Appendix 5.0

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Appendix 5.1 – Field Work Chronology and Staff List

Appendix 5.1 – Field Work Chronology

Table 5.1.1 Summary of Environmental Fieldwork (Chronology)

Year	Date	Staff	Level of Effort	Task Description
2002	July 31	MC	-	Fish Community Sampling (on-site)
2002	September 25	MC	-	Fish Community Sampling / On-site & Zenon pond
2005	June 6	BD	-	Breeding Amphibian Survey
2005	June 7	BD	-	Breeding Amphibian Survey
2005	July 7	BD	4.0	Breeding Bird Survey
2005	July 12	BD	4.0	Breeding Bird Survey
2009	May 12	SR JS	8.0	Water Quality Monitoring/ Temperature Logger Installation/ Benthic Macroinvertebrate Sampling/Channel Morphology Mapping
2009	May 28	SR	2.5	Water Quality Monitoring / Temperature Logger Download
2009	June 11	SR	2.5	Water Quality Monitoring / Temperature Logger Download
2009	June 28	SR	2.5	Water Quality Monitoring / Temperature Logger Download
2009	July 8	SR AS	7.5	Water Quality Monitoring / Temperature Logger Download / Fish Community Sampling
2009	July 30	SR	2.5	Water Quality Monitoring / Temperature Logger Download
2009	August 18	SD	2.0	Field review of off-site portions of subcatchments – partially completed
2009	August 20	SD	7.0	Field review on-site – (south and west portions of site)
2009	August 21	SD	4.0	Field review on-site – (north and east portions of site)
2009	August 28	SR	6.0	Water Quality Monitoring / Temperature Logger Download / Offsite Fish Habitat review
2009	September 10	SR	2.5	Water Quality Monitoring / Temperature Logger Download

Year	Date	Staff	Level of Effort	Task Description
2009	September 11	SD	4.5	Complete Offsite portions of subcatchments mapping
2009	September 30	SR	2.5	Water Quality Monitoring / Temperature Logger Download
2009	October 19	SR	4.5	Water Quality Monitoring / Temperature Logger Download / On- Site Fish Habitat Review
2009	October 30	SR	4.5	Water Quality Monitoring / Temperature Logger Download / Onsite overview characterization
2010	April 21	DG	3.0	Breeding Amphibian Survey
2010	April 22	SD	4.5	Spring vegetation Surveys, focus on forested units
2010	June 7	AW DG	3.0	Breeding Amphibian Survey
2010	June 25	DG	3.0	Breeding Amphibian Survey
2010	July 13	SD	6.0	Wetland/dripline flagging and summer vegetation surveys/incidental wildlife observations.
2010	July 14	SD	6.0	Wetland/dripline flagging and summer vegetation surveys/incidental wildlife observations.
2010	December 10	SR JS	4.5	Watercourse profile / Cross section measurements in 14W-12, 12A, 13 and 14
2011	May 31	JH	4.0	Breeding bird survey and Bobolink Habitat evaluation; Incidental wildlife documentation
2011	July 4	SR AS	4.0	Installation of Temperature loggers (14W-14A); water quality sampling; Secchi depth measurements
2011	July 27	SD		Wetland staking
2011	August 4	MC RR	-	Site condition/stream survey to note flow regime (14W-12); Photo record
2011	August 19	SR	2.5	Water Quality sampling (14W-14A); Secchi Depth measurements; Temperature Logger data retrieval; Habitat mapping (14W-14A)
2011	August 24	SR	2.5	Water Quality sampling (14W-14A); Secchi Depth measurements; Temperature Logger data retrieval
2011	October 6/7	SR	24	Fish Community Sampling (minnow & pot traps) in 14W-14A

Year	Date	Staff	Level of Effort	Task Description
2011	October 7	SR	3.0	Water Quality sampling (14W-14A); Secchi Depth measurements; Temperature Logger data retrieval
2012	June 8	TP	3.0	Bobolink and Eastern Meadowlark Point Count Survey #1
2012	June 20	TP	2.5	Bobolink and Eastern Meadowlark Point Count Survey #2
2012	July 3	TP	2.5	Bobolink and Eastern Meadowlark Point Count Survey #3
2013	May 31	PM	2.5	Bobolink and Eastern Meadowlark Point Count Survey #1
2013	June 11	PM	2.5	Bobolink and Eastern Meadowlark Point Count Survey #2
2013	July 4	PM	2.5	Bobolink and Eastern Meadowlark Point Count Survey #3
2015	June 4	TP	4.0	Bat Exit Surveys
2015	June 11	TP	4.0	Bat Exit Surveys
2015	June 16	TP	4.0	Bat Exit Surveys
2015	July 13	TP	4.0	Bat Exit Surveys
2016	November 18	AS	3.0	Flow Regime Observations
2017	April 4	AS	4.0	Flow Regime Observations
2017	May 10	AS	2.0	Flow Regime Observations

Table 5.1.2 Environmental Technical Staff List

MMM Environmental Technical Staff	Title
Mark Cece, B.Sc.	Senior Fisheries Biologist & Ecology Manager
Sonia Rankin, B.Sc.	Aquatic Biologist
Alex Stettler, B.Sc.	Aquatic Biologist (Fisheries)
Joel Smith, B.Sc.	Aquatic Biologist (Benthics)
Bill Draper, M.Sc.	Senior Ecologist (Botany)
Steven Dinka, M.Sc.	Ecologist (Botany)
Teresa Piraino H.B.A.	Ecologist (Birds, Wildlife, Reptiles, Amphibians)
Prachi Patel, B.Sc.	Biologist (Botany)
Patricia Mohr, B.Sc.	Ecologist (Birds, Wildlife)

Appendix 5.2 – Wildlife

Appendix 5.2 – Wildlife

Table 5.2.1. Avifauna Observed 2005, 2009, 2010, 2011 and 2012

Common Name	Scientific Name	GRANK¹	SRANK ²	COSEWIC3	MNR ⁴	SARA Status ⁵	Schedule ⁵	Halton Region (1993) ⁶	MNR Area Sensitive ⁷	Habitat Use ⁸	NHIC Tracked	BB1	BB2	BB3	BB4	BB5	BB6	BB7	Incidental Observations
Alder Flycatcher	Empidonax alnorum	G5	S5B,SZN							E	Ν								Х
American Crow	Corvus brachyrhynchos	G5	S5B,SZN							E	N								Х
American Goldfinch	Spinus tristis	G5	S5B,SZN							Е	N		Х				Х	Χ	Х
American Robin	Turdus migratorius	G5	S5B,SZN							Е	N		Х		Х	Х	Х		Х
American Woodcock	Scolopax minor	G5	S5B,SZN							Е	N								Х
Baltimore Oriole	Icterus galbula	G5	S5B,SZN							Е	N			Х					Х
Barn Swallow	Hirundo rustica	G5	S5B,SZN	THR	THR	No Status	No Schedule				N	Х	Х	Х					Х
Black-capped Chickadee	Poecile atricapillus	G5	S5							I/E	N							Χ	Х
Black-crowned Night-heron	Nycticorax nycticorax	G5	S3B,SZN					U		S/B M/F	Υ								Х
Blue Jay	Cyanocitta cristata	G5	S5							I/E	N		Х	Χ	Χ				Х
Blue-winged Teal	Anas discors	G5	S5B,SZN					U		M/F	N								Х

