	50	30	100	0	0	100	5	27.5	12.5	55	67.5
Shan-28	45°41.893	65°22.872	100	13	253	11.5	10.3	0	5	20	30	40	5	10	50	40	100	0	100	0	2.5	27.5	25	50	65
Shan-29	45°41.877	65°22.946	100	16	228	11.7	10.3	0	5	15	30	35	15	7	45	48	100	0	100	0	2.5	30	22.5	45	57.5
Shan-30	45°41.853	65°23.015	100	16.3	488	11.6	10.1	0	0	15	15	20	30	15	5	80	100	0	100	0	0	52.5	27.5	20	55
Shan-31	45°41.832	65°23.082	100	10	228	11.7	10.1			10	20	60	10	15	25	60	0	100	0	100	0	35	25	40	45
Shan-32	45°41.854	65°23.146	100	11.3	258	11.6	10.1	0	5	10	35	45	10	10	50	40	0	100	0	100	15	17.5	20	47.5	75
Shan-33	45°41.872	65°23.214	100	14	285	11.5	10.3	0	0	10	35	50	5	5	50	45	0	100	0	100	10	25	22.5	37.5	67.5
Shan-34	45°41.877	65°23.286	100	44	233	11.3	10.4	0	0	25	30	40	5	5	70	25	100	0	100	0	0	30	25	45	65
Shan-35	45°41.878	65°23.348	100	12.5	290	11.4	10.3	0	5	30	40	20	5	15	60	25	100	0	100	0	0	40	10	50	52.5
Shan-36	45°41.859	65°23.389	100	24.3	308	15.1	9.64	0	5	15	30	40	10	25	45	30	0	100	0	100	0	35	20	45	67.5
Shan-37	45°41.838	65°23.410	100	13.8	338	15.3	9.71	0	5	20	30	35	10	15	50	35	100	0	0	100	10	20	15	55	75
Shan-38	45°41.817	65°23.474	100	15	328	15.4	9.6	0	5	30	30	25	10	40	35	25	0	100	0	100	5	40	20	35	37.5
Shan-39	45°41.797	65°23.544	100	14	331	15.5	9.77	0	50	30	40	20	5	30	25	55	100	0	0	100	5	50	15	20	50
Shan-40	45°41.770	65°23.606	100	12.8	305	15.7	9.36	5	0	10	40	35	10	15	50	35	100	0	100	0	5	35	20	20	42.5
Shan-41	45°41.721	65°23.648	100	11.8	408	15.2	9.35	15	0	5	50	20	10	10	40	50	100	0	0	100	15	10	45	30	62.5
Shan-42	45°41.665	65°23.646	100	20	533	14.7	9.4	70	0	10	10	5	5	30	30	40	100	0	100	0	20	5	45	30	70
Shan-43	45°41.629	65°23.684	100	19.8	455	14.1	9.66	40	0	15	30	10	5	20	50	30	100	0	100	0	7.5	15	50	62.5	50
Shan-44	45°41.595	65°23.735	100	19.5	295	13.8	10	0	0	20	35	25	20	25	40	35	100	0	100	0	4	17.5	26	47.5	35
Shan-45	45°41.591	65°23.813	100	13	376	11.8	10.5	0	10	30	35	20	5	10	65	25	100	0	0	100	5	3.5	14	77.5	65
				13.3	282.3	12.0	10.2	9.3	6.1	17.2	32.1	34.0	10.2	16.5	43.2	40.4	67%	33%	64%	36%	6.644	23.8	20.83	48.9	64.4

Sheck Brook Habitat Assessment Data Spreadsheet 2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Bedrock	Boulder	Cobble	Gravel	Substrate Comp		Pool	Riffle	Run	RB Cond.		LB Cond.		Vegetative cover				
												Sands	Fines				Stable	Eroding	Stable	Eroding	moss	grasses	shrubs	trees	%shade
Sheck-01	N 45° 55.535	W 65°32.261	100	10	105	17.7	0	0	0	0	0	0	0	0	0	0	100		100		0	0	0	0	0
Sheck-02	N 45° 55.553	W 65°32.243	100	18.3	103	13	105	0	0	0	0	40	60	30	10	60	100		100		30	35	10	25	57.5
Sheck-03	N 45° 55.599	W 65° 32.242	100	16.5	117.5	13.8	101	0	0	0	25	55	20	20	30	50	100		100		18	32.5	7.5	42.5	67.5
Sheck-04	N 45° 55.645	W 65° 32.214	100	14.5	142.5	13.8	101	0	0	0	20	60	30	10	20	70	100		100		5	45	7.5	42.5	72.5
Sheck-05	N 45° 55.662	W 65° 32.151	100	10.5	107.5	13.7	102	0	0	0	15	50	35	10	15	75		100		5	40	12.5	42.5	77.5	
Sheck-06	N 45° 55.673	W 65° 32.098	100	12.6	120	13.4	98.6	0	0	5	35	45	15	20	20	60	100		100		0	40	5	55	80
Sheck-07	N 45° 55.655	W 65° 32.030	100	26.5	221.3	14.3	7.4	0	0	5	25	60	10	15	35	50	100		100		20	25	0	55	72.5
Sheck-08	N 45° 55.607	W 65° 31.988	100	17.8	222.5	14.2	7.79	0	0	5	20	60	15	20	35	45	100		100		18	7.5	5	70	82.5
Sheck-09	N 45° 55.580	W 65° 31.933	100	21	272.5	14	7.9	0	0	10	25	55	10	15	35	50	100		100		7.5	20	2.5	70	77.5
Sheck-10	N 45° 55.551	W 65° 31.876	100	20.8	197.5	13.9	8.5	0	0	10	40	40	10	25	30	45	100		100		7.5	12.5	10	70	67.5
Sheck-11	N 45° 55.522	W 65° 31.858	100	23.5	282.5	14.3	8.14	0	5	5	30	50	10	25	60	15	100		100		0	20	10	70	70
Sheck-12	N 45° 55.474	W 65° 31.827	100	25.5	235	14.3	8.38	0	0	0	35	55	10	30	20	50	100		100		7.5	35	0	57.5	77.5
Sheck-13	N 45° 55.431	W 65° 31.873	100	31	247.5	14	8.23	0	0	0	35	55	10	25	15	60	100		100		0	60	15	25	27.5
Sheck-14	N 45° 55.385	W 65° 31.984	100	34	205	15.9	8.49	0	0	5	35	50	10	45	10	45	100		100		5	50	7.5	37.5	55
Sheck-15	N 45° 55.344	W 65° 31.909	100	45.3	267.5	14	8.55	0	0	0	35	50	15	45	0	55	100		100		0	70	10	20	20
Sheck-16	N 45° 55.293	W 65° 31.927	100	32.8	327.5	13.8	8.74	0	0	5	30	50	15	35	15	50	100		100		7.5	35	10	22.5	67.5
Sheck-17	N 45° 55.249	W 65° 31.948	100	32.5	278.8	14.7	8.75	0	0	0	30	55	15	15	15	70		100		10	37.5	10	42.5	65	
Sheck-18	N 45° 55.188	W 65° 31.945	100	19.5	230	17.2	8.26	0	0	10	30	40	20	20	10	70	100		100		0	15	18.5	66.5	67.5
Sheck-19	N 45° 55.139	W 65° 31.936	100	15.3	310	17.4	8.34	0	0	15	30	45	10	30	10	60	100		100		0	65	12.5	22.5	22.5
Sheck-20	N 45° 55.087	W 65° 31.961	100	13.3	352.5	17.8	8.43	0	0	10	30	50	10	15	25	60	100		100		0	40	17.5	42.5	30

