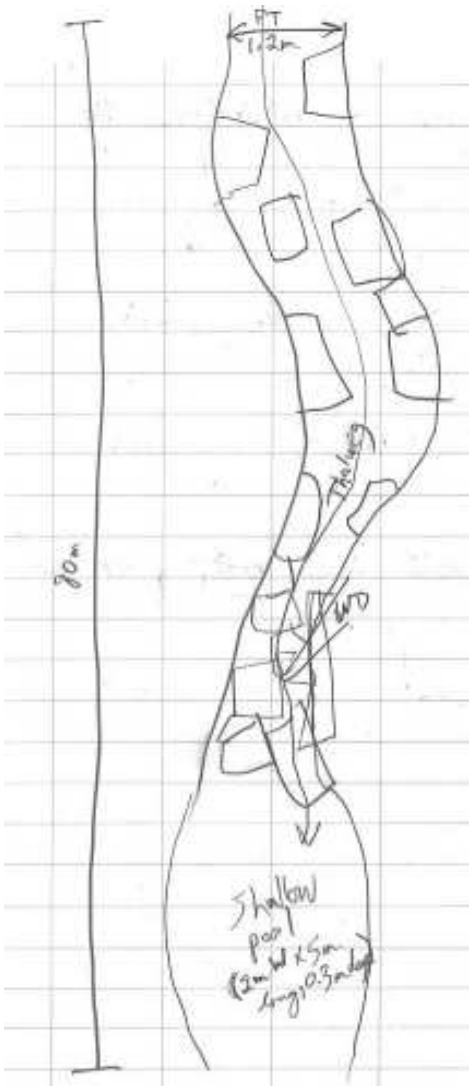
APPENDIX 5.9-A

FRESHWATER HABITAT SURVEY SKETCHES AND PHOTOS

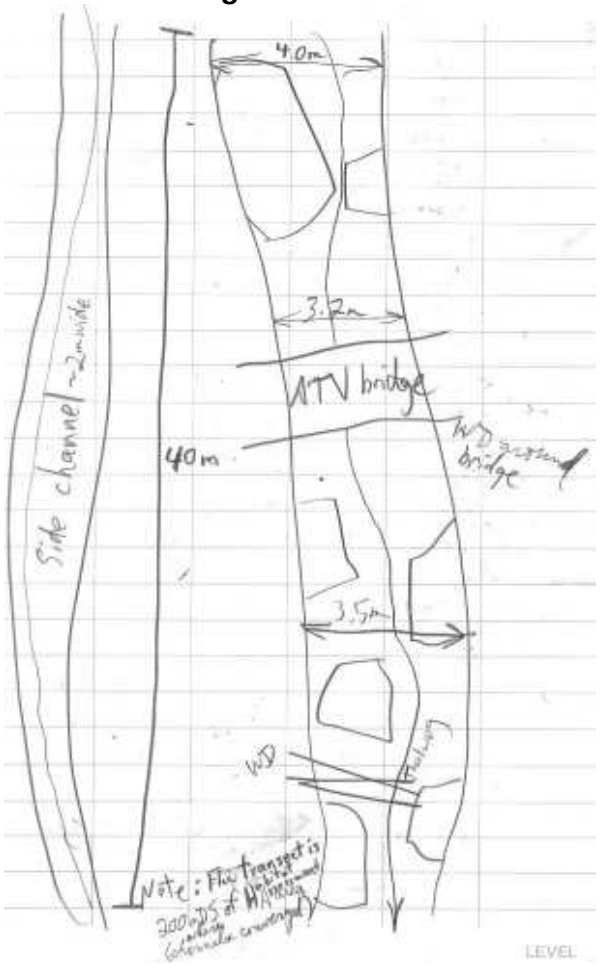
Stream Crossing #01



Downstream:

Upstream:

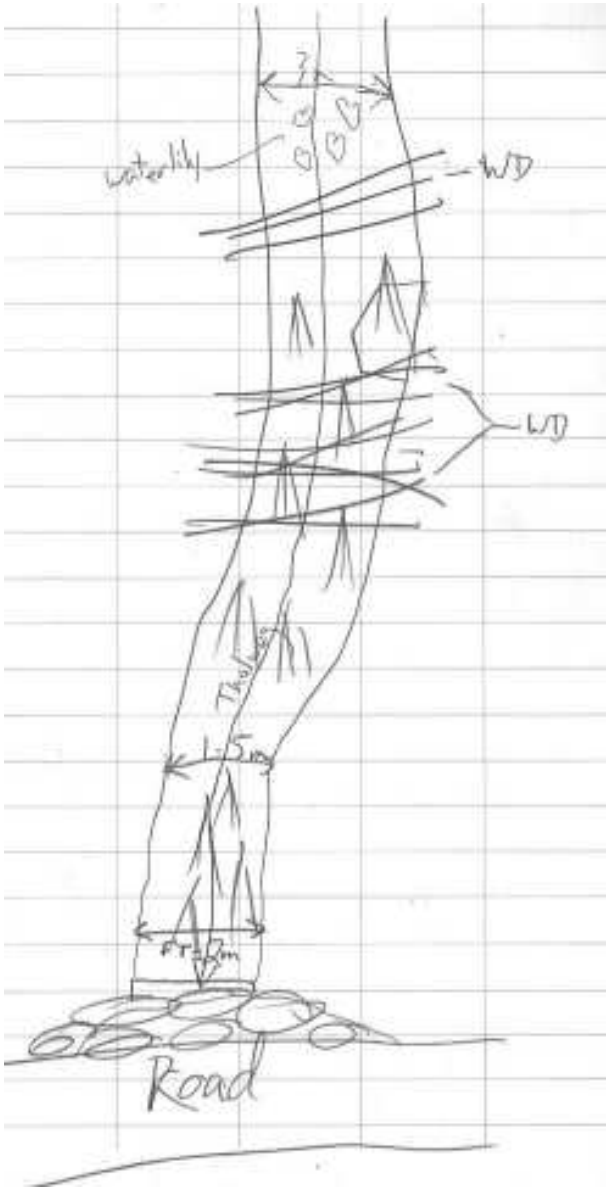
Stream Crossing #02



Downstream:

Upstream:

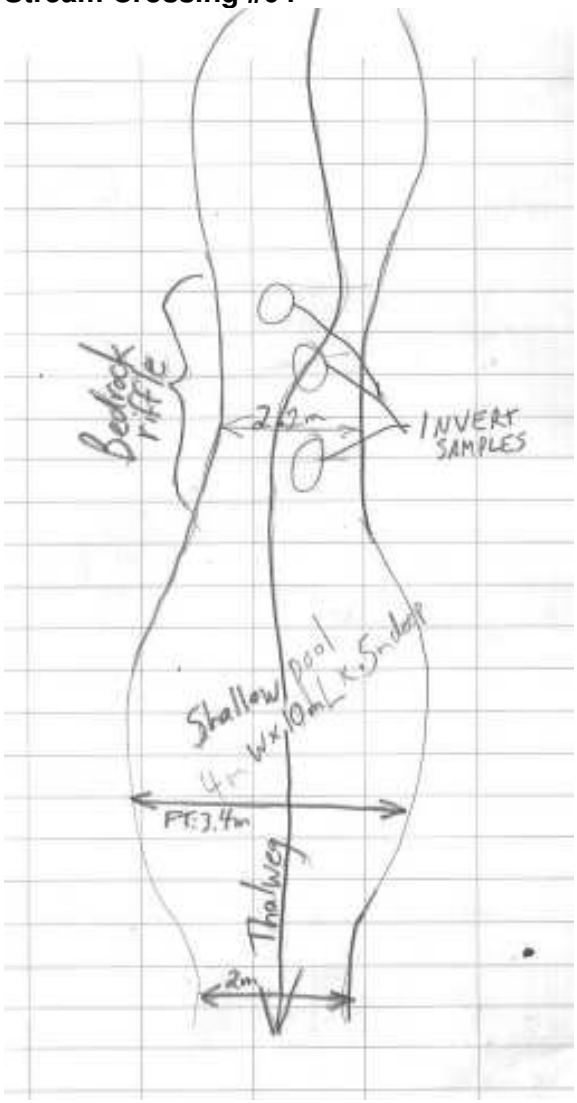
Stream Crossing #03



Downstream:

Upstream:

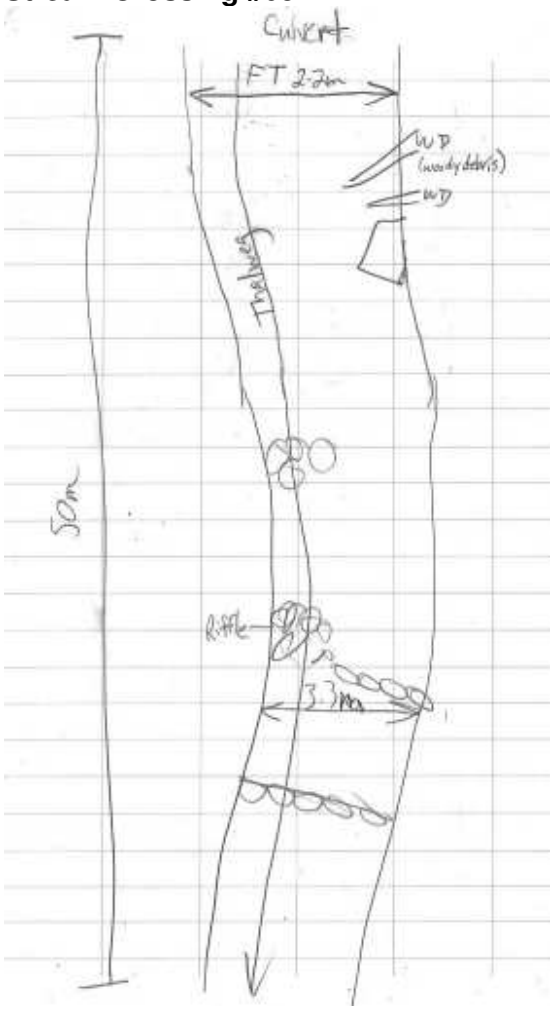
Stream Crossing #04



Downstream:

Upstream:

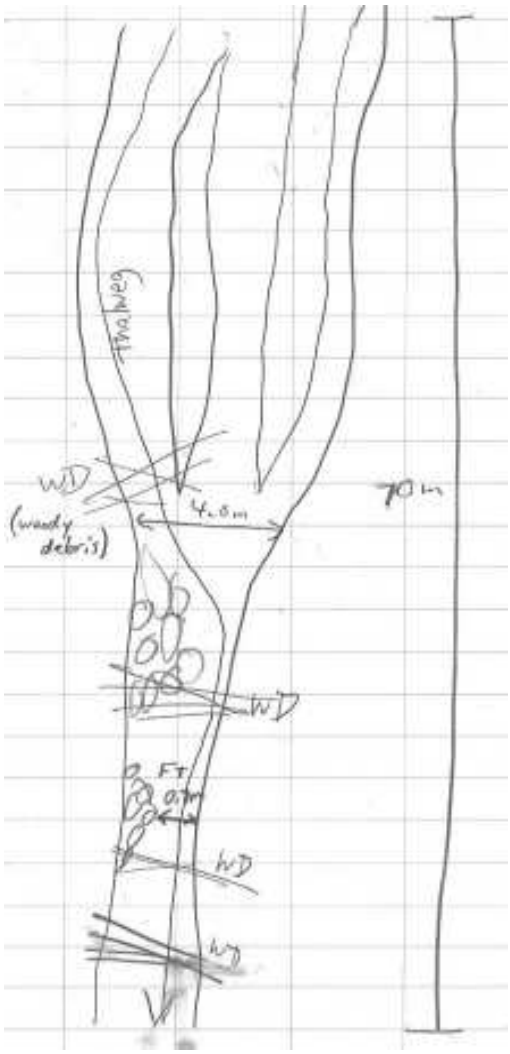
Stream Crossing #05



Downstream:

Upstream:

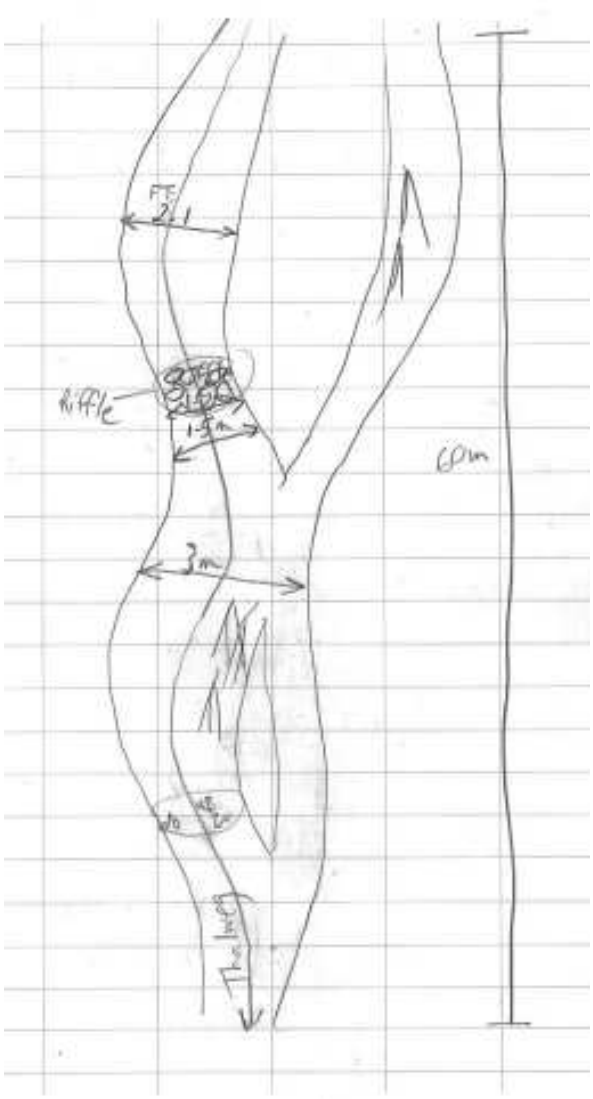
Stream Crossing #06



Downstream:

Upstream:

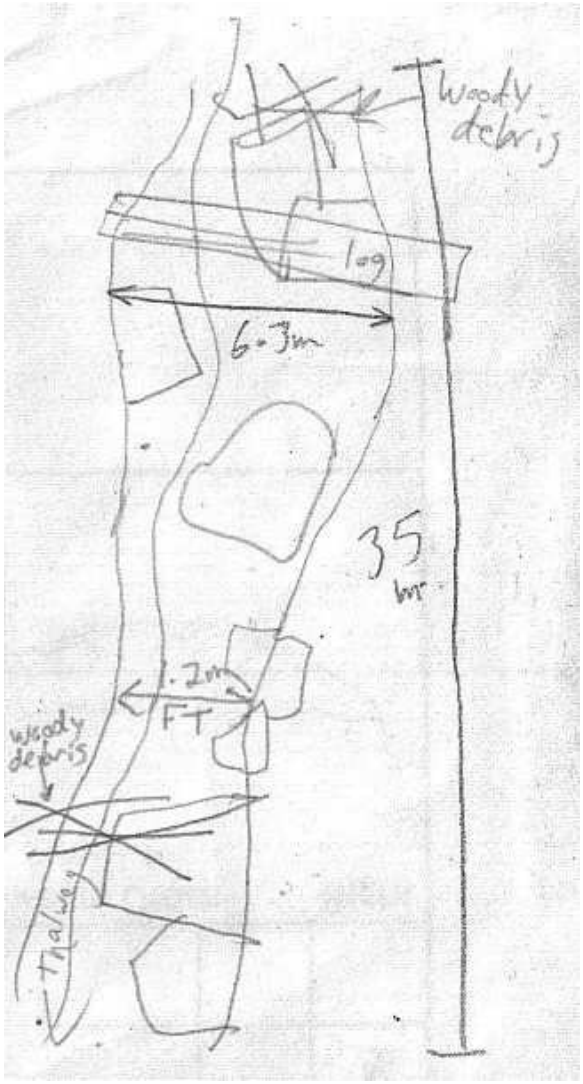
Stream Crossing #07



Downstream:

Upstream:

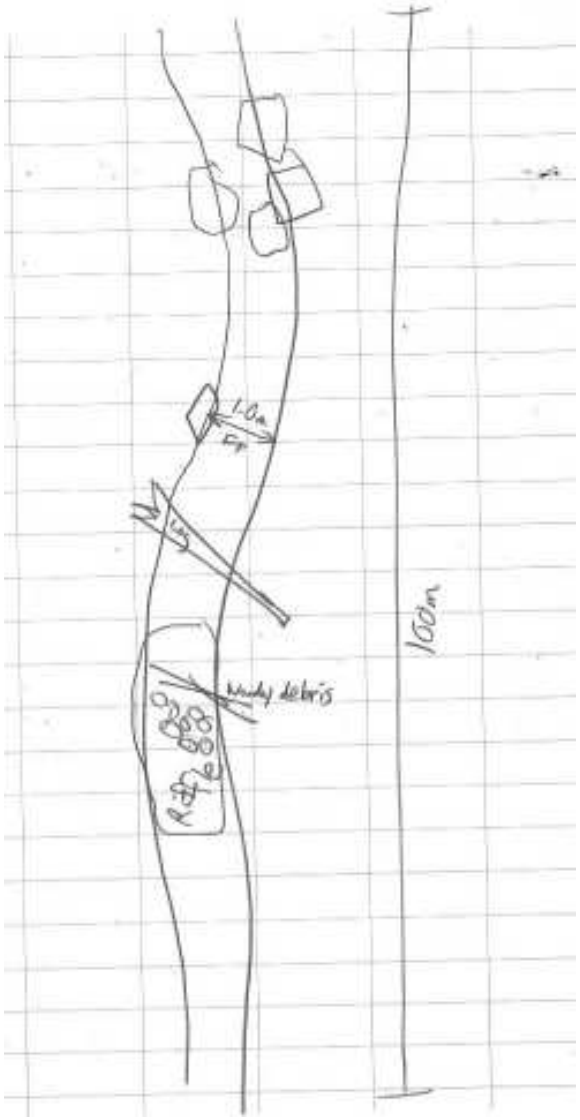
Stream Crossing #08



Downstream:

Upstream:

Stream Crossing #09



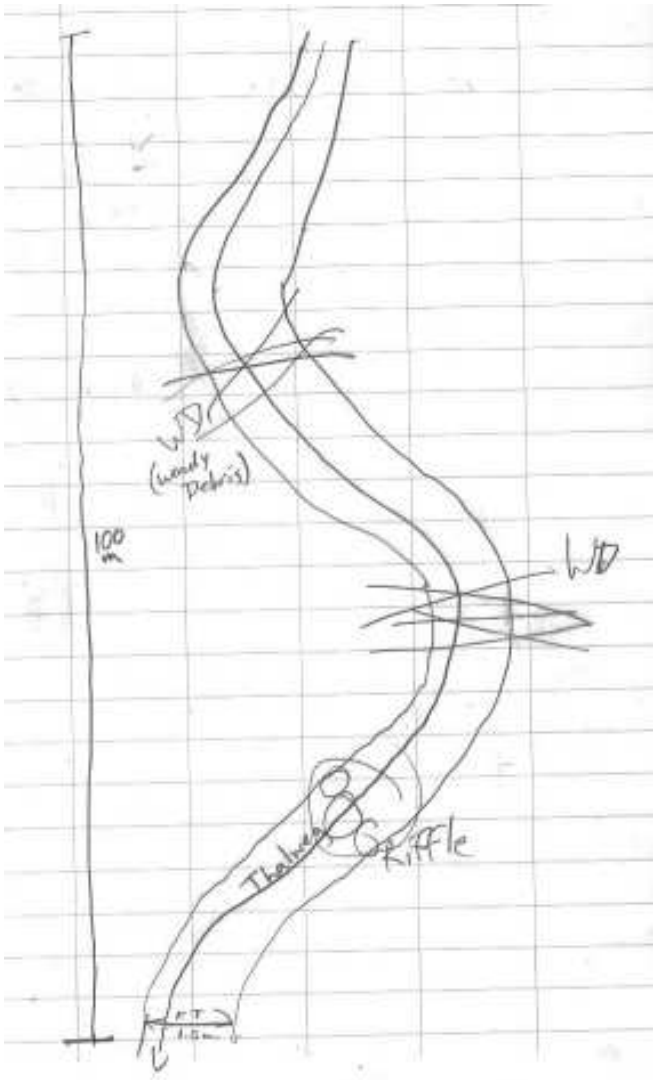
Downstream:

Upstream

Stream Crossing #10 (dry channel):

Stream Crossing #11 (dry channel):

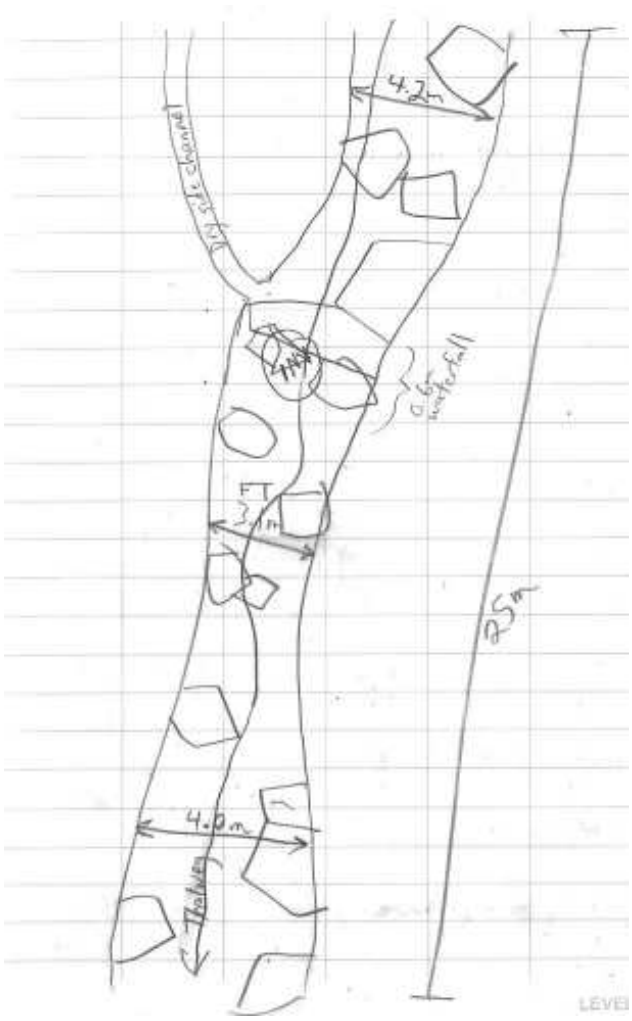
Stream Crossing #12



Downstream:

Upstream:

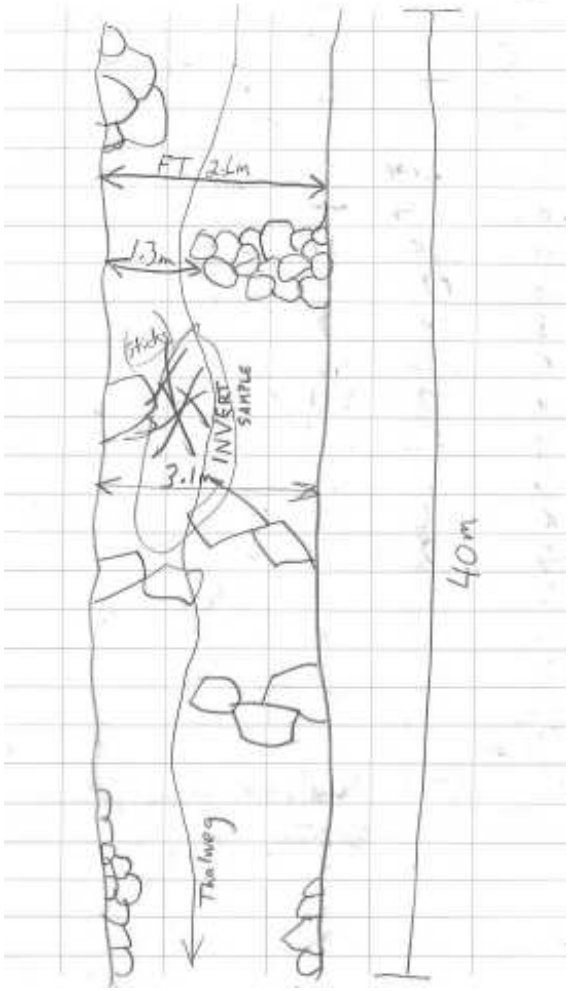
Stream Crossing #13



Downstream:

Upstream:

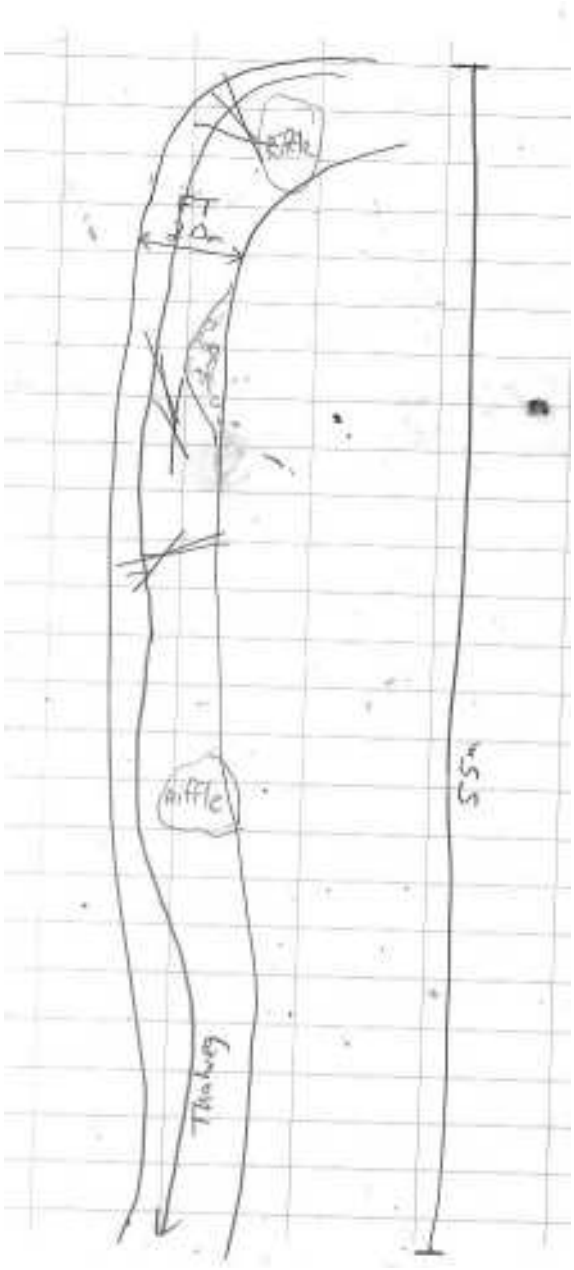
Stream Crossing #14



Downstream:

Upstream:

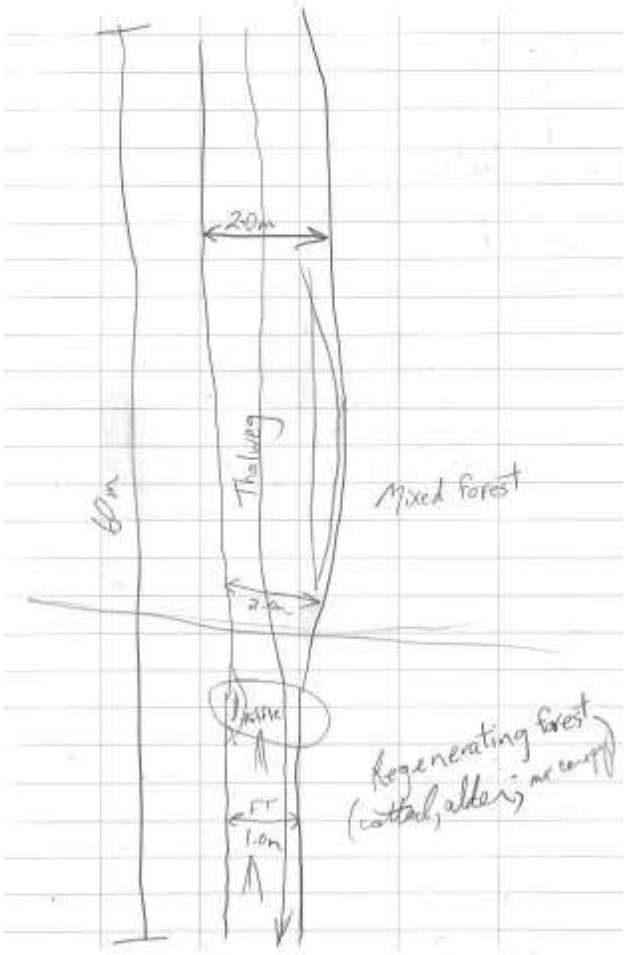
Stream Crossing #15



Downstream:

Upstream:

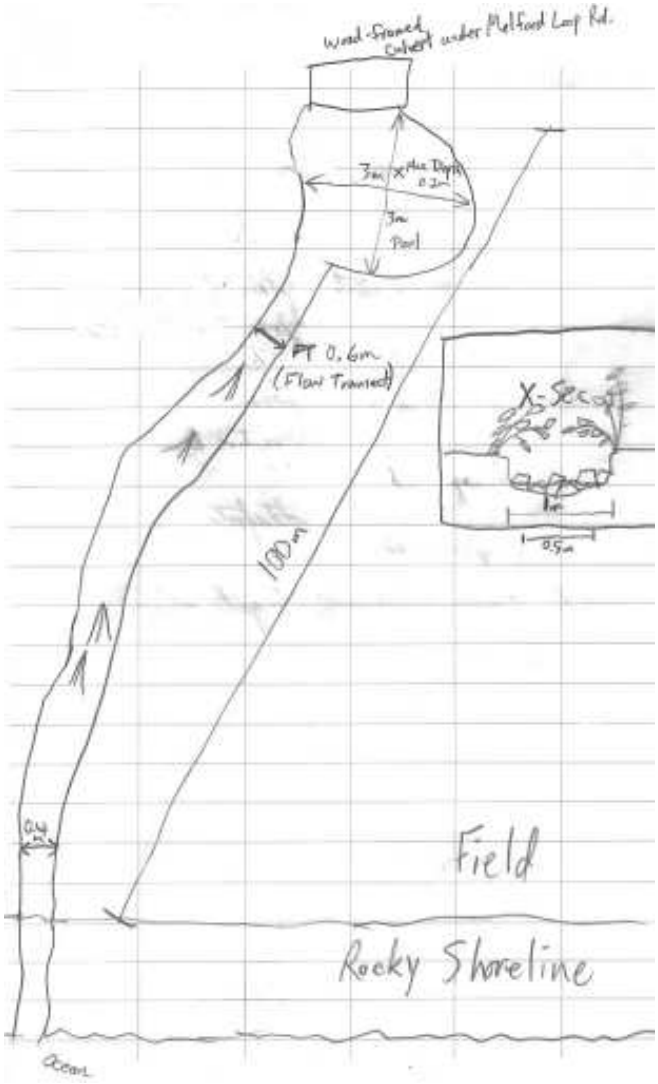
Stream Crossing #16



Downstream:

Upstream:

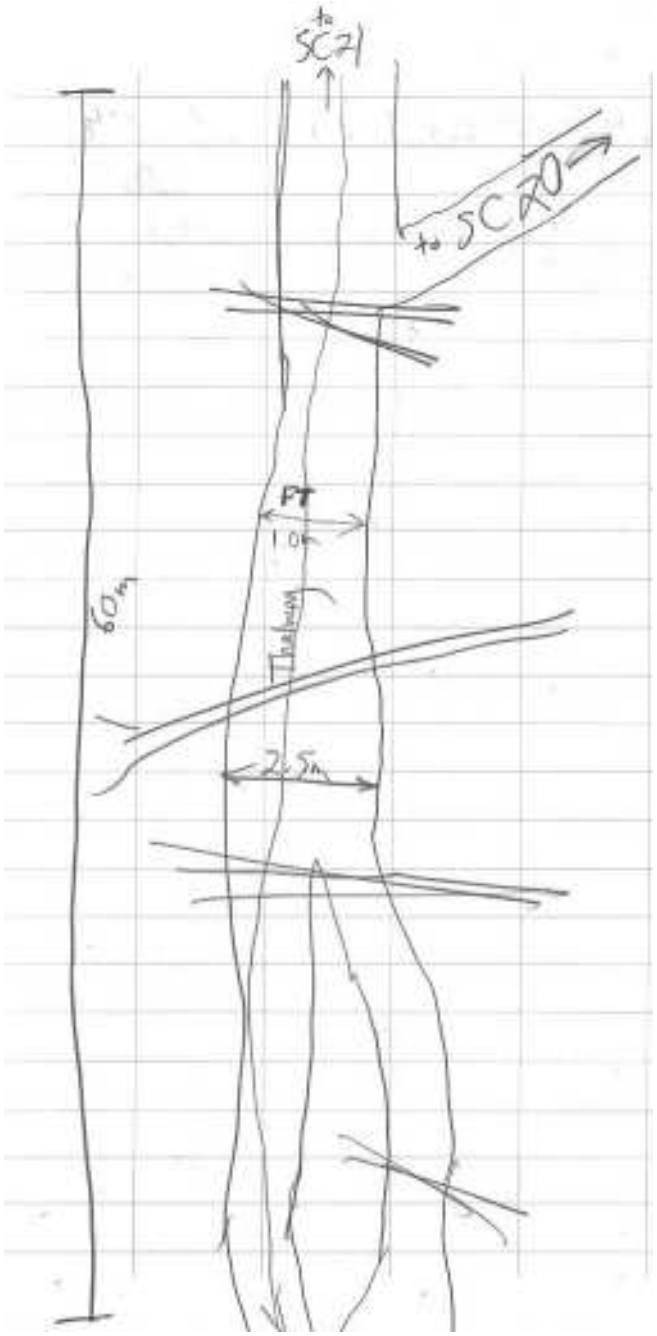
Stream Crossing #17



Downstream:

Upstream:

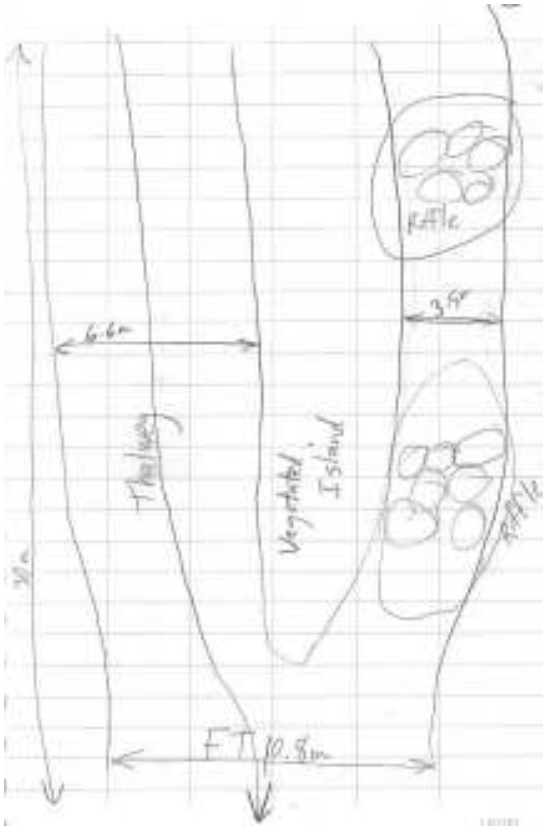
Stream Crossing #18



Downstream:

Upstream:

Stream Crossing #19

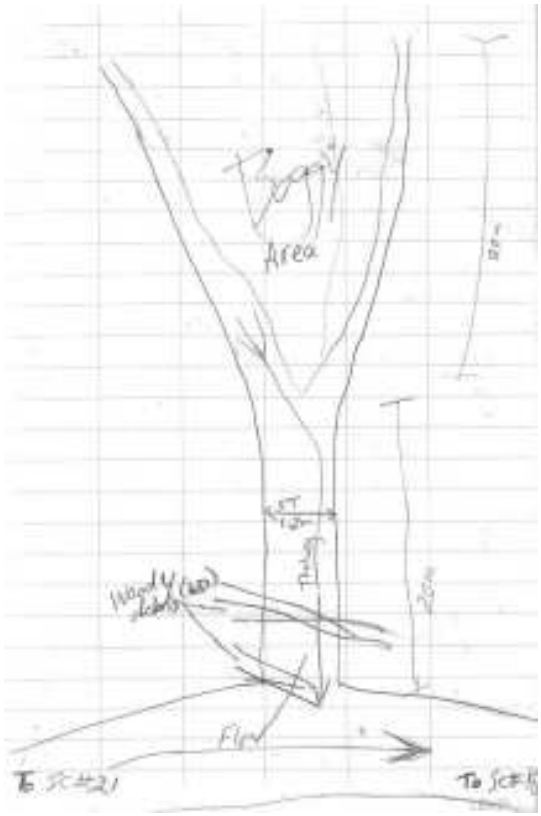


Downstream:

Upstream (left channel):

Upstream (right channel)

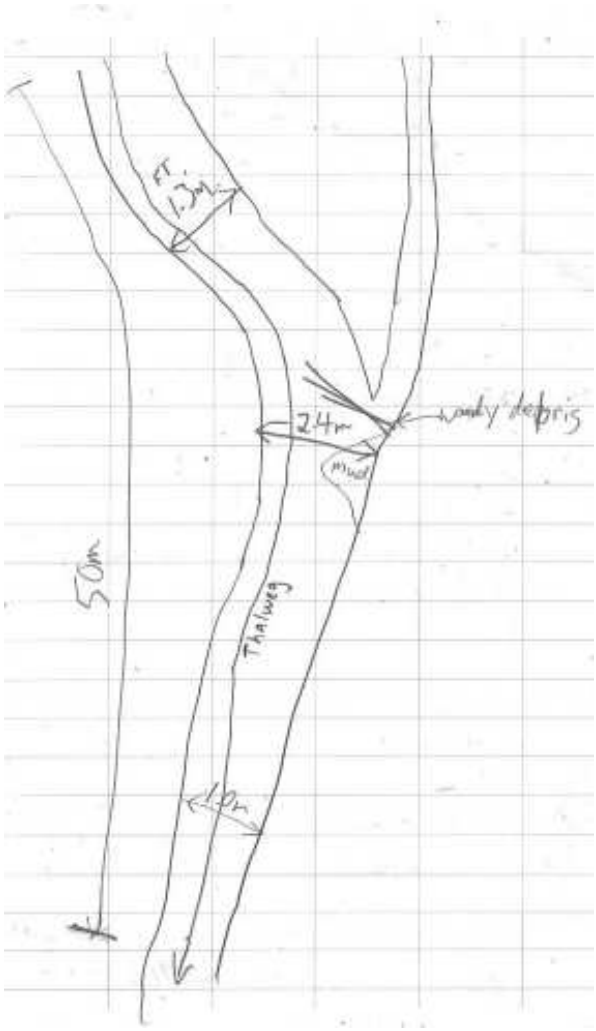
Stream Crossing #20



Downstream:

Upstream:

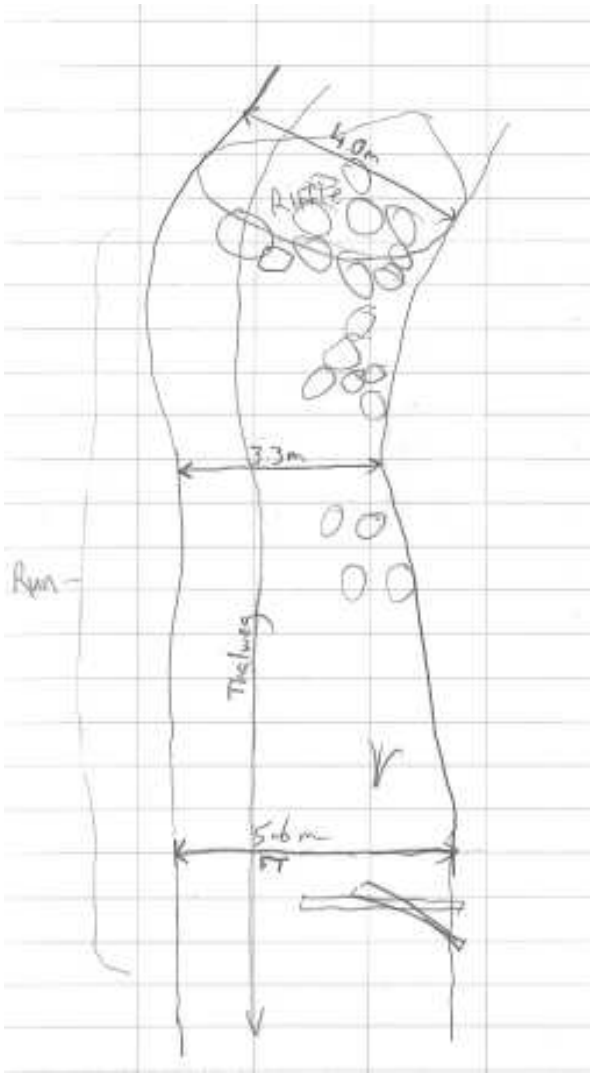
Stream Crossing #21



Downstream:

Upstream:

Stream Crossing #22

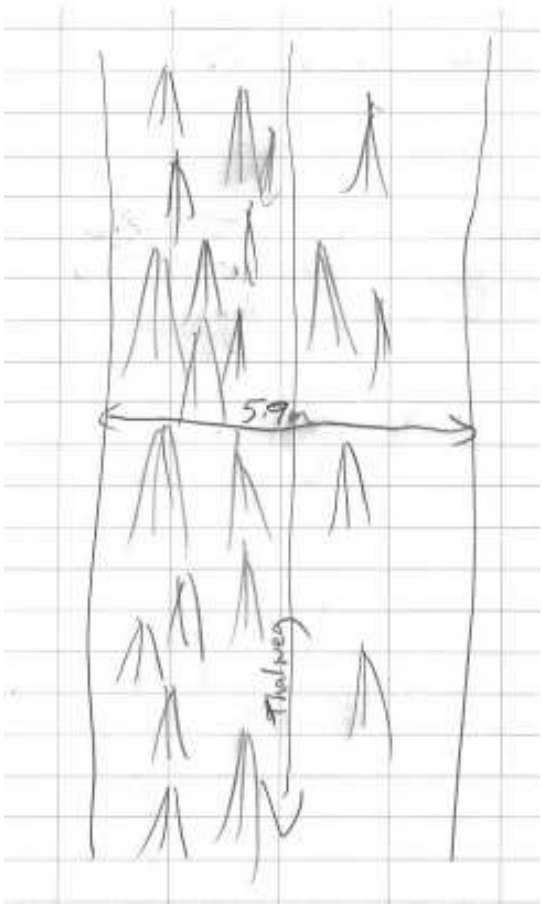


Downstream:

Upstream:

Stream Crossing #23 (dry channel):

Stream Crossing #24



Downstream:

Upstream:

Stream Crossing #26 (small wetland channel):

APPENDIX 5.9-B

FISH HABITAT CLASSIFICATION SCHEMES

Fish Habitat Classification Schemes

Classification 1	Good salmonid spawning and rearing habitat; often with some feeding pools for larger age classes. **Flows:** moderate riffles **Current:** 0.1-0.3 m/s **Depth:** relatively shallow, 0.3-1 m **Substrate:** gravel to small cobble size rock, some larger rocks or boulders **General Habitat Types:** primarily riffle, pool
Classification 2	Good salmonid rearing habitat with limited spawning, usually only in isolated gravel pockets, good feeding and holding areas for larger fish in deeper pools, pockets or backwater eddies: **Flows:** heavier riffles to light rapids **Current:** 0.3-1 m/s **Depth:** variable from 0.3-1.5 m **Substrate:** larger cobble/rubble size rocks to boulders and bedrock, some gravel pockets between larger rocks **General Habitat Types:** run, riffle, pocket water, pool
Classification 3	Poor rearing habitat with no spawning capabilities, used for migratory purposes: **Flows:** very fast, turbulent, heavy rapids, chutes, small waterfalls **Current:** 1 m/s or greater **Depth:** variable, 0.3 - 1.5 m **Substrate:** large rocks and boulders, bedrock **General Habitat Types:** run, pocket water, cascades
Classification 4	Poor juvenile salmonid rearing habitat with no spawning capability, provides shelter and feeding habitat for larger, older salmonids (especially brook trout) **Flows:** sluggish **Current:** 0.15 m/s **Depth:** variable but often 1 m **Substrate:** soft sediment or sand, occasionally large boulders or bedrock, aquatic macrophytes present in many locations **General Habitat Types:** flat, pool, glide

Source: Sooley et al. 1998

Sooley, D.R., E.A. Luiker and M.A. Barnes. 1998. Standard Methods Guide for Freshwater Fish and Fish Habitat Surveys in Newfoundland and Labrador: Rivers and Streams. Fisheries and Oceans, St John's, NF. 50pp.

APPENDIX 5.9-C

DETAILED MACROINVERTEBRATE RESULTS FROM FRESHWATER HABITAT SURVEYS

Sample	SC04	SC08	SC13	SC14	SC22
Date	**3-Aug-07**	**30-Jul-07**	**30-Jul-07**	**30-Jul-07**	**27-Jul-07**
Taxa Identified	#/m^2	#/m^2	#/m^2	#/m^2	#/m^2
NEMATODA					
OLIGOCHAETA	300			200	
HIRUDINEA					
Hirudinidae					
Glossiphonidae					
ISOPODA					
Aesellidae					
AMPHIPODA					
Talitridae- *Hyalella*					
COLLEMBOLA					
Isotomidae			33		
HYDRACARINA					
PLECOPTERA					
Leuctridae	67				
Nemouridae	67		133		
Perlidae		33		100	67
unidentified/damaged					
unidentified young nymph	167	67	33	167	33
EPHEMEROPTERA					
Baetidae		33	33		33
Ephemerellidae	33			133	133
Heptagenidae			433	33	100
Unidentified/damaged		33	33	167	33
ODONATA					
Aeshnidae			67		
Cordulegastridae					
Coenagrionidae					
Corduliidae					
Gomphidae				33	67
Libellulidae					
Damaged					
HEMIPTERA					
Corixidae					
Gerridae	33	33			33
MEGALOPTERA					
Corydalidae- *Nigronia*					
Sialidae- *Sialis*					
TRICHOPTERA					
Glossosomatidae		33	200	67	200
Hydropsychidae	133	100	999		
Hydroptilidae					
Lepistomatidae	100		100		
Limnephilidae					
Odontoceridae					

Sample	SC04	SC08	SC13	SC14	SC22
Date	**3-Aug-07**	**30-Jul-07**	**30-Jul-07**	**30-Jul-07**	**27-Jul-07**
Taxa Identified	#/m^2	#/m^2	#/m^2	#/m^2	#/m^2
Philopotamidae					
Phryganeidae					
Polycentropidae			133	67	
Psychomyiidae	67	133	100		33
unidentified/damaged			300	67	67
cases	67	33	333		200
LEPIDOPTERA ?				67	33
COLEOPTERA					
Dytiscidae larvae	300				
Dytiscidae adult	67				
Chrysomelidae					
Elmidae larvae	33	67		67	33
Elmidae adult	33	100	67	67	
Psephenidae		33		67	400
DIPTERA					
Athericidae- *Atherix*		67	33		
Ceratopogonidae					
Chironomidae larvae	3164	833	366	200	1066
Chironomidae pupae	100			100	133
Chironomid tubes		233	133		
Muscidae		33			
Simulidae larvae	8591		167		
Simulidae pupae	33				
Tipulidae larvae	33		33		
Tipulidae pupae					
Tabanidae					
unidentified/damaged	67			67	
GASTROPODA					
Hydrobiidae					
Lymnaeidae					
Physidae					
Planorbidae					33
Valvatidae- *Valvata*					
unidentified/damaged					33
BIVALVIA					
Pisidae*					33
juvenile					
Abundance (#/m2)	13455	1864	3729	1669	2763
Diversity (# of taxon)	15	13	18	15	18

* formerly called Sphaeridae