Common Name	Scientific Name	GRANK¹	SRANK ²	COSEWIC3	MNR ⁴	SARA Status ⁵	Schedule ⁵	Halton Region (1993) ⁶	MNR Area Sensitive ⁷	Habitat Use ⁸	NHIC Tracked	BB1	BB2	BB3	BB4	BB5	BB6	BB7	Incidental Observations
Bobolink	Dolichonyx oryzivorus	G5	S4B,SZN	THR	THR	No Status	No schedule			E	N							Χ	Х
Brown-headed Cowbird	Molothrus ater	G5	S5B,SZN							Е	N				Χ				Χ
Canada Goose	Branta canadensis	G5	S5B,SZN					1		M/F	N	FY							Х
Common Grackle	Quiscalus quiscula	G5	S5B,SZN							Е	N								Χ
Common Yellowthroat	Geothlypis trichas	G5	S5B,SZN							I/E	N			Х					Х
Downy Woodpecker	Picoides pubescens	G5	S5							I/E	N								Χ
Eastern Kingbird	Tyrannus tyrannus	G5	S5B,SZN							E	N							Χ	Х
Eastern Towhee	Pipilo erythrophthalmus	G5	S4B,SZN					U		I/E	N								Χ
European Starling	Sturnus vulgaris	G5	SE					I		Е	N		Х	Х					Х
Field Sparrow	Spizella pusilla	G5	S5B,SZN							Е	N		Χ			Χ			Χ
Gadwall	Anas strepera	G5	S4B,SZN					U		M/F	N	FY							
Gray Catbird	Dumetella carolinensis	G5	S5B,SZN							I/E	N								Х
Great Blue Heron	Ardea herodias	G5	S5B,SZN							S/B M/F	N							Χ	Х

Common Name	Scientific Name	GRANK¹	SRANK ²	COSEWIC3	MNR ⁴	SARA Status ⁵	Schedule ⁵	Halton Region (1993) ⁶	MNR Area Sensitive ⁷	Habitat Use ⁸	NHIC Tracked	BB1	BB2	BB3	BB4	BB5	BB6	BB7	Incidental Observations
Herring Gull	Larus argentatus	G5	S5B,SZN								N								Х
Horned Lark	Eremophila alpestris	G5	S5B,SZN					U			N							Χ	Х
House Sparrow	Passer domesticus	G5	SE					I		E	N								Х
Indigo Bunting	Passerina cyanea	G5	S5B,SZN							Е	Ν					Χ			Χ
Killdeer	Charadrius vociferus	G5	S5B,SZN								N		Х					Χ	Χ
Mallard	Anas platyrhynchos	G5	S5B,SZN							S/B M/F	N	Х							Х
Mourning Dove	Zenaida macroura	G5	S5B,SZN							E	N	Х	Х					Х	Х
Northern Harrier	Circus cyaneus	G5	S4B,SZN	NAR	NAR			U	Х	M/F	N								Х
Northern Rough-winged Swallow	Stelgidopteryx serripennis	G5	S5B,SZN					U		M/F	N	Χ	Х				Χ		Х
Red-tailed Hawk	Buteo jamaicensis	G5	S5B,SZN	NAR	NAR					E	N								Х
Red-winged Blackbird	Agelaius phoeniceus	G5	S5B,SZN							E	N	Х	Х	Х	Х		Х	Х	Х
Ring-billed Gull	Larus delawarensis	G5	S5B,SZN								N		Х	Х					
Rock Dove	Columba livia	G5	SE					1			N		_	_				Χ	Х
Savannah	Passerculus	G5	S5B,SZN						Х		N	Χ	Х				Χ	Χ	Х

Common Name	Scientific Name	GRANK¹	SRANK ²	COSEWIC3	MNR ⁴	SARA Status ⁵	Schedule 5	Halton Region (1993) ⁶	MNR Area Sensitive ⁷	Habitat Use ⁸	NHIC Tracked	BB1	BB2	BB3	BB4	BB5	BB6	BB7	Incidental Observations
Sparrow	sandwichensis																		
Song Sparrow	Melospiza melodia	G5	S5B,SZN							E	N	Х	Х	Х	Χ	Х	Х	Х	Х
Spotted Sandpiper	Actitis macularia	G5	S5B,SZN								N							Χ	Х
Tree Swallow	Tachycineta bicolor	G5	S5B,SZN							Е	N	Χ							Х
Willow Flycatcher	Empidonax traillii	G5	S5B,SZN					U			N							Χ	
Wilson's Snipe	Gallinago delicata	G5	S5B,SZN					U			Ν								Х
Yellow Warbler	Dendroica petechia	G5	S5B,SZN							Е	N		Χ	Х					Х

Total No. of Species:

44

0 14 9 5 4

1 6 14 38

COSEWIC		SARA Schedule		Habitat Use	
THR	2	No Schedule	2	Interior	0
				Interior/Edge	6
MNR		Halton Region			
THR	2	U=Uncommon (15-35 stations)	9		
		I=Introduced Species	4		
SARA Status				_	
No Status	2	MNR Area Sensitive	2		

Table 5.2.2 – Anuran Survey Results 2010

			Observations							
Survey #	Date	Station	Spp.	Call Code	Count					
		1		Observations						
		2	No C	Observations						
		3	No C	Observations						
1	Apr-21-2010	4	No C	Observations						
'	(20:25-22:00)	5	No C	Observations						
		6	AMTO	2	4					
		7	NLFR	1	1					
		8	No	t Surveyed	eyed					
		1	No C	Observations						
		2	No C	Observations						
		3	No C	Observations						
	June -7-2010	4	No C	Observations						
2	(21:02-23:00)	5	No C	Observations						
	(21.02-23.00)	6	No C	Observations						
		7	GRFR	2	4					
		1	GRTR	1	2					
		8	GRTR	1	2					
		1	No C	Observations						
		2	No C	Observations						
		3	No Observations							
3	Jun-25-2010	4	No Observations							
3	(20:55-22:05)	5	No C	Observations						
		6		Observations						
		7	GRFR 2 5							
		8	Not Surveyed							

Table 5.2.3 – Bat Exit Survey Results 2015

Survey #	Building #	Date	# of Exiting Bats	# Myotis spp.	# Non Myotis spp.	# Unknown HiF	# No Recording
1	Building 1	June 4, 2015	8	2	3	2	1
2	Building 1	July 13, 2015	12	0	11	0	1
1	Building 3	June 11, 2015	1	0	1	0	0
2	Building 3	July 13, 2015	1	0	1	0	0

Legend

¹G-Rank (global)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

- G1 Extremely rare usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
- G2 Very rare usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.
- G3 Rare to uncommon usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common demonstrably secure under present conditions.

²S-Ranks (provincial)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

- S1 Critically Imperiled Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
- S2 Imperiled Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
- S3 Vulnerable Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5 Secure Common, widespread, and abundant in the nation or state/province.
- S#S# Range Rank A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
- SAN Non-breeding accidental.
- SE Exotic not believed to be a native component of Ontario's fauna.
- SZN Non-breeding migrants/vagrants.
- SZB Breeding migrants/vagrants.

³COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

(federal status from COSEWIC NOVEMBER 2010)

- EXT Extinct A species that no longer exists.
- EXP Extirpated A species no longer existing in the wild in Canada, but occurring elsewhere.
- END Endangered A species facing imminent extirpation or extinction.
- THR Threatened A species likely to become endangered if limiting factors are not reversed.

- SC Special Concern (formerly vulnerable) A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
- NAR Not At Risk A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
- DD Data Deficient (formerly Indeterminate) Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.

⁴OMNR (Ontario Ministry of Natural Resources)

(provincial status from MNR September 29 2010)

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

- EXT Extinct A species that no longer exists anywhere.
- EXP Extirpated A species that no longer exists in the wild in Ontario but still occurs elsewhere.
- END Endangered A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's *Endangered Species Act* (ESA) (END-R designations are no longer relevant as species are covered under new ESA April 2009)
- THR Threatened A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
- SC Special Concern (formerly Vulnerable) A species with characteristics that make it sensitive to human activities or natural events.
- NAR Not at Risk A species that has been evaluated and found to be not at risk.
- DD Data Deficient (formerly Indeterminate) A species for which there is insufficient information for a provincial status recommendation.