Sheck-21	N 45° 54.038	W 65° 31.960	100	14.5	253.8	18.1	8.63	0	0	10	25	45	20	45	5	50	100		100		0	75	17.5	7.5	7.5	
Sheck-22	N 45° 55.994	W 65° 31.969	100	21	230	18.3	8.46	0	0	3	17	55	25	30	60	10	100		100		0	45	17.5	37.5	45	
Sheck-23	N 45° 54.937	W 65° 31.977	100	22.5	225	18	8.54	0	5	5	25	60	5	35	50	15	100		100		0	30	15	55	65	
Sheck-24	N 45° 54.897	W 65° 31.986	100	24	250	17.1	7.92	0	15	15	20	40	10	45	45	10	100		100		0	22.5	12.5	40	67.5	
Sheck-25	N 45° 54.845	W 65° 31.983	100	32.5	325	16.3	8.49	0	10	10	30	35	15	30	65	5	100		100		0	25	17.5	57.5	62.5	
Sheck-26	N 45° 54.810	W 65° 31.974	100	16	320	16.8	8.21	0	5	5	25	50	15	30	60	10	100		100		0	25	30	45	70	
Sheck-27	N 45° 54.759	W 65° 31.959	100	22.5	200	16.2	8.62	0	3	5	30	50	7	20	60	20	100		100		0	15	30	55	67.5	
Sheck-28	N 45° 54.680	W 65° 31.955	100	20	225	18.7	7.61	0	0	5	40	40	15	25	50	25	100		100		0	10	27.5	65	80	
Sheck-29	N 45° 54.614	W 65° 31.942	100	22	265	18.3	8.15	0	0	5	30	50	15	25	55	20	100		100		2.5	20	20	57.5	72.5	
Sheck-30	N 45° 54.560	W 65° 31.932	100	19	290	17.9	8.33	0	0	5	35	45	15	5	65	30	100		100		0	20	37.5	42.5	70	
Sheck-31	N 45° 54.508	W 65° 31.977	100	12.5	300	17.7	8.22	0	5	10	35	40	10	5	70	25	100		100		5	15	17.5	62.5	67.5	
Sheck-32	N 45° 54.479	W 65° 32.015	100	16	370	19.8	7.9	0	5	15	25	35	10				100		100		0	12.5	12.5	50	82.5	
Sheck-33	N 45° 54.431	W 65° 32.028	100	12.5	350	19.4	8.06	0	0	20	30	40	10	20	40	40	100		100		2.5	10	15	72.5	77.5	
Sheck-34	N 45° 54.392	W 65° 32.082	100	11.5	245	19.5	7.92	0	0	15	35	35	15	15	50	35	100		100		0	20	12.5	67.5	62.5	
Sheck-35	N 45° 54.346	W 65° 32.090	100	16	320	19.4	8.12	0	0	20	30	40	10	20	55	25	100		100		0	42.5	20	37.5	42.5	
Sheck-36	N 45° 54.346	W 65° 32.116	100	14.5	345	19.5	8.33	0	5	15	40	40	10	40	40	20	100			mild	0	27.5	15	57.5	67.5	
Sheck-37	N 45° 54.260	W 65° 32.125	100	11	360	19.4	8.26	0	0	15	35	45	5	30	55	15	100		100		0	17.5	22.5	60	75	
Sheck-38	N 45° 54.192	W 65° 32.169	100	14	360	19.1	8.1	0	0	5	35	40	20	40	55	5	100		100		0	20	17.5	62.5	70	
Sheck-39	N 45° 54.154	W 65° 32.177	100	12.5	295	19.3	8.12	0	5	20	35	30	10	25	65	10	100		100		0	75	12.5	12.5	10	
Sheck-40	N 45° 54.112	W 65° 32.195	100	15.5	285	19.1	8.5	0	0	10	35	45	10	30	60	10	100			heavy	0	77.5	12.5	10	12.5	
Sheck-41	N 45° 54.058	W 65° 32.203	100	13	375	19.1	7.55	0	0	10	35	40	15	5	75	20	100		100		0	30	20	50	60	
Sheck-42	N 45° 54.015	W 65° 32.201	100	14.5	345	18.5	8.5	0	0	10	25	50	15	10	60	30			mild	100		0	27.5	35	37.5	75
Sheck-43	N 45° 53.974	W 65° 32.219	100	14.5	325	18.1	8.63	0	5	15	30	40	10	10	60	30	100		100		0	15	35	50	75	
Sheck-44	N 45° 53.940	W 65° 32.271	100	19.5	315	17.7	8.58	0	5	10	35	40	10	15	60	35			mild	100		0	15	25	28.5	80
Sheck-45	N 45° 53.995	W 65° 32.273	100	18	335	17.6	9.62	0	5	15	25	40	15	5	55	40	100		100		2.5	17.5	30	50	80	
Sheck-46	N 45° 53.875	W 65° 32.206	100	21.5	445	17.1	8.7	0	5	10	25	50	10	15	65	20			mild	100		2.5	15	27.5	55	75
Sheck-47	N 45° 53.846	W 65° 32.153	100	12	425	16.9	8.95	0	5	5	30	50	10	10	65	25	100			mild	0	22.5	15	62.5	72.5	
Sheck-48	N 45° 53.796	W 65° 32.122	100	16	485	20.4	8.1	20	10	15	20	30	5	5	20	75	100			heavy	10	15	25	45	75	
Sheck-49	N 45° 53.795	W 65° 32.043	100	19	495	20.2	8.16	5	10	15	20	20	10	10	75	15	100		100		15	30	20	50	72.5	
Sheck-50	N 45° 53.775	W 65° 31.968	100	27.5	462.5	20.1	8.35	10	10	5	10	45	10				100		100		0	17.5	32.5	50	70	
Sheck-51	N 45° 53.730	W 65° 31.956	100	18	510	19.7	8.75	0	0	10	45	35	10	25	70	5	100			mild	0	17.5	25	57.5	77.5	
Sheck-52	N 45° 53.674	W 65° 31.969	100	21	425	19.5	8.37	0	0	15	35	35	15	20	45	35	100		100		0	20	35	45	72.5	
Sheck-53	N 45° 53.643	W 65° 31.931	100	24.5	525	19.1	8.48	10	5	35	20	25	5	10	55	35	100		100		0	30	25	45	72.5	

Sheck-54	N 45° 53.599	W 65° 31.897	100	24	480	19	8.6	5	5	10	20	50	10	25	30	45	100			mild	0	27.5	22.5	50	70		
Sheck-55	N 45° 53.550	W 65° 31.886	100	20	415	18.8	8.59	0	0	20	30	45	5	15	65	20	100		100		0	20	35	45	75		
Sheck-56	N 45° 53.500	W 65° 31.870	100	20.5	515	18.7	8.48	0	5	10	35	50	10	10	60	30	100		100		0	10	30	60	67.5		
Sheck-57	N 45° 53.460	W 65° 31.831	100	19	570	17.9	8.5	0	0	15	25	50	10	5	55	40	100			mild	0	52.5	17.5	30	42.5		
Sheck-58	N 45° 53.409	W 65° 31.838	100	23	512	18	8.85	0	0	20	25	45	10	15	45	40		mild		mild	0	62.5	10	27.5	42.5		
Sheck-59	N 45° 53.355	W 65° 31.831	100	27	425	17.8	8.75	5	5	15	20	45	10	25	42	30	100		100		0	77.5	7.5	15	15		
Sheck-60	N 45° 53.305	W 65° 31.811	100	17.5	590	17.7	8.96	5	5	15	25	40	10	10	60	30		mild		mild	0	90	2.5	7.5	1.5		
Sheck-61	N 45° 53.253	W 65° 31.828	100	21.5	617.5	17.9	8.95	5	10	20	25	30	10	15	60	25	100		100		0	77.5	15	7.5	17.5		
Sheck-62	N 45° 53.205	W 65° 31.816	100	21	417.5	17.4	8.84	5	10	20	30	30	5	10	30	60	100		100		0	10	20	70	70		
Sheck-63	N 45° 53.168	W 65° 31.801	100	18	390	17.3	8.98	5	5	30	30	25	5	0	75	25	100		100		0	15	27.5	57.5	65		
Sheck-64	N 45° 53.130	W 65° 31.853	100	19	455	17.1	8.98	5	10	30	25	25	5	10	50	40	100		100		0	20	17.5	64	65		
Sheck-65	N 45° 53.081	W 65° 31.838	100	21	350	17	8.89	0	5	20	25	40	10	5	50	45	100		100		0	40	10	50	45		
Sheck-66	N 45° 53.037	W 65° 31.815	100	15.5	455	16.8	8.85	0	5	30	25	35	5	20	50	30	100		100		0	55	25	20	62.5		
Sheck-67	N 45° 52.985	W 65° 31.786	100	17	500	16.8	8.84	0	0	15	35	45	5	20	25	55	100		100		2.5	27.5	30	40	62.5		
						19.6	333.1	17.2	15.2	1.2	2.8	11.0	27.9	43.0	12.4	14.1	51.0	34.7	90%	10%	87%	13%	2.7	32.1	17.5	44.8	59.6