⁵SARA (Species at Risk Act) Status and Schedule

The Act establishes Schedule 1, as the official list of wildlife species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed wildlife species are implemented. http://www.sararegistry.gc.ca/sar/listing/listing_e.cfm

- EXT Extinct A wildlife species that no longer exists.
- EXP Extirpated A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild
- END Endangered A wildlife species that is facing imminent extirpation or extinction.
- THR Threatened A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
- SC Special Concern A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Schedule 1: is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.

Schedule 2: species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

Schedule 3: species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of wildlife species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of *SARA*. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Wildlife Species at Risk.

Government of Canada. Species at Risk Public Registry. Website: [http://www.sararegistry.gc.ca/default_e.cfm November 3, 2010]

- Glossary: http://www.sararegistry.gc.ca/about/glossary/default_e.cfm#e
- Species Index A-Z: http://www.sararegistry.gc.ca/sar/index/default_e.cfm
- Species Listing by Schedule: http://www.sararegistry.gc.ca/sar/listing/default_e.cfm

⁶ Regional Status

Halton Region

From: Halton Natural Areas Inventory (Dwyer 2006)

- A = Abundant >125 Stations
- C = Common 36-125 Stations
- U = Uncommon 15-35 Stations
- R= Rare < 15 Stations
- E = Extirpated no longer present in Halton Region
- I = Introduced an introduced species not native to Ontario
- Uncertain = Uncertain if species is present in Halton Region
- LS = Locally Significant
- M = Migration

⁷ MNR Significant Wildlife Habitat Technical Guide Area Sensitive Species

- Area Sensitivity is defined as species requiring large areas of suitable habitat in order to sustain population numbers
- From: Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Fish and Wildlife Branch, Wildlife Section. Science Development and Transfer Branch, Southcentral Science Section. 151pp. + appendices.

8 Habitat Use

I=interior species, I/E=interior edge species, E=edge species (Freemark and Collins, 1989); M/F=Marsh/Fen, S/B=Treed Swamp/Bog. Interior bird species require habitat which is often found 100m from the forest edge while Interior/Edge species are found within both interior and edge habitat. Often Interior and Interior/Edge are more sensitive to urban encroachment as they require these large, relatively undisturbed forest habitats to support viable populations. The increasing urbanization of rural areas often results in increased parasitism and predation as well as disturbance from human recreational activities (e.g. illegal bike trails, dumping and pets.) (Freemark, K. and Collins, B. 1989. Landscape ecology of birds breeding in temperate forest fragments. – In: Hagan III, J. M. and Johnston, D. W. (eds), Ecology and conservation of neotropical migrant landbirds. Smithsonian Inst. Press, pp. 443–454)

⁹ Dependancy on Wetlands

 Wetlands are home to many species of birds. Wetland birds are determined by the kind of habitat nad the seasonal movement of migrating species.

- Dependant (D) These species depend on wetlands for their survival. Most nest within wetlands, a few such as the Great Blue Heron, nest elsewhere but feed extensively in wetlands, and other such as the Wood Duck, nest away from wetlands but rear their young in marshes and fens.
- Partially Dependant (P) These species use wetlands habitats extensively for breeding or feeding, as well
 as other types of habitat.

10, 11, 12 Early Nesting Date, Late Migration Date, Late Nesting Date

LePage, Dennis. 2005. Migration and nesting dates for Ontario bird species. Bird Studies Canada: Ontario Breeding Bird Atlas.

This list was created by Dennis LePage of Bird Studies Canada. Breeding dates were provided by Mark Peck, and Charles Francis provided the migration dates based on Long Point Data. It covers the whole Southern Great Lakes region; thus some species do not occur in the Ottawa district. The early and late dates for nesting define the period during which nesting can be expected to occur. (They are the earliest and latest records known for that species in the Southern Great Lakes region) The late migration date is to show that although most birds move through the area before that date, some can be still passing through at that time. Ex: An Osprey can still be passing through until May 30, although that is unusual. Yet the earliest record for this species is May 1. What this means is, be careful about assigning a potential breeding code (possible, probable, confirmed) until after May 30 unless good evidence indicates that the bird is nesting (ie: mating with another Osprey, sitting on a nest etc.).

Ontario Breeding Bird Atlas - Breeding Evidence Codes

OBSERVED

X Species observed in its breeding season (no breeding evidence).

POSSIBLE

- H Species observed in its breeding season in suitable nesting habitat.
- S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

PROBABLE

- P Pair observed in suitable nesting habitat in nesting season.
- T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more appart, at the same place.
- D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.
- V Visiting probable nest site
- A Agitated behaviour or anxiety calls of an adult.
- B Brood Patch on adult female or cloacal protuberance on adult male.
- N Nest-building or excavation of nest hole.

CONFIRMED

- DD Distraction display or injury feigning.
- NU Used nest or egg shells found (occupied or laid within the period of the survey).
- FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.
- AE Adult leaving or entering nest sites in circumstances indicating occupied nest.
- FS Adult carying fecal sac.
- CF Adult carying food for young.
- NE Nest containing eggs.
- NY Nest with young seen or heard.

Appendix 5.3 – Vascular Plant List

Appendix 5.3 – Vascular Plant List

Table 5.3.1 - Summary of Vascular Plant Species

Common Name	Scientific Name	Family	cc¹	cw ¹	grank²	Srank ³	COSEWIC4	MNR ⁵	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E-46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
Allegheny	Rubus	DOCACEAE	,	,	C.E.	כי			<	<	<						
Blackberry Alternate-	allegheniensis	ROSACEAE	2	2	G5	S5			Χ	Χ	Χ						Х
leaf Dogwood	Cornus alternifolia	CORNACEAE	6	5	G5	S5			Χ	Х	Χ	х					
American Basswood	Tilia americana	TILIACEAE	4	3	G5	S5			Х	Х	Х		х		х	х	х
American Beech	Fagus grandifolia	FAGACEAE	6	3	G5	S5			Х	Х	Х				х		
American Bugleweed	Lycopus americanus	LAMIACEAE	4	-5	G5	S5			Х	Х	Х	х	х				
American Elm	Ulmus americana	ULMACEAE	3	-2	G5?	S5			Х	Х	Х	х	х	Х		Х	х
Annual Ragweed	Ambrosia artemisiifolia	ASTERACEAE	0	3	G5	S5			Х	Х	Х		х				
Bird's-foot Trefoil	Lotus corniculatus	FABACEAE			G?	SE 5			Х	Х	Χ		х				
Black Locust	Robinia pseudo-acacia	FABACEAE		0	G5	SE 5			Х	Х	Х		х				
Black Walnut	Juglans nigra	JUGLANDACE AE	5	3	G5	S4			Х	Х	Χ			Х			
Blue Vervain	Verbena hastata	VERBENACEA E	4	-4	G5	S5			Х	Х	Χ	х	х			Х	
Broad-leaf Cattail	Typha latifolia	TYPHACEAE	3	-5	G5	S5			Х	Х	Х	х	Х				
Broad- leaved Water- plantain	Alisma plantago- aquatica	ALISMATACE AE	3	-5	G5	S5			Х	Х	Х	х	х	x			
Buckthorn	Rhamnus cathartica	RHAMNACEA E		3	G?	SE 5			Х	Х	Χ	х	Х	Х	х		х
Bur Oak	Quercus macrocarpa	FAGACEAE	5	1	G5	S5			Х	Χ	Χ				χ		х
Canada Anemone	Anemone canadensis	RANUNCULAC EAE	3	-3	G5	S5			Х	Х	Χ				х		
Canada Thistle	Cirsium arvense	ASTERACEAE		3	G?	SE 5			Х	Χ	Χ	Х	Х				
Carolina Rose	Rosa carolina	ROSACEAE	6	4	G4G5	S4			Х	R	R ⁴						х
Chicory	Cichorium intybus	ASTERACEAE		5	G?	SE 5			Χ	Χ	Χ		Х				
Choke Cherry	Prunus virginiana ssp virginiana	ROSACEAE	2	1	G5T?	S5			Х	Х	Х				v	v	
Climbing Nightshade	Solanum dulcamara	SOLANACEAE		0	G?	SE 5			X	X	X	х	х		X	Х	