Sally Brook Habitat Assessment
Data Spreadsheet
2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Substrate Comp						Pool	Riffle	Run	RB Cond.		LB Cond.		Vegetative cover				
								Bedrock	Boulder	Cobble	Gravel	Sands	Fines				Stable	Eroding	Stable	Eroding	moss	grasses	shrubs	trees	%shade
SalBrk-001	45°57.112	65°24.114	100	5	118	17	8.55	0	0	5	25	60	15	5	55	40	100	0	0	100	5	27.5	12.5	55	77.5
SalBrk-002	45°57.093	65°24.053	100	10.75	157.5	17	9.54	0	0	5	30	60	5	25	35	45	100	0	100	0	5	25	10	60	80
SalBrk-003	45°57.049	65°23.007	100	18.75	115	16.4	8.8	0	0	10	40	40	10	35	25	45	100	0	100	0	2.5	20	15	62.5	77.5
SalBrk-004	45°57.001	65°23.976	100	18.75	136.25	16.7	9.44	0	0	10	40	45	5	35	15	55	100	0	100	0	2.5	20	12.5	65	80
SalBrk-005	45°56.956	65°23.958	100	13.25	172.5	16.7	8.54	0	0	10	35	50	5	25	35	40	0	100	100	0	7.5	30	10	47.5	82.5
SalBrk-006	45°56.907	65°23.958	100	29.5	178.75	17.1	9.5	0	0	10	50	35	5	15	40	45	0	0	0	0	2.5	22.5	7.5	67.5	77.5
SalBrk-007	45°56.867	65°23.967	100	34.66	95	17.6	8.73	0	0	0	40	55	5	15	10	75	100	0	100	0	0	35	10	55	70
SalBrk-008	45°56.185	65°23.898	100	17.25	165	19.4	9.46	0	0	5	35	55	5	15	65	10	100	0	100	0	0	35	10	55	67.5
SalBrk-009	45°56.773	65°23.910	100	25.75	177.5	19	10.25	0	0	0	65	30	5	0	0	0	100	0	100	0	0	32.5	10	57.5	67.5
SalBrk-010	45°56.729	65°23.924	100	15.5	173.75	19.3	9.39	0	0	50	30	15	5	5	45	45	100	0	100	0	0	25	5	70	80
SalBrk-011	45°56.688	65°23.924	100	14.5	332.5	19.3	10.15	0	0	10	65	20	5	5	80	15	100	0	100	0	0	22.5	25	75	87.5
SalBrk-012	45°56.640	65°23.956	100	12	470	19.8	9.87	0	0	50	25	20	5	0	90	10	100	0	100	0	0	22.5	2.5	75	87.5
SalBrk-013	45°56.596	65°23.963	100	10.75	257.5	15.6	9.85	0	5	40	30	20	5	10	75	15	100	0	100	0	5	15	10	70	82.5
SalBrk-014	45°56.557	65°23.937	100	11.5	282.5	15.8	10.33	0	5	40	30	20	5	15	55	30	100	0	100	0	2.5	17.5	10	70	80
SalBrk-015	45°56.517	65°23.932	100	11	317.5	16.7	10.56	0	3	35	40	20	2	13	35	50	100	0	100	0	0	20	10	70	80
SalBrk-016	45°56.470	65°23.923	100	9.5	347.5	17	10.59	0	5	50	25	20	0	25	40	35	100	0	100	0	0	15	10	75	75
SalBrk-017	45°56.425	65°23.931	100	14	280	16.7	10.63	0	0	30	40	25	5	15	30	55	100	0	100	0	0	17.5	12.5	70	75
SalBrk-018	45°56.374	65°23.937	100	13.5	283.75	17.2	10.6	0	5	15	50	25	5	20	45	35	100	0	100	0	0	15	15	70	75
SalBrk-019	45°56.324	65°23.939	100	10.25	158.75	16.9	10.56	0	0	10	50	35	5	10	45	45	100	0	100	0	0	12.5	15	72.5	72.5

SalBrk-020	45°56.275	65°23.938	100	14.5	361.25	19.1	10.28	0	0	35	40	20	5	10	30	60	100	0	100	0	0	10	12.5	77.5	77.5
SalBrk-021	45°56.237	65°23.905	100	12.25	280	17.1	10.68	0	0	30	40	25	5	5	45	50	100	0	100	0	2.5	10	10	77.5	80
SalBrk-022	45°56.187	65°23.900	100	15.5	258.75	17.9	10.63	0	0	20	30	40	10	10	45	45	100	0	100	0	0	35	12.5	75	72.5
SalBrk-023	45°56.148	65°23.872	100	14	300	18.1	9.09	0	0	15	40	40	5	5	50	45	100	0	100	0	0	15	7.5	75	72.5
SalBrk-024	45°55.108	65°23.841	100	13	270	17.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SalBrk-025	45°55.980	65°23.797	100	14.25	277.5	17.6	12.9	0	5	25	35	25	10	10	30	60	100	0	0	100	0	20	10	65	77.5
SalBrk-026	45°55.933	65°23.775	100	22	260	17.6	10.15	0	5	35	25	30	5	35	15	50	100	0	100	0	0	67.5	12.5	20	35
SalBrk-027	45°55.888	65°22.747	100	49.5	405	17.3	3.91	0	0	0	5	50	45	60	5	35	100	0	100	0	0	67.5	7.5	25	25
SalBrk-028	45°55.843	65°23.732	100	28	342.5	18.1	7.9	0	5	25	20	35	15	20	15	65	100	0	100	0	0	27.5	12.5	60	57.5
SalBrk-029	45°55.800	65°23.705	100	13.25	295	17.7	8.65	0	10	30	20	35	5	15	30	55	0	100	100	0	10	15	17.5	57.5	70
SalBrk-030	45°55.751	65°23.710	100	15.25	360	16.5	9.32	0	5	30	30	25	10	10	30	60	0	100	0	100	2.5	20	17.5	60	70
SalBrk-031	45°55.711	65°23.667	100	11	360	16.3	9.59	0	5	30	35	25	5	10	25	65	0	100	100	0	7.5	15	20	57.5	62.5
SalBrk-032	45°55.644	65°23.662	100	11	271.25	16.1	9.27	0	5	35	30	25	5	10	15	75	0	100	100	0	7.5	12.5	27.5	52.5	67.5
SalBrk-033	45°55.616	65°23.614	100	20.5	420	15	9.38	0	5	15	30	45	5	10	40	50	0	100	100	0	10	15	22.5	52.5	72.5
SalBrk-034	45°55.577	65°23.593	100	17.25	307.5	14.7	10.98	0	0	15	30	50	5	10	25	65	0	100	0	100	7.5	12.5	30	50	75
SalBrk-035	45°55.551	65°23.559	100	20	322.5	14.4	8.99	0	10	25	25	35	5	10	40	50	0	100	0	100	17.5	5	27.5	50	72.5
SalBrk-036	45°55.504	65°23.574	100	10.25	367.5	14.2	9.11	0	0	20	35	35	10	15	40	45	0	100	100	0	20	7.5	30	42.5	70
SalBrk-037	45°55.458	65°23.568	100	25.75	447.5	14	14.32	0	5	30	25	30	10	30	25	45	100	0	0	100	22.5	12.5	17.5	47.5	72.5
SalBrk-038	45°55.413	65°23.524	100	27.25	390	13.9	11.67	0	0	30	30	30	10	15	40	45	0	100	0	100	12.5	12.5	25	50	67.5
SalBrk-039	45°55.378	65°23.468	100	25.5	315	13.7	11.12	0	0	10	30	50	10	40	10	50	100	0	100	0	0	45	30	25	40
SalBrk-040	45°55.350	65°23.452	100	28.5	277.5	18.1	10.6	0	5	5	25	58	7	35	20	45	100	0	100	0	0	40	27.5	32.5	55
SalBrk-041	45°55.288	65°23.429	100	25.75	552.5	18.1	10.3	0	0	35	30	30	5	30	45	25	100	0	100	0	7.5	5	12.5	75	72.5
SalBrk-042	45°55.248	65°23.396	100	22.5	387.5	17.9	10.07	0	0	0	30	60	10	20	30	50	0	0	0	0	2.5	10	12.5	75	72.5
SalBrk-043	45°55.203	65°23.360	100	28.75	392.5	17.7	9.92	0	0	25	30	35	10	15	30	55	0	100	100	0	2.5	10	12.5	75	70
SalBrk-044	45°55.162	65°23.314	100	29	312.5	17.3	10.05	0	0	10	40	43	7	30	15	55	100	0	100	0	5	15	20	60	65
SalBrk-045	45°55.125	65°23.289	100	22	335	16.9	10.25	0	0	10	30	50	10	20	10	70	100	0	100	0	0	15	12.5	72.5	70
SalBrk-046	45°55.111	65°23.237	100	36.25	410	16.5	11.78	0	5	25	35	30	5	10	30	60	100	0	100	0	10	5	12.5	72.5	70
SalBrk-047	45°55.111	65°23.156	100	28	535	16.2	11.75	0	0	10	20	60	10	35	10	55	100	0	100	0	0	12.5	35	57.5	62.5
SalBrk-048	45°55.075	65°23.128	100	26	475	16.1	10.33	0	0	30	35	30	5	20	40	40	100	0	0	100	5	15	15	65	62.5
SalBrk-049	45°55.035	65°23.090	100	24	390	15.9	9.85	0	0	20	30	45	5	20	15	65	100	0	100	0	0	10	22.5	67.5	65
SalBrk-050	45°54.977	65°23.063	100	32.5	432.5	15.8	9.25	0	0	20	25	45	5	10	30	60	100	0	100	0	0	20	12.5	67.5	77.5
SalBrk-051	45°54.933	65°23.078	100	33.75	422.5	15.7	11.6	0	0	15	30	45	10	30	15	55	100	0	100	0	2.5	13.5	27.5	56.5	70

SalBrk-052	45°54.895	65°23.035	100	30	447.5	16.4	10.82	0	0	25	25	40	10	15	15	70	0	100	100	0	0	7.5	20	72.5	70
SalBrk-053	45°54.872	65°22.972	100	34.75	425	16.3	9.38	0	0	5	25	60	10	15	10	75	100	0	100	0	0	10	15	75	82.5
SalBrk-054	45°54.849	65°22.936	100	26.5	480	16.3	9.31	0	10	20	25	35	10	5	25	70	100	0	100	0	0	12.5	30	57.5	70
SalBrk-055	45°54.812	65°22.881	100	32.5	382.5	16.2	9.19	0	0	15	25	50	10	0	15	85	100	0	100	0	0	17.5	30	52.5	67.5
SalBrk-056	45°54.756	65°22.916	100	35.5	530	16.2	9.27	0	0	15	30	40	15	10	15	75	100	0	100	0	0	7.5	12.5	80	70
SalBrk-057	45°54.735	65°22.953	100	37	370	16.1	9.5	0	0	5	25	55	15	5	15	80	100	0	100	0	0	12.5	10	77.5	72.5
SalBrk-058	45°54.678	65°22.945	100	45.75	447.5	16.1	9.15	0	0	15	15	50	20	20	10	70	100	0	100	0	0	35	7.5	57.5	67.5
SalBrk-059	45°54.653	65°22.886	100	29.75	462.5	16.1	9.23	0	0	10	30	50	10	0	20	80	100	0	100	0	0	25	20	55	72.5
SalBrk-060	45°54.615	65°22.860	100	21.5	552.5	17.3	9.89	0	5	15	15	55	10	15	20	65	100	0	100	0	0	12.5	20	67.5	67.5
SalBrk-061	45°54.572	65°22.819	100	24	390	17.2	10	0	0	10	15	60	15	15	20	65	100	0	100	0	0	10	20	70	70
SalBrk-062	45°54.534	65°22.770	100	20.75	392.5	16.9	10.54	0	0	5	30	50	15	10	20	70	100	0	100	0	0	20	12.5	67.5	77.5
SalBrk-063	45°54.549	65°22.699	100	21.75	422.5	17	10.42	0	0	10	20	60	10	25	15	60	100	0	100	0	0	12.5	17.5	70	72.5
SalBrk-064	45°54.528	65°22.645	100	17.25	395	16.6	9.74	0	0	20	25	45	10	10	10	80	0	100	0	100	0	22.5	15	62.5	70
SalBrk-065	45°54.493	65°22.609	100	49	440	17.8	2.55	0	5	20	25	30	20	60	0	40	100	0	100	0	0	12.5	10	27.5	32.5
SalBrk-066	45°54.473	65°22.536	100	16.5	242.5	16.5	9.33	0	10	25	25	30	10	10	30	60	100	0	100	0	0	27.5	12.5	60	70
SalBrk-067	45°54.436	65°22.483	100	27.75	405	17	9.05	0	5	20	30	35	10	10	20	70	0	100	0	100	0	30	12.5	57.5	60
SalBrk-068	45°54.392	65°22.491	100	19.25	357.5	16.7	9.81	0	0	10	25	50	15	15	20	65	100	0	100	0	0	22.5	5	72.5	62.5
SalBrk-069	45°54.364	65°22.541	100	25.25	517.5	16.8	10.37	0	0	15	5	65	15	15	25	60	100	0	100	0	0	32.5	12.5	55	57.5
SalBrk-070	45°54.322	65°22.587	100	15.75	382.5	16.7	9.84	0	10	25	20	40	5	20	35	45	100	0	0	100	0	27.5	10	62.5	55
SalBrk-071	45°54.288	65°22.612	100	22.25	475	16.5	10.78	0	5	30	15	40	10	20	55	25	0	100	100	0	0	12.5	22.5	65	65
SalBrk-072	45°54.239	65°22.636	100	23.5	425	16.3	10.88	0	5	30	20	35	10	10	55	35	100	0	100	0	0	10	22.5	67.5	67.5
SalBrk-073	45°54.190	65°22.640	100	28	437.5	16.2	10.76	0	10	30	10	40	10	20	45	35	0	100	100	0	0	12.5	20	67.5	70
SalBrk-074	45°54.157	65°22.598	100	30.5	555	15.5	11.91	0	5	25	15	40	15	15	15	70	100	0	100	0	0	10	20	70	72.5
SalBrk-075	45°54.116	65°22.542	100	30.75	450	15.7	10.83	0	0	25	25	40	10	15	20	65	0	100	100	0	5	15	15	67.5	70
SalBrk-076	45°54.073	65°22.557	100	23.5	492.5	15.6	9.17	0	5	45	35	10	5	15	20	65	100	0	100	0	2.5	12.5	22.5	62.5	72.5
SalBrk-077	45°54.034	65°23.573	100	28.75	572.5	15.5	9.49	0	0	10	50	30	5	25	10	65	100	0	100	0	0	22.5	32.5	45	70
SalBrk-078	45°54.987	65°23.608	100	22.5	467.5	15.5	10.34	0	0	15	55	20	10	10	55	35	100	0	100	0	7.5	7.5	22.5	62.5	72.5
SalBrk-079	45°54.941	65°23.606	100	21.5	575	15.5	9.97	0	2	30	53	10	5	10	35	55	100	0	100	0	2.5	15	17.5	65	75
SalBrk-080	45°54.905	65°23.592	100	33.5	430	15.5	9.5	0	1	50	25	19	5	15	40	45	100	0	100	0	0	30	15	45	50
SalBrk-081	45°53.852	65°22.600	100	30.75	550	15.7	9.15	0	5	35	15	35	10	10	30	60	100	0	100	0	0	17.5	15	67.5	67.5
SalBrk-082	45°53.796	65°22.583	100	19.5	435	16.4	9.27	0	0	15	30	45	10	5	20	75	100	0	100	0	0	22.5	12.5	65	70
SalBrk-083	45°53.760	65°22.588	100	26	407.5	16.4	9.7	0	0	10	15	65	10	30	10	60	100	0	100	0	0	25	10	65	67.5