Common Name	Scientific Name	Family	cc¹	CW ¹	grank ²	Srank ³	COSEWIC⁴	MNR5	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E-46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
Common Apple	Malus pumila	ROSACEAE		5	G5	SE 5			Х	Х	Х	х	х				х
Common	Eupatorium												Α				
Boneset	perfoliatum	ASTERACEAE	2	-4	G5	S5			Χ	Χ	Χ		Х				
Common Dandelion	Taraxacum officinale	ASTERACEAE		3	G5	SE 5			Х	Х	Χ		х	Х			
Common	Asclepias	ASCLEPIADA		3	00	3			^		^		^	^			
Milkweed	syriaca	CEAE	0	5	G5	S5			Χ	Χ	Χ	Х	Х				
Common	Pyrus	DOCACEAE		E	C.E	SE			V	V	~						.,
Pear Common	communis Phragmites	ROSACEAE		5	G5	4			Χ	Х	Χ						Х
Reed	australis	POACEAE	0	-4	G5	S5			Χ	Χ	Χ		Χ				
Common	Dipsacus fullonum ssp	DIPSACACEA				SE											
Teasel	sylvestris	E		5	G?T?	5			Х	Х	Х	х	х	х			
Corn-	Chrysanthemu					SE											
marigold	m segetum	ASTERACEAE			G?	1							Х				
Crack Willow	Salix fragilis	SALICACEAE		-1	G?	SE 5							Х	Х			
Crested	Carex	07.12.07.10.27.12			<u> </u>												
Sedge	cristatella	CYPERACEAE	3	-4	G5	S5			Χ	Χ	Χ	Х	Х				
Cultivated Wheat	Triticum aestivum	POACEAE		5	G?	SE 1			Χ	Х	Χ		Х				
vviicat	aesuvum	POLYGONAC		3	0:	SE			^	^	^		^				
Curly Dock	Rumex crispus	EAE		-1	G?	5			Χ	Χ	Χ	Х	Х			Х	
Dame's	Hesperis	BRASSICACE		-	0405	SE			V	V	V						
Rocket Devil's	matronalis	AE		5	G4G5	5			Χ	Х	Χ			Χ			
Beggar's	Bidens																
Ticks	frondosa	ASTERACEAE	3	-3	G5	S5			Χ	Χ	Χ	Х	Х				
Early Meadowrue	Thalictrum dioicum	RANUNCULAC EAE	5	2	G5	S5			Χ	Χ	Χ				Х		
Weadowide	Populus	LAL	-		- 00	00									^		
Eastern	deltoides ssp.																
Cottonwood	deltoides	SALICACEAE			G5T?	SU										Х	
Eastern Helleborine	Epipactis helleborine	ORCHIDACEA E		5	G?	SE 5			Χ	Χ	Χ				Х		
Eastern Hop-	Ostrya			Ť	<u> </u>	Ť					^				^		
hornbeam	virginiana	BETULACEAE	4	4	G5	S5			Χ	Χ	Χ				х	х	
Eastern Red	Juniperus	CUPRESSACE															
Cedar Eastern	virginiana	AE	4	3	G5	S5			R⁵	R	R ⁸						Х
Eastern White Pine	Pinus strobus	PINACEAE	4	3	G5	S5			Х	Χ	Χ						х
False	Maianthemum racemosum	-															
Solomon's Seal	ssp racemosum	LILIACEAE	4	3	G5T	S5			Χ	Х	Χ				Х		
	Sonchus										- `						
Field Sowthistle	arvensis ssp arvensis	ASTERACEAE		1	G?T?	SE 5			Χ	Χ	Χ		Х				
Fowl Manna Grass	Glyceria striata	POACEAE	3	-5	G5	S5			Χ	Х	Χ				Х	Х	

Common Name	Scientific Name	Family	اددر	_L w ₂	grank ²	Srank ³	COSEWIC4	MNR5	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E-46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
Fox Sedge	Carex vulpinoidea	CYPERACEAE	3	-5	G5	S5			Х	Χ	Χ	х	Х	Х			
Fringed	,	OVDEDAGEAE	•	4	0.5	0.5											
Sedge Garlic	Carex crinita Alliaria	CYPERACEAE BRASSICACE	6	-4	G5	S5 SE			Χ ^U	Χ	R ⁶				Х		
Mustard Graceful	petiolata Carex	AE		0	G?	5			Χ	Χ	Χ			Χ	Χ		
Sedge	gracillima	CYPERACEAE	4	3	G5	S5			Χ	Χ	Χ		χ		χ	χ	
Grass- leaved	Euthamia																
Goldenrod	graminifolia	ASTERACEAE	2	-2	G5	S5			Χ	Χ	Χ	Х	Χ				
Gray	Cornus foemina ssp																
Dogwood	racemosa	CORNACEAE	2	-2	G5	S5			Χ	Χ	Χ	Х	Χ	Χ	Χ	Χ	
Great-hairy	Epilobium	ONAGRACEA			00	SE			V	V	V						
Willow-herb	hirsutum Fraxinus	E		-4	G?	5			Х	Х	Х		Х				
Green Ash	pennsylvanica	OLEACEAE	3	-3	G5	S5			Χ	Χ	Χ	Χ					
Hawthorn Species	Crataegus sp	ROSACEAE											Х		Х	Х	х
Heart-leaved Willow	Salix	SALICACEAE	4	-3	G5	S5			Х	Х	Х	v	v				
WIIIOW	eriocephala Geranium	GERANIACEA	4	-3		SE					۸	Х	Х				
Herb-robert	robertianum Ranunculus	Е		5	G5	5			Χ	Χ	Χ				Χ		
Hooked Crowfoot	recurvatus var. recurvatus	RANUNCULAC EAE	4	-3	G5	S5			Χ	Χ	Χ					х	
Hop Sedge	Carex lupulina	CYPERACEAE	6	-5	G5	S5							χ			χ	
Jack-in-the- pulpit	Arisaema triphyllum ssp triphyllum	ARACEAE	5	-2	G5T5	S5			Х	Χ	Χ				х		
Kentucky	Poa pratensis																
Bluegrass Kidney-	ssp pratensis	POACEAE	0	1	G5T	S5			Χ	Χ	Χ		Χ				
leaved Buttercup	Ranunculus abortivus	RANUNCULAC EAE	2	-2	G5	S5			Χ	Χ	Χ					Х	
Lady's	Polygonum	POLYGONAC	_			SE						.,	.,			А	
Thumb Large-leaved	persicaria Aster	EAE		-3	G?	5			Х	Χ	Χ	Х	Х				
Aster	macrophyllus Arctium minus	ASTERACEAE	5	5	G5	S5 SE			Χ	Χ	Χ				Χ		
Lesser Burdock	ssp minus	ASTERACEAE		5	G?T?	5E 5			Χ	Χ	Χ		Х				
Lesser Duckweed	Lemna minor	LEMNACEAE	2	-5	G5	S5			Χ	Χ	Χ	х					
Manitoba Maple	Acer negundo	ACERACEAE		-2	G5	S5			Χ	Χ	Χ	х					
	Podophyllum	BERBERIDAC	_	2		S5			Х						v		
May Apple Narrow-	peltatum	EAE	5	3	G5	33			٨	Χ	Χ				Х		
leaved Cattail	Typha angustifolia	TYPHACEAE	3	-5	G5	S5			Χ	Χ	Χ	Х	Х				

Common Name	Scientific Name	Family	loo.	cw ¹	grank ²	Srank ³	COSEWIC4	MNR ⁵	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
Narrow- leaved Spring Beauty	Claytonia virginica	PORTULACAC EAE	5	3	G5	S5			X	X	X				х	X	
New	Aster novae-			-													
England Aster	angliae	ASTERACEAE	2	-3	G5	S5			Χ	Χ	Χ		Х				
Nipple-seed Plantain	Plantago major	PLANTAGINA CEAE		-1	G5	SE 5			Х	Χ	Х		х				
Northern Red Oak	Quercus rubra	FAGACEAE	6	3	G5	S5			Х	Χ	Х				х	Х	х
Northern	Thuja	CUPRESSACE															
White Cedar Northern	occidentalis Viburnum	AE CAPRIFOLIAC	4	-3	G5	S5			Χ	Χ	Χ						Х
Wild-raisin Norway	cassinoides Acer	EAE	7	-3	G5	S5 SE				R	Е						Х
Maple	platanoides	ACERACEAE		5	G?	5			Χ	Χ	Χ			Х			Х
Norway Spruce	Picea abies	PINACEAE		5	G?	SE 3			X ^S R	Х	Х						х
Orchard Grass	Dactylis glomerata	POACEAE		3	G?	SE 5			Х	Х	Х		х				
Panicled Aster	Aster lanceolatus ssp lanceolatus	ASTERACEAE	3	-3	G5T?	S5			Χ ^U	Х	Х		Х	х		х	
Purple Loosestrife	Lythrum salicaria	LYTHRACEAE		-5	G5	SE 5			Х	Х	Х	Х	Х	Х			
Purple- stemmed Aster	Aster puniceus var puniceus	ASTERACEAE	6	-5	G5T?	S5			Α	Λ	Λ	X	X				
Queen Anne's Lace	Daucus carota	APIACEAE			G?	SE 5			Х	Х	Х	х	х				
Red Clover	Trifolium pratense	FABACEAE		2	G?	SE 5			Х	Х	Х		Х				
Red Raspberry	Rubus idaeus ssp idaeus	ROSACEAE		0	G5T5	SE 1			Х	Х				v		v	
Redtop	Agrostis gigantea	POACEAE		0	G4G5	SE 5			X		X			X		Х	
Reed Canary	Phalaris		_							X	X	.,	X	X		.,	
Grass Rice	arundinacea Leersia	POACEAE	0	-4	G5	S5			Χ	Χ	Χ	Х	Х	Х		Х	
Cutgrass Riverbank	oryzoides	POACEAE	3	-5	G5	S5			Χu	Χ	Χ		Х	Х		Х	
Grape	Vitis riparia	VITACEAE	0	-2	G5	S5			Χ	Χ	Χ	Х		Х			
Running Strawberry- bush	Euonymus obovata	CELASTRACE AE	6	5	G5	S5			Χ	Χ	Χ				Х		
Sandbar Willow	Salix exigua	SALICACEAE	3	-5	G5	S5			Χ ^U	Χ	Χ		Х				
Scotch Pine	Pinus sylvestris	PINACEAE		5	G?	SE 5			Χ	Χ	Χ						х
Sensitive Fern	Onoclea sensibilis	DRYOPTERID ACEAE	4	-3	G5	S5			Х	Х	Х				х		

Common Name	Scientific Name	Family	cc¹	cw ¹	grank ²	Srank ³	COSEWIC4	MNR5	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E-46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
Shagbark Hickory	Carya ovata var ovata	JUGLANDACE AE	6	3	G5	S5			Xυ	Χ	U	х	Х		х	Х	х
	Acer		Е			S5											
Silver Maple Smooth	saccharinum Bromus inermis	ACERACEAE	5	-3	G5 G4G5	SE			Х	Х	Х	Х					
Brome	ssp inermis	POACEAE		5	T?	5			Χ	Χ	Χ		Х	Х			
Soft Rush	Juncus effusus ssp solutus	JUNCACEAE	4	-5	G5T?	S5			Χ	Χ	Χ	х	х			Х	
Soy Bean	Glycine max	FABACEAE		5	G?	SE 2							х				
Spikerush		CYPERACEAE															
Species Spotted	Eleocharis sp Impatiens	BALSAMINAC											Х				
Jewel-weed	capensis	EAE	4	-3	G5	S5			Χ	Χ	Χ		Х			χ	
Staghorn Sumac	Rhus typhina	ANACARDIAC EAE	1	5	G5	S5			Χ	Χ	Χ		Х				
	Acer saccharum ssp.																
Sugar Maple	saccharum Solidago	ACERACEAE			G5T?	S5			Χ	Χ	Χ				Х		
Tall Goldenrod	altissima var altissima	ASTERACEAE	1	3	G?	S5			_	~	~		v				
Tartarian	Lonicera	CAPRIFOLIAC	-	3	G?	SE			Х	Χ	Χ		Х				
Honeysuckle	tatarica	EAE		3	G?	5			Χ	Χ	Χ			Х		Χ	
Thicket Creeper	Parthenocissus inserta	VITACEAE	3	3	G5	S5			Χ	Х	Х			х		х	
·	Phleum				G?	SE							.,				
Timothy Torrey's	pratense	POACEAE		3		5			Х	Χ	Х		Х				
Rush True	Juncus torreyi Nasturtium	JUNCACEAE BRASSICACE	3	-3	G5	S5			ΧU	Χ	Χ		Х	Х		Χ	
Watercress	officinale	AE		-5	G?	SE							χ				
Turtlehead	Chelone glabra	SCROPHULAR IACEAE	7	-5	G5	S5			ΧU	Х	Х					х	
Velvet-leaf	Abutilon theophrasti	MALVACEAE		4	G?	SE 5			Х	Х	Х	х					
	Fragaria			r	<u> </u>				^	^	^	^					
Virginia Strawberry	virginiana ssp virginiana	ROSACEAE	2	1	G5T?	SU			Χ	Χ	Χ		х	х	х		
Western Poison Ivy	Rhus radicans ssp rydbergii	ANACARDIAC EAE		0	G5T	S5			Х	Х	Х				х		
White Ash	Fraxinus americana	OLEACEAE	4	3	G5	S5			X	X	X					v	
	Geum				G5	S5			X						Х	Х	
White Avens	canadense Trifolium	ROSACEAE	3	0		SE				X	X	Х					
White Clover	repens Chenopodium	FABACEAE		2	G?	5			Х	Χ	Χ		Х				
White Goosefoot	album var album	CHENOPODIA CEAE		1	G5T5	SE 5			Χ	Х	Х		Х				
White Oak	Quercus alba	FAGACEAE	6	3	G5	S5			Χ	Χ	Χ				Χ	χ	х

Common Name	Scientific Name	Family	cc¹	CW ¹	grank ²	Srank ³	COSEWIC4	MNR ⁵	Halton Region ⁶	Greater Toronto Area ⁶	Site District 7E.46	Unit 1 (Pond)	Unit 2 (Old field and riparian wetlands)	Unit 3 (Lowland deciduous forest)	Unit 4 (North Woodlot)	Unit 5 (Valley Forest and floodplain marsh)	Other (TC, HR)
White Trillium	Trillium grandiflorum	LILIACEAE	5	5	G5	S5			Х	Х	Х				х		
Wild Black Cherry	Prunus serotina	ROSACEAE	3	3	G5	S5			Х	Х	Х				х	х	
Wild Mock- cucumber	Echinocystis lobata	CUCURBITAC EAE	3	-2	G5	S5			Х	Х	Х	Х	Х	Х			
Wild-rye Species	Elymus sp	POACEAE											х				
Winterberry	llex verticillata	AQUIFOLIACE AE	5	-4	G5	S5			Χ	Χ	R⁵				Х		
Wood Anemone	Anemone quinquefolia var quinquefolia	RANUNCULAC EAE	7	0	G5	S5			X	X	X					х	
Woolgrass Bulrush	Scirpus atrovirens	CYPERACEAE	3	-5	G5?	S5			Х	Х	Х		х				
Yellow Rocket	Barbarea vulgaris	BRASSICACE AE		0	G?	SE 5			Х	Χ	Χ	х		Х			
Yellow Trout-	Erythronium americanum ssp americanum	LILIACEAE	5	5	G5T5	S5			Х	Х	Х				х	х	

Legend

¹Coefficient of Conservatism and Coefficient of Wetness (Oldham et al., 1995).