SalBrk-084	45°53.718	65°22.643	100	33	370	16.4	9.01	0	0	13	30	45	12	25	10	65	100	0	0	100	2.5	30	7.5	60	67.5
SalBrk-085	45°53.683	65°22.649	100	35	532.5	16.3	9.01	0	0	5	20	65	10	0	15	85	100	0	100	0	0	30	15	55	60
SalBrk-086	45°53.635	65°22.657	100	18	510	16	9.02	0	0	10	25	60	5	5	30	65	0	100	0	100	5	20	5	70	72.5
SalBrk-087	45°53.581	65°22.676	100	22.5	495	15.7	9	0	0	15	30	50	5	5	20	75	0	100	100	0	0	17.5	10	72.5	72.5
SalBrk-088	45°53.533	65°22.650	100	17.25	475	15.7	8.67	0	0	10	20	65	5	5	45	50	100	0	100	0	2.5	25	25	47.5	77.5
SalBrk-089	45°53.483	65°22.627	100	26.75	370	15.6	8.78	0	0	0	15	75	10	10	25	65	0	100	100	0	0	15	22.5	62.5	76
SalBrk-090	45°53.453	65°22.258	100	26	457.5	15.4	8.72	0	5	15	30	40	10	0	30	70	0	100	100	0	0	17.5	5	77.5	87.5
SalBrk-091	45°53.432	65°22.536	100	18.75	550			0	15	20	20	40	5	5	35	60	0	100	0	100	7.5	10	5	77.5	77.5
SalBrk-092	45°53.388	65°22.549	100	23.5	545			0	13	15	20	45	7	5	45	55	0	100	0	100	7.5	25	7.5	60	70
SalBrk-093	45°53.348	65°22.606	100	22.5	495			0	10	15	25	45	5	5	45	50	100	0	0	100	2.5	27.5	7.5	62.5	67.5
SalBrk-094	45°53.297	65°22.610	100	23	535			0	5	10	30	50	5	5	55	40	100	0	100	0	0	22.5	7.5	70	77.5
SalBrk-095	45°53.249	65°22.648	100	35	560	15.2	9.27	0	5	30	30	30	5	10	5	85	0	100	0	100	0	20	17.5	62.5	65
SalBrk-096	45°53.209	65°22.681	100	19.75	550	15.4	9.27	0	12	23	25	30	10	10	10	80	100	0	100	0	0	60	17.5	22.5	22.5
SalBrk-097	45°53.157	65°22.680	100	15.75	397.5	15.5	10.01	0	10	20	30	35	5	10	35	55	100	0	100	0	0	20	27.5	67.5	67.5
SalBrk-098	45°53.108	65°22.658	100	23	402.5	15.4	10.5	0	0	25	30	40	5	18	12	70	0	100	0	100	0	25	10	65	72.5
SalBrk-099	45°53.057	65°22.653	100	20.75	435	15.6	9.41	0	3	25	25	40	7	20	20	60	100	0	100	0	0	35	15	50	55
SalBrk-100	45°53.028	65°22.592	100	35	597.5	15.5	9.85	0	0	10	30	40	20	40	15	45	100		100		0	15	32.5	52.5	42.5
SalBrk-101	45°52.982	65°22.568	100	33	531.7	15.8	9.24	0	0	20	30	40	10	35	10	55	100			100	0	42.5	20	37.5	57.5
SalBrk-102	45°52.943	65°22.572	100	18.25	501.25	15.7	9.57	0	0	20	25	45	10	25	20	55	100		100		0	10	25	65	77.5
SalBrk-103	45°52.891	65°22.565	100	17.25	465	15.8	9.6	0	0	10	25	60	5	20	15	65		100	100		0	15	22.5	62.5	77.5
SalBrk-104	45°52.838	65°22.564	100	25.75	545	15.7	8.78	0	0	5	25	60	10	15	5	80	100				0	20	17.5	62.5	72.5
SalBrk-105	45°52.790	65°22.570	100	11.7	482.5	16.2	8.96	0	0	10	25	60	5	20	15	65		100			0	27.5	15	57.5	70
SalBrk-106	45°52.774	65°22.261	100	20.9	530	15.1	9.09	0	5	15	20	50	10	10	10	80	100		100		0	15	10	70	65
SalBrk-107	45°52.741	65°22.683	100	18.75	553.75	14.8	9	0	0	5	15	70	10	20	10	70	100				0	30	10	60	67.5
SalBrk-108	45°52.692	65°22.696	100	17.25	465	18.2	8.67	0	0	10	35	50	5	15	40	45		100	100		7.5	17.5	20	55	72.5
SalBrk-109	45°52.657	65°22.734	100	11.5	512.5	17.8	8.73	0	0	10	30	50	10	5	45	50		100			0	25	25	50	70
				22.7	393.9	16.5	9.6	0	2.4	18.8	28.7	40.7	8.5	15.7	27.9	54.6	71%	29%	76%	24%	2.2	20.3	15.8	60.6	68.3

Little South Branch Habitat Assessment Data Spreadsheet 2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Bedrock	Boulder	Cobble	Gravel	Sands	Fines	Pool	Riffle	Run	RB Cond.		LB Cond.		Vegetative cover				
																	Stable	Eroding	Stable	Eroding	moss	grasses	shrubs	trees	%shade
LSB-001	N 45° 43.570	W 65° 19.687	100	4	90	11.9	9.4	10	35	30	20	5	0				100		100		15	10	10	65	87.5
LSB-002	N 45° 43.627	W 65° 19.730	100	4	110		7.8	0	35	30	20	5	0				100		100		15	10	10	65	87.5
LSB-003	N 45° 43.678	W 65° 19.765	100			13		10	30	35	20	5	0								17.5	7.5	7.5	52.5	80
LSB-004	N 45° 43.724	W 65° 19.797	100					10	35	30	20	5	0				100		100		10	7.5	12.5	70	80
LSB-005	N 45° 43.775	W 65° 19.818	100					10	35	30	20	5	0								12.5	10	12.5	50	87.5
LSB-006	N 45° 43.826	W 65° 19.811	100																		20	5	10	65	82.5
LSB-007	N 45° 43.878	W 65° 19.800	100					0	5	15	65	15	0								15	7.5	7.5	70	75
LSB-008	N 45° 43.925	W 65° 19.823	100					0	5	15	65	15	0				100		100		15	7.5	7.5	70	75
LSB-009	N 45° 43.975	W 65° 19.859	100					0	5	15	65	15	0								15	5	10	70	75
LSB-010	N 45° 44.009	W 65° 19.886	100					0	5	20	50	15	0												
LSB-011	N 45° 44.058	W 65° 19.867	100					0	5	20	60	15	0								10	5	5	80	80
LSB-012	N 45° 44.080	W 65° 19.878	100					0	5	20	60	15	0								5	10	10	75	80
LSB-013	N 45° 44.155	W 65° 19.705	100	5	75	12		0	0	0	65	20	15	30	30	40	100		100		20	5	5	70	72.5
LSB-014	N 45° 44.148	W 65° 19.784	100	6.5	142	14		0	0	0	60	30	10	30	30	40	100		100		10	0	10	80	87.5
LSB-015	N 45° 44.141	W 65° 19.854	100	8	140	11.7	3.7	0	0	0	60	30	10	30	30	40	100		100		5	5	10	80	87.5
LSB-016	N 45° 44.133	W 65° 19.888	100	8	110	11.7		0	15	35	35	10	5	15	50	35	100		100		5	10	15	70	75
LSB-017	N 45° 44.148	W 65° 20.953	100	4.5	132			0	5	15	60	15	5	20	50	30					5	10	25	60	75
LSB-018	N 45° 44.177	W 65° 20.018	100																		5	5	10	80	70
LSB-019	N 45° 44.222	W 65° 20.050	100	5	180	11.7	4.1	0	15	15	60	10	0	15	55	30	100		100		5	7.5	20	12.5	70
LSB-020	N 45° 44.254	W 65° 20.108	100					0	10	30	50	10	0	60	30	10	100		100		5	7.5	20	12.5	70