- CC = Coefficient of Conservatism. Rank of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters.
- CW = Coefficient of Wetness. -Value between 5 and -5. A value of -5 is assigned to Obligate Wetland (OBL) and 5 to Obligate Upland (UPL), with intermediate values assigned to the remaining categories.

²G-Rank (global)

Global ranks are assigned by a consensus of the network of Conservation Data Centres (CDCs), scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

- G1 Extremely rare—usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.
- G2 Very rare—usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.

- G3 Rare to uncommon—usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.
- G4 Common—usually more than 100 occurrences; usually not susceptible to immediate threats.
- G5 Very common—demonstrably secure under present conditions.

3S-Ranks (provincial)

Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario.

- S1 Critically Imperiled—Critically imperiled in the nation or state/province because of extreme rarity (often 5
 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially
 vulnerable to extirpation from the state/province.
- S2 Imperiled—Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
- S3 Vulnerable—Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors
- S5 Secure—Common, widespread, and abundant in the nation or state/province.
- S#S# Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
- SX Apparently extirpated from Ontario, with little likelihood of rediscovery. Typically not seen in the province for many decades, despite searches at known historic sites.
- SE Exotic; not believed to be a native component of Ontario's flora.

⁴COSEWIC (Committee on the Status of Endangered Wildlife in Canada)

(federal status from COSEWIC NOVEMBER 2010)

- EXT Extinct A species that no longer exists.
- EXP Extirpated A species no longer existing in the wild in Canada, but occurring elsewhere.
- END Endangered A species facing imminent extirpation or extinction.
- THR Threatened A species likely to become endangered if limiting factors are not reversed.
- SC Special Concern (formerly vulnerable) A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
- NAR Not At Risk A species that has been evaluated and found to be not at risk of extinction given the current circumstances.
- DD Data Deficient (formerly Indeterminate) Available information is insufficient to resolve a species' eligibility for assessment or to permit an assessment of the species' risk of extinction.
- * Species on Schedule 1 of Species at Risk Act (SARA)

⁵OMNR (Ontario Ministry of Natural Resources)

(provincial status from MNR September 2010)

The provincial review process is implemented by the MNR's Committee on the Status of Species at Risk in Ontario (COSSARO).

- EXT Extinct—A species that no longer exists anywhere.
- EXP Extirpated—A species that no longer exists in the wild in Ontario but still occurs elsewhere.
- END Endangered A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's *Endangered Species Act (ESA)*.
- THR Threatened—A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed
- SC Special Concern (formerly Vulnerable) —A species with characteristics that make it sensitive to human activities or natural events.
- NAR Not at Risk—A species that has been evaluated and found to be not at risk.
- DD Data Deficient (formerly Indeterminate) —A species for which there is insufficient information for a provincial status recommendation.

⁶ SARA (Species at Risk Act) Status and Schedule

The Act establishes Schedule 1, as the official list of species at risk. It classifies those species as being either Extirpated, Endangered, Threatened, or a Special Concern. Once listed, the measures to protect and recover a listed species are implemented. http://www.sararegistry.gc.ca/sar/listing/listing/e.cfm

- EXT Extinct A species that no longer exists.
- EXP Extirpated A species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
- END Endangered A species that is facing imminent extirpation or extinction.
- THR Threatened A species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
- SC Special Concern A species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Schedule 1: is the official list of species that are classified as extirpated, endangered, threatened, and of special concern.

Schedule 2: species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

Schedule 3: species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

The Act establishes Schedule 1 as the official list of species at risk. However, please note that while Schedule 1 lists species that are extirpated, endangered, threatened and of special concern, the prohibitions do not apply to species of special concern.

Species that were designated at risk by COSEWIC prior to October 1999 (Schedule 2 & 3) must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of *SARA*. After they have been assessed, the Governor in Council may on the recommendation of the Minister, decide on whether or not they should be added to the List of Species at Risk.

- Government of Canada. Species at Risk Public Registry. Website: [http://www.sararegistry.gc.ca/default_e.cfm November 3, 2010]
- Glossary: http://www.sararegistry.gc.ca/about/glossary/default_e.cfm#e
- Species Index A-Z: http://www.sararegistry.gc.ca/sar/index/default_e.cfm
- Species Listing by Schedule: http://www.sararegistry.gc.ca/sar/listing/default_e.cfm