LSB-021	N 45° 44.299	W 65° 20.144	100	5.5	413			0	5	45	30	20	0	60	20	20	100		100		10	10	20	55	75
LSB-022	N 45° 44.344	W 65° 20.169	100	8	170	11.8	4.2	0	5	40	30	20	5	30	20	30	100		100		5	10	25	60	70
LSB-023	N 45° 44.385	W 65° 20.187	100	8	300	12		0	10	50	30	10	0	60	30	10	100		100		5	5	15	70	80
LSB-024	N 45° 44.488	W 65° 20.209	100		300			5	10	60	20	5	0	80	20	0	100		100		5	10	15	70	75
LSB-025	N 45° 44.537	W 65° 20.216	100	6	300			0	5	60	25	10	0			20	100		100		5	10	25	60	75
LSB-026	N 45° 44.575	W 65° 20.246	100					0	10	60	30	0	0	70	25	5	100		100		5	5	30	60	80
LSB-027	N 45° 44.619	W 65° 20.281	100					0	5	15	55	20	5								5	5	25	65	75
LSB-028	N 45° 44.670	W 65° 20.292	100					0	0	5	35	50	10								5	5	30	60	65
LSB-029	N 45° 44.716	W 65° 20.266	100					0	0	5	5	70	20								5	5	30	60	75
LSB-030	N 45° 44.760	W 65° 20.276	100					0	0	5	5	70	20								5	5	30	60	75
LSB-031	N 45° 44.800	W 65° 20.323	100					0	0	0	5	60	35								5	5	30	60	75
LSB-032	N 45° 44.836	W 65° 20.366	100	11	450	14		0	0	5	15	60	20	60	15	15					10	10	20	60	65
LSB-033	N 45° 44.873	W 65° 20.413	100	8	165	14.3	2.9	0	0	10	40	20	25	50	30	20					10	10	20	60	65
LSB-034	N 45° 44.911	W 65° 20.458	100	8.5	215			0	0	5	35	40	20	70	20	10	100		100		10	10	20	60	70
LSB-035	N 45° 44.952	W 65° 20.507	100					0	0	5	10	45	40				100		100		5	15	25	55	60
LSB-036	N 45° 45.989	W 65° 20.550	100					0	0	0	5	25	70				100		100		10	10	20	60	65
LSB-037	N 45° 45.029	W 65° 20.585	100			14.5		0	0	10	25	40	25	100			100		100		5	10	20	65	70
LSB-038	N 45° 45.050	W 65° 20.640	100	3	271	14		0	0	15	40	30	15	50	30	20	100		100		5	10	15	70	80
LSB-039	N 45° 45.078	W 65° 20.701	100					0	0	5	25	40	30	60	20	20	100		100		5	5	20	70	75
LSB-040	N 45° 45.091	W 65° 20.766	100	8	120			0	0	20	40	30	10					mild			5	5	20	70	75
LSB-041	N 45° 45.106	W 65° 20.816	100	6	138	12.9	6.6	0	5	60	20	10	5	25	45	30		mild	100		5	10	10	75	80
LSB-042	N 45° 45.147	W 65° 20.841	100	7.5	155	12.5	8.2	0	5	50	30	10	5	10	40	50	100		100		5	10	5	80	65
LSB-043	N 45° 45.194	W 65° 20.833	100	8	195	12.4	7.3	0	5	30	40	20	5	10	40	50	100		100		7.5	7.5	10	70	75
LSB-044	N 45° 45.252	W 65° 20.840	100	7.5	155	12.9	8.0	0	0	30	40	20	10	20	40	40	100		100		12.5	12.5	10	60	60
LSB-045	N 45° 45.301	W 65° 20.815	100	10	180			0	0	0	50	20	30	90	5	5									
LSB-046	N 45° 45.316	W 65° 20.802	100	11	130	15.6	6.4	0	0	5	30	40	25	30	25	45	100		100		20	20	20	40	65
LSB-047	N 45° 45.367	W 65° 20.778	100	13	360	19.2	7.3																		
LSB-048	N 45° 45.352	W 65° 20.751	100	15.5	180	15.6	6.1	0	0	5	20	60	15	10	80	10	100		100		0	25	5	70	80
LSB-049	N 45° 45.469	W 65° 20.751	100	15	280	15.1	6.1	0	0	5	30	50	15	10	80	10	100		100		0	25	5	70	80
LSB-050	N 45° 45.528	W 65° 20.752	100	7	220	15.2	7.8	0	0	5	50	30	15	15	70	15	100		100		0	25	5	70	65
LSB-051	N 45° 45.572	W 65° 20.749	100	15	191	14.7	7.0	0	0	10	45	35	10	25	65	10	100		100		0	20	10	70	65
LSB-052	N 45° 45.621	W 65° 20.729	100	9	180	14.7	7.4	0	0	0	5	75	20	30	55	15	100		100		5	20	15	60	65

LSB-053	N 45° 45.677	W 65° 20.723	100	10.5	217.5	11.4	1.4	0	0	30	40	20	10	80	0	20	100		100		5	35	5	55	65	
LSB-054	N 45° 45.734	W 65° 20.701	100	9.5	115	11.2	5.6	0	0	30	40	20	10	30	5	65	100		100		40	10	20	30		
LSB-055	N 45° 45.778	W 65° 20.689	100	10.5	255	10.1	7.0	0	0	10	10	20	10	45	10	45	100		100		20	15	20	45	70	
LSB-056	N 45° 45.827	W 65° 20.688	100	9.5	242.5	10.3	8	0	0	5	30	35	30	30	10	60		100		100		20	15	15	45	75
LSB-057	N 45° 45.884	W 65° 20.670	100	11	267.5	10.4	8.7	0	0	0	15	45	40	20	5	75	100		100		10	25	15	50	80	
LSB-058	N 45° 45.939	W 65° 20.667	100	7.8	272.5	10.6	8.6	0	0	5	15	40	40	35	15	50	100			100		15	15	10	60	55
LSB-059	N 45° 45.986	W 65° 20.666	100	7.5	311.3	11.1	8.9	0	0	0	15	45	40	40	10	50	100		100		5	5	15	75	75	
LSB-060	N 45° 46.046	W 65° 20.691	100	7.8	250	11.1	8.9	0	0	0	25	50	25	20	20	60	100		100		10	15	15	60	75	
LSB-061	N 45° 46.100	W 65° 20.714	100	12.5	260	11.1	8.7	0	0	10	20	60	10	40	20	50	100		100		15	15	20	50	80	
LSB-062	N 45° 46.154	W 65° 20.754	100	12.3	368.8	10.9	8.6	0	0	20	30	30	20	35	30	35	100		100		10	10	30	50	75	
LSB-063	N 45° 46.203	W 65° 20.778	100	9	357.5	11.4	9.3	0	5	20	30	25	20	30	20	50	100		100		10	10	30	50	60	
LSB-064	N 45° 46.249	W 65° 20.795	100	21	320	11.8	11.8	0	10	20	40	20	10	25	25	50	100		100		20	20	25	35	60	
LSB-065	N 45° 46.307	W 65° 20.784	100	10.5	317.5	11.2	8.3	0	10	25	15	30	20	10	45	45	100		100		5	30	20	40	65	
LSB-066	N 45° 46.357	W 65° 20.808	100	13.3	325	11.7	8.3	5	10	25	20	30	10	10	40	50	100		100		5	15	30	50	60	
LSB-067	N 45° 46.389	W 65° 20.831	100	24.5	487.5	10.4	8.9	5	0	15	45	25	10	30	20	50	100		100		5	5	40	50	70	
LSB-068	N 45° 46.433	W 65° 20.888	100	11.8	375	10.3	9.0	5	5	20	40	20	10	30	35	35	100		100		40	10	25	25	75	
LSB-069	N 45° 46.478	W 65° 20.922	100	19.8	238.8	9.8	9.4	0	10	25	45	15	5	15	40	45	100		100		40	10	30	20	60	
LSB-070	N 45° 46.508	W 65° 20.992	100	24.3	260	9.9	9.3	0	15	20	45	15	5	40	20	40	100		100		0	5	40	30	40	
LSB-071	N 45° 46.503	W 65° 21.052	100	41.3	310	10.3	10.8	0	10	20	50	15	5	35	25	40	100		100		5	15	20	30	60	
LSB-072	N 45° 46.551	W 65° 21.106	100	19	292.5	10.4	9.7	0	0	10	60	20	10	10	40	50	100		100		0	50	15	35	60	
LSB-073	N 45° 46.592	W 65° 21.112	100	15.8	342.5	10.5	9.2	0	0	20	60	20	10	15	15	70	100		100		0	50	15	35	65	
LSB-074	N 45° 46.635	W 65° 21.143	100	33	355			0	0	5	40	30	25	10	10	80	100		100		0	70	10	20	70	
LSB-075	N 45° 46.618	W 65° 21.228	100	13.8	247.5			0	0	0	10	45	45	15	10	75	100		100		0	75	10	15	60	
LSB-076	N 45° 46.575	W 65° 21.267	100	22.5	287.5			0	0	0	5	65	30	10	5	85	100		100		0	50	5	45	80	
LSB-077	N 45° 46.538	W 65° 21.325	100	17.8	292.5			0	0	0	5	55	40	10	10	80	100		100		0	40	10	50	80	
LSB-078	N 45° 46.507	W 65° 21.388	100	18.3	355			0	0	0	0	50	50	15	5	80	100		100		0	40	10	50	80	
LSB-079	N 45° 46.457	W 65° 21.528	100	47.5	492.6			0	0	0	0	50	50	0	0	100	100		100		0	60	10	30	70	
LSB-080	N 45° 46.492	W 65° 21.467	100	50	600			0	0	0	0	50	50	0	0	100	100		100		0	75	15	10	70	
				13.1	256.3	12.3	7.6	0.8	5	17.0	32.1	28.8	15.5	32.5	27.5	40.5	73%	27%	73%	27%	8.7	16.4	16.8	55.2	72.1	