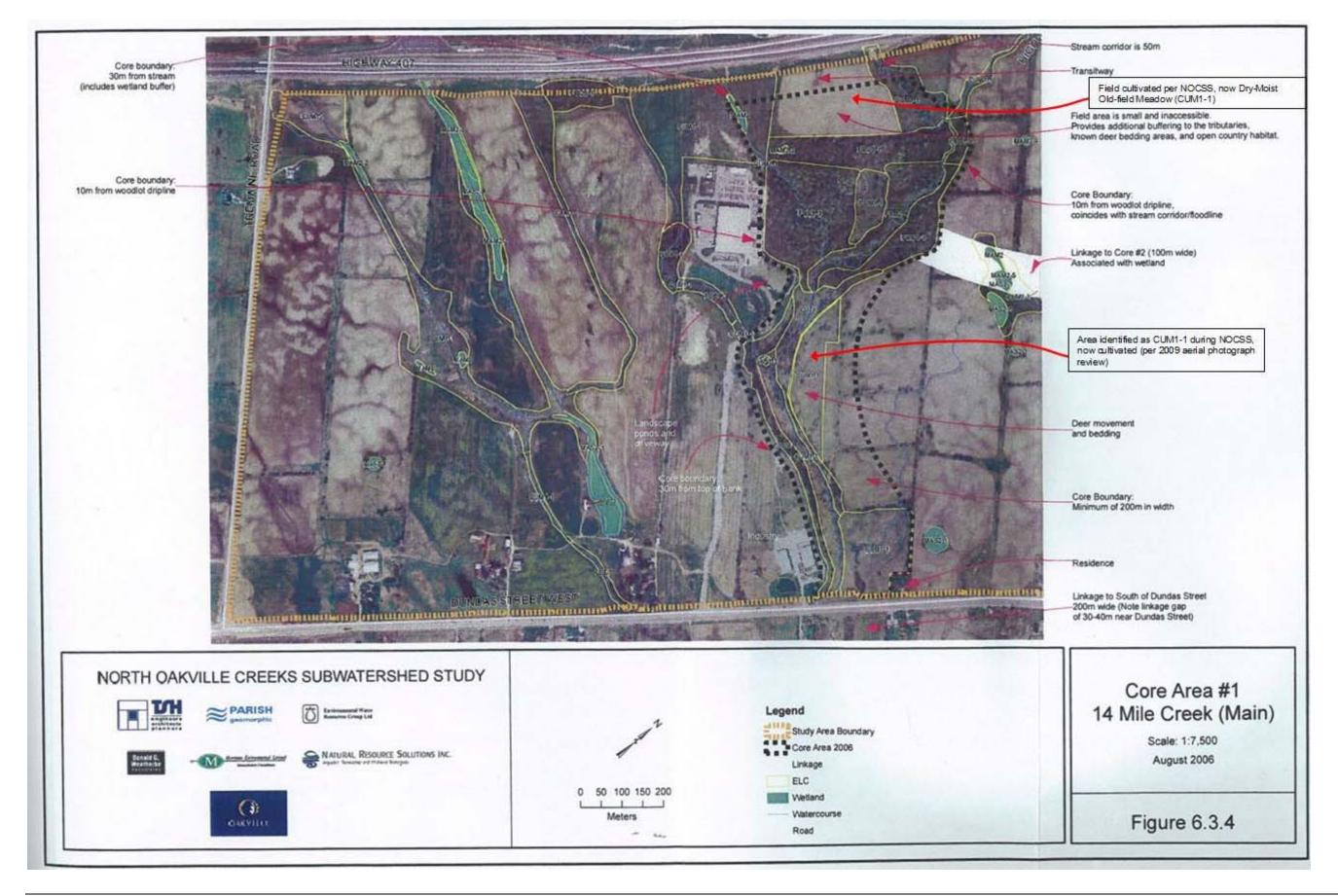
⁷ Regional Status

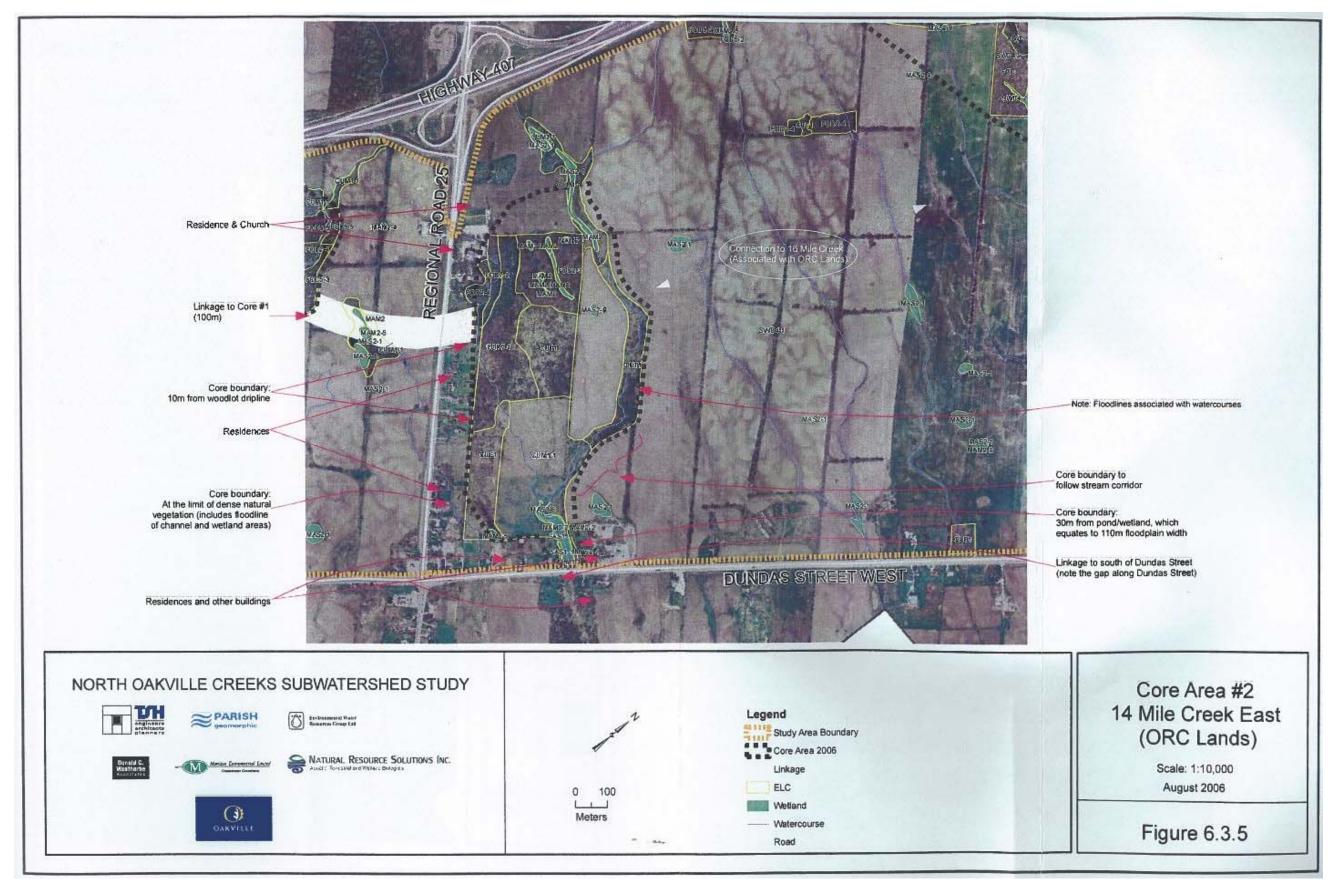
from The Distribution and Status of the Vascular Plants of the Greater Toronto Area (Varga et. al. 2000).

"Plant rarity is based on the number of locations for a native plant species" and also takes into account native species restricted to specialized rare habitats. For the Greater Toronto Area column, "A species is considered rare in the Greater Toronto Area if it is rare or uncommon in a least four of... Halton, Peel, Toronto, York, and Durham".

- X Present
- U uncommon native species
- R rare native species
- R# number of stations for a rare native species
- E extirpated native species
- + introduced species
- X+ introduced in municipality
- SR sight record
- LR literature record

Appendix 5.4 – Core #1 and Linkage to Core #2 Vegetation Community Mapping (Modified by MMM from NOCSS)





Appendix 5.5 – ELC Field Data Sheets

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UTM OF 454 NORTHING ro. Shalle 2017 POLYGON: 2TD - MAS2-1 EASTING Brown 8 weenston 24 SITE: BENTAL 7 က Class OK Brown dk Bann 3 Carley DATE: SEPT Type SURVEYOR(S): N Red Red Slope % 20 15 Dr Position Aspect 20cm SEM 1-2% 8 20 20 8 20 0 SOILS ONTARIO X. 8 ELC MOTTLES ON TEXTURE GLEY LEGEND CLASS SOIL TEXTURE x HORIZON COURSE FRAGMENTS COURSE FRAGMENTS COURSE FRAGMENTS SURFACE ROCKINESS WATER TABLE PORE SIZE DISC #2 SOIL SURVEY MAP TEXTURE TEXTURE **EFFECTIVE TEXTURE** SURFACE STONINESS BEDROCK DEPTH OF ORGANICS PORE SIZE DISC #1 MOISTURE REGIME 60 CARBONATES 0 20 DEPTH TO / OF P/A PP

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UTM WP 460 Ŋ EASTING 2014 SITE: RENTALL
POLYGON: SB 124 154 က Type Class POLYGON: S B DATE: SEPT SURVEYOR(S): Slope Aspect % T 10/0 MSCL OB 2 P/A PP Dr Position SOILS ONTARIO ECC SOIL TEXTURE × HORIZON 1 Pm COURSE FRAGMENTS EFFECTIVE TEXTURE SURFACE STONINESS SURFACE ROCKINESS GLEY PORE SIZE DISC #1 PORE SIZE DISC #2 TEXTURE COURSE FRAGMENTS TEXTURE TEXTURE COURSE FRAGMENTS MOTTLES BEDROCK WATER TABLE CARBONATES DEPTH OF ORGANICS MOISTURE REGIME SOIL SURVEY MAP LEGEND CLASS DEPTH TO / OF