Grooms Brook Habitat Assessment Data Spreadsheet 2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Bedrock	Boulder	Cobble	Gravel	Substrate Comp		Pool	Riffle	Run	RB Cond.		LB Cond.		Vegetative cover				
												Sands	Fines				Stable	Eroding	Stable	Eroding	moss	grasses	shrubs	trees	%shade
KB-GB-001	N 45° 28.807	W 65° 51.072	100	12.5	115.3	8.7	7.2	0	0	5	5	60	30	15	75	10	100		100		10	20	0	70	75
KB-GB-002	N 45° 28.843	W 65° 51.021	100	11.8	117.5	8.8	9.13	0	0	5	25	35	35	10	70	20	100		100		30	20	0	50	75
KB-GB-003	N 45° 28.846	W 65° 50.951	100	10.8	140	8.7	9.18	0	0	10	30	30	30	20	20	60	100		100		25	15	5	55	80
KB-GB-004	N 45° 28.863	W 65° 50.887	100	10.8	140	8.6	9.56	0	0	10	40	30	20	20	20	60	100		100		30	15	5	50	80
KB-GB-005	N 45° 28.892	W 65° 50.808	100	12.5	157.5	8.5	9.41	0	0	5	25	40	30	25	35	40	100		100		10	10	0	40	80
KB-GB-006	N 45° 28.935	W 65° 50.751	100	8.5	122.5	8.8	9.14	0	0	5	55	30	10	30	30	40	100		100		10	0	0	70	80
KB-GB-007	N 45° 28.970	W 65° 50.716	100	6.8	135	9	9.22	0	5	5	45	25	25	30	35	35	100		100		10	0	20	70	65
KB-GB-008	N 45° 28.992	W 65° 50.666	100	11.8	192.5	8.9	9.36	0	10	20	40	20	10	30	20	50	100		100		15	0	0	60	80
KB-GB-009	N 45° 29.016	W 65° 50.615	100	13.5	251.3	8.8	8.52	0	5	15	45	25	10	20	40	40	100		100		20	10	0	40	80
KB-GB-010	N 45° 29.054	W 65° 50.583	100	13.8	185	8.6	9.54	0	5	15	45	30	5	20	40	40	100		100		10	5	0	30	80
KB-GB-011	N 45° 29.088	W 65° 50.517	100	9.8	232.5	8.4	9.66	0	15	25	40	15	5	20	30	50	100		100		10	10	0	40	80
KB-GB-012	N 45° 29.108	W 65° 50.455	100	9.5	271.3	8.5	9.67	0	10	20	20	40	10	10	70	20	100		100		10	10	0	30	80
KB-GB-013	N 45° 29.151	W 65° 50.414	100	11	265	6.6	11.36	0	10	30	40	15	5	20	40	40	100		100		5	20	0	30	60
KB-GB-014	N 45° 29.188	W 65° 50.382	100	12.5	233.8	6.7	11.01	0	10	25	35	20	10	25	35	40	100		100		40	5	0	45	75
KB-GB-015	N 45° 29.209	W 65° 50.327	100	14.8	282.5	6.7	10.95	0	10	35	20	25	10	20	50	30	100		100		25	5	0	45	72.5
KB-GB-016	N 45° 29.251	W 65° 50.335	100	15	297.5	6.9	10.73	0	10	20	30	30	10	10	60	30	100		100		20	15	0	40	80
KB-GB-017	N 45° 29.292	W 65° 50.315	100	11.5	276.3	6.9	10.77	0	15	25	30	25	5	20	40	40	100		100		20	10	0	40	75
KB-GB-018	N 45° 29.345	W 65° 50.312	100	17.8	268.8	7.1	10.75	0	10	20	40	20	10	15	65	20	100		100		10	30	10	30	65
KB-GB-019	N 45° 29.390	W 65° 50.284	100	15	287.5	7.2	10.51	0	5	20	30	25	20	30	35	35	100		100		30	10	5	40	70
KB-GB-020	N 45° 29.435	W 65° 50.278	100	12.8	285	7.2	10.45	0	5	35	20	25	15	15	40	45	100		100		20	10	5	35	70

KB-GB-021	N 45° 29.478	W 65° 50.275	100	14.8	318.8	7.3	10.45	0	0	25	30	25	20	20	40	40	100		100		25	5	5	40	75
KB-GB-022	N 45° 29.531	W 65° 50.263	100	14.5	373.8	7.3	10.55	0	0	20	20	40	20	35	35	30	100		100		10	10	0	60	80
KB-GB-023	N 45° 29.578	W 65° 50.230	100	12	415	6.4	11.39			20	30	30	20	30	35	35	100		100		15	15	0	40	65
KB-GB-024	N 45° 29.192	W 65° 50.192	100	10	355	6.6	11.06	0	0	15	25	40	20	40	25	35		100	100		5	10	30	30	65
KB-GB-025	N 45° 29.663	W 65° 50.211	100	30.8	383.3	6.9	10.96	0	0	15	35	30	20	35	35	30		100		100	0	30	20	50	60
KB-GB-026	N 45° 29.715	W 65° 50.238	100	16.8	427.5	6.9	10.95	0	0	0	10	50	40	25	20	55	100			100	0	45	20	35	60
KB-GB-027	N 45° 29.759	W 65° 50.239	100	16.3	491.3	7.1	10.85	0	0	0	10	60	30	20	30	50	100		100		10	30	20	40	50
KB-GB-028	N 45° 29.807	W 65° 50.262	100	20.5	400	7.2	10.72	0	0	0	5	55	40	20	10	70	100		100		0	40	10	50	50
KB-GB-029	N 45° 29.862	W 65° 50.284	100	28.8	403.8	7.2	10.66	0	0	0	10	50	40	20	30	50	100		100		5	30	25	40	55
KB-GB-030	N 45° 29.910	W 65° 50.319	100	21.8	302.5	7.7	10.25	0	0	0	25	45	30	40	20	40	100		100		5	25	10	60	80
KB-GB-031	N 45° 29.955	W 65° 50.366	100	24.3	245	7.8	10.19	0	0	0	25	45	30	30	20	50	100		100		5	25	10	60	75
KB-GB-032	N 45° 30.004	W 65° 50.395	100	25.5	241.3	8.1	9.9	0	0	0	30	30	40	45	10	45	100		100		0	30	10	60	75
KB-GB-033	N 45° 30.057	W 65° 50.412	100	25	311.3	8	9.86	0	0	0	25	60	15	40	10	50	100		100		0	30	15	55	80
KB-GB-034	N 45° 30.82	W 65° 50.474	100	40.8	300			0	0	0	20	40	40				100		100		0	30	10	60	70
				16.0	271.3	7.7	10.1	0	3.8	13.1	28.2	34.3	20.9	24.4	35.5	40.2	94%	6%	94%	6%	12.9	16.9	6.9	46.8	71.8

Pickwauket Brook Habitat Assessment Data Spreadsheet 2011

Position			Stream and Channel Conditions											Habitat			Stream Bank Status				Riparian Zone Status				
Waypoint #	Northing	Westing	Length	Depth	Wet Width (cm)	Temperature (°C)	Dissolved O2 (ppm)	Bedrock	Boulder	Cobble	Gravel	Substrate Comp		Pool	Riffle	Run	Stable	Eroding	Stable	Eroding	Vegetative cover				
												Sands	Fines								moss	grasses	shrubs	trees	%shade
PB-001	45° 35.567	65° 48.78	100	24.5	108	6.6	8.8									100		100		100	20	40	10	30	90
PB-002	45° 35.528	65° 48.811	100	18	57.3	6.2	8.8									100		100		100	0	60	10	30	
PB-003	45° 35.476	65° 48.827	100	20	135	6.4	9.3						100			100		100		100	20	25	15	40	90
PB-004	45° 35.433	65° 48.862	100	21.5	125	6.7	9.7									100		100		100	25	15	10	50	90
PB-005	45° 35.395	65° 48.902	100	18	167.5	6.4	9.8	0	0	10	0	0	90	0	10	90	100		100		10	20	10	60	90
PB-006	45° 35.349	65° 48.951	100	18.5	196.3	6.9	9.3	0	5	5	10	30	50	5	10	85	100		100		10	40	10	40	80
PB-007	45° 35.310	65° 49.001	100	50	120	8.5	5.4											100		100	5	45	5	45	0
PB-008	45° 35.279	65° 49.065	100	20	240	7.7	8.7											100		100	0	50	0	50	0
PB-009	45° 35.232	65° 49.099	100	32.8	325	8.7	8.9	0	5	5	15	40	30	10	10	80	100		100		10	30	10	50	70
PB-010	45° 35.206	65° 49.165	100	32	160	8.5	9.1	0	0	0	5	15	80	10	15	75	100		100		5	35	10	50	10
PB-011	45° 35.206	65° 49.241	100	51	141.3	7.6	9.1							0	10	90		100		100	0	20	20	60	60
PB-012	45° 35.171	65° 49.301	100	27.3	250	8.5	10.2	0	20	20	30	20	10	30	35	35	100		100		10	30	20	40	90
PB-013	45° 35.138	65° 49.356	100	12.5	265	8.5	10.3	0	10	30	20	20	20	20	40	40	100		100		20	10	20	50	85
PB-014	45° 35.106	65° 49.414	100	23	265	8.6	8.6	0	10	30	40	15	5	25	35	40	100		100		10	20	30	40	85
PB-015	45° 35.077	65° 49.471	100	15.8	278.8	8.9	10.1	0	5	15	80	20	10	30	30	40	100		100		10	30	20	40	80
PB-016	45° 35.041	65° 49.525	100	25	297.5	9	9.9	0	5	15	40	30	10	25	30	45	100		100		15	25	20	40	80
PB-017	45° 35.009	65° 49.584	100	33.5	248.8	9.1	9.9	0	5	25	30	30	10	35	20	45	100		100		0	60	10	30	75
PB-018	45° 34.994	65° 49.654	100	62.5	287.5	9.1	9.7	0	0	0	20	65	15	0	0	100	100		100		0	90	10	0	0
PB-019	45° 34.956	65° 49.694	100	91.3	775	9.2	9.6	0	0	0	20	65	15	0	0	100		100		100	0	90	10	0	0

PB-020	45° 34.929	65° 49.754	100	18.8	537.5	9	9.9	0	10	20	40	20	10	20	40	40	100		100		10	40	10	40	70
PB-021	45° 43.880	65° 49.815	100	30	455	9.9	9.8	0	5	25	40	20	10	20	30	50	100		100		5	40	15	40	70
PB-022	45° 43.830	65° 49.830	100	25.3	297.5	9.8	9.9	0	10	30	30	20	10	10	40	50	100		100		10	35	15	40	65
PB-023	45°34.798	65° 49.856	100	31.5	261.3	9.8	10.0	0	10	40	35	10	5	10	45	45	100		100		20	30	15	35	70
PB-024	45° 34.761	65° 49.886	100	18.8	367.5	10	10.1	0	20	40	30	10	0	10	35	55	100		100		30	10	10	30	80
PB-025	45° 34.754	65° 49.942	100	25	470	10.1	9.9	5	15	30	30	15	5	10	30	60	100		100		15	7.5	5	30	85
PB-026	45° 34.756	65° 50.018	100	25	410	10.1	10.2	5	15	40	25	10	5	10	40	50	100		100		15	10	5	30	85
PB-027	45° 34.733	65° 50.086	100	23.5	390	10.1	10.3	0	10	40	40	10	0	10	30	60	100		100		20	15	5	40	75
PB-028	45° 34.709	65° 50.143	100	19.8	432.5	10.1	10.2	5	15	40	30	10	0	15	35	50	100		100		15	20	5	30	70
PB-029	45° 34.682	65° 50.202	100	25.5	348.8	10.1	10.4	10	15	45	20	5	5	20	40	40	100		100		20	10	10	40	70
PB-030	45° 34.645	65° 50.263	100	22.5	343.8	10.2	10.1	5	15	40	30	10	0	10	60	30	100		100		20	10	10	50	75
PB-031	45° 34.616	65° 50.322	100	25.5	335	10.2	10.1	5	15	40	30	7	3	20	30	50	100		100		20	20	10	30	70
PB-032	45° 34.606	65° 50.389	100	24.8	330	10.2	10.2	5	15	40	30	10	0	20	30	50	100		100		20	15	5	40	70
PB-033	45° 34.604	65° 50.479	100	24.5	407.5	10.3	10.0	5	15	40	30	10	0	30	35	35	100		100		10	30	10	40	
PB-034	45° 34.592	65°50.545	100	23.3	395	10.3	10.1	10	15	20	35	15	5	30	35	35	100		100		20	10	10	40	65
PB-035	45° 34.558	65° 50.611	100	23.5	443.8	4	13.6	20	15	25	30	10	0	25	40	35	100		100		20	30	10	40	70
PB-036	45°34.537	65° 50.692	100	21.3	298.8	4	13.6	10	15	20	30	20	5	30	30	40	100		100		20	30	10	40	65
PB-037	45° 34.510	65°50.761	100	18.3	298.8	4	13.6	10	20	30	30	10	0	25	25	50	100		100		10	30	10	50	70
PB-038	45°34.457	65° 50.758	100	17.3	445	4	13.6	5	15	30	30	15	5	20	40	40	100		100		20	30	10	40	65
PB-039	45° 34.406	65° 50.816	100	21.8	342.5	4	13.6	5	15	30	30	20	0	30	40	30	100		100		10	20	10	60	80
PB-040	45°34.356	65° 50.844	100	22.5	413.8	4	13.6	10	15	25	40	10	0	30	35	35	100		100		10	20	10	60	70
PB-041	45° 34.311	65° 50.903	100	26	377.5	4	13.6	10	20	35	25	10	0	10	45	45	100		100		20	10	10	60	65
PB-042	45° 34.280	65° 50.971	100	20.3	327.5	4	13.6	5	15	20	40	15	5	10	45	45	100		100		20	20	10	50	70
PB-043	45° 34.266	65° 51.050	100	23.5	405	4	13.6	5	10	25	40	15	5	15	40	45	100		100		25	15	10	50	75
PB-044	45°34.229	65° 51.106	100	26.8	413.8	4	13.6	10	10	30	40	10	0	20	45	35	100		100		25	15	10	50	80
PB-045	45° 34.211	65° 51.199	100	17.8	452.5	4	13.6	0	10	20	40	20	10	10	45	45	100		100		20	20	10	50	65
				26.7	321.0	7.7	10.6	3.8	11.2	25.7	30.5	18.1	13.7	16.9	31.5	56.0	82%	8%	82%	8%	13.8	28.4	11.1	41.1	66.7