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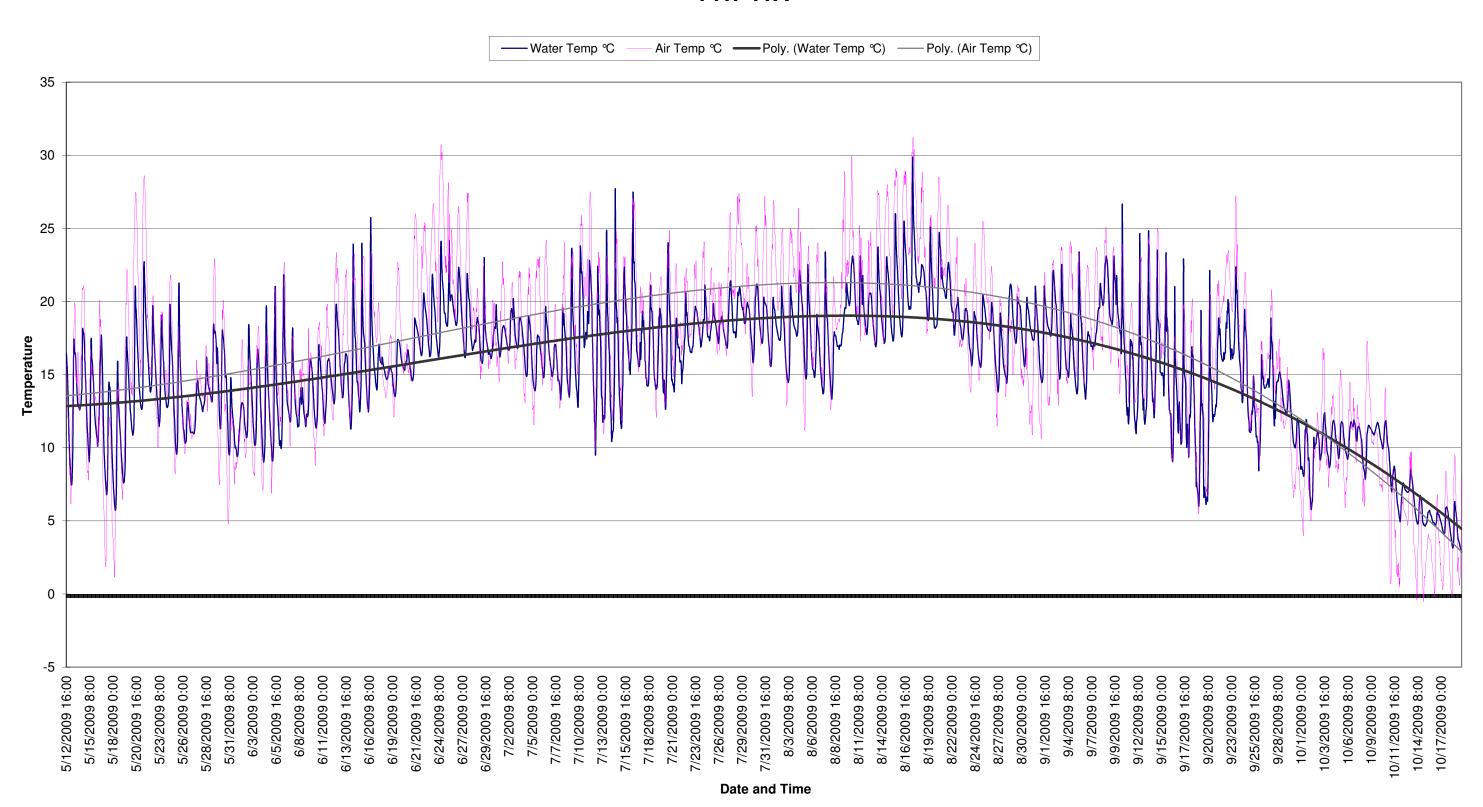
NORTHING 10 MLD 4 EASTING 24 2814 Class Z Model Johns ന SITE: BENTAL of brown DATE: SEPT 50 auger refused P/A PP Dr Position Aspect % Type SURVEYOR(S): POLYGON: N Slope V. moist 8 (1) M 000 0 1 SOILS ONTARIO TEXTURE × HORIZON 古 TEXTURE BEDROCK SOIL MOTTLES GLEY LEGEND CLASS SURFACE STONINESS MOISTURE REGIME COURSE FRAGMENTS TEXTURE COURSE FRAGMENTS TEXTURE COURSE FRAGMENTS EFFECTIVE TEXTURE SURFACE ROCKINESS WATER TABLE CARBONATES DEPTH OF ORGANICS PORE SIZE DISC #1 PORE SIZE DISC #2 SOIL SURVEY MAP DEPTH TO / OF

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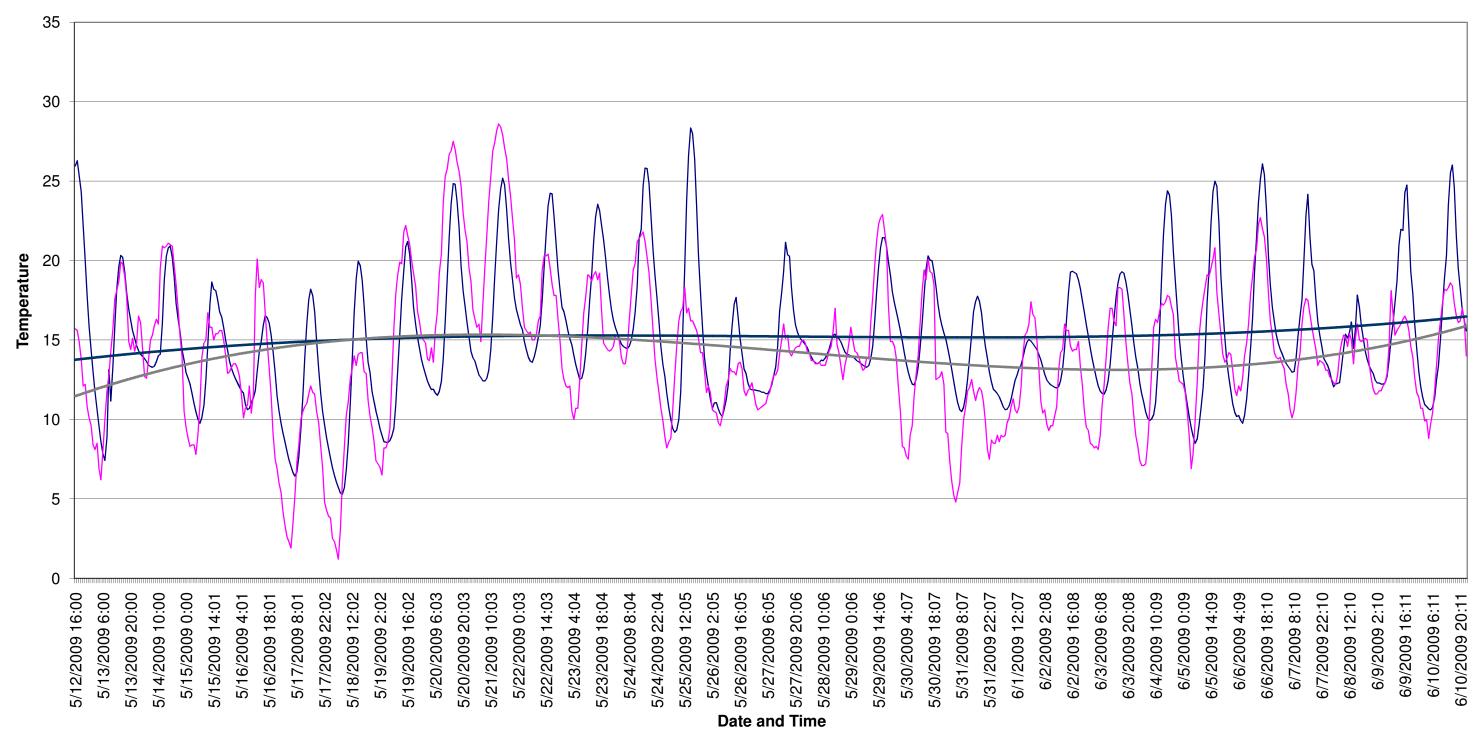
Appendix 5.6 – Water Temperature Monitoring Data

14W-11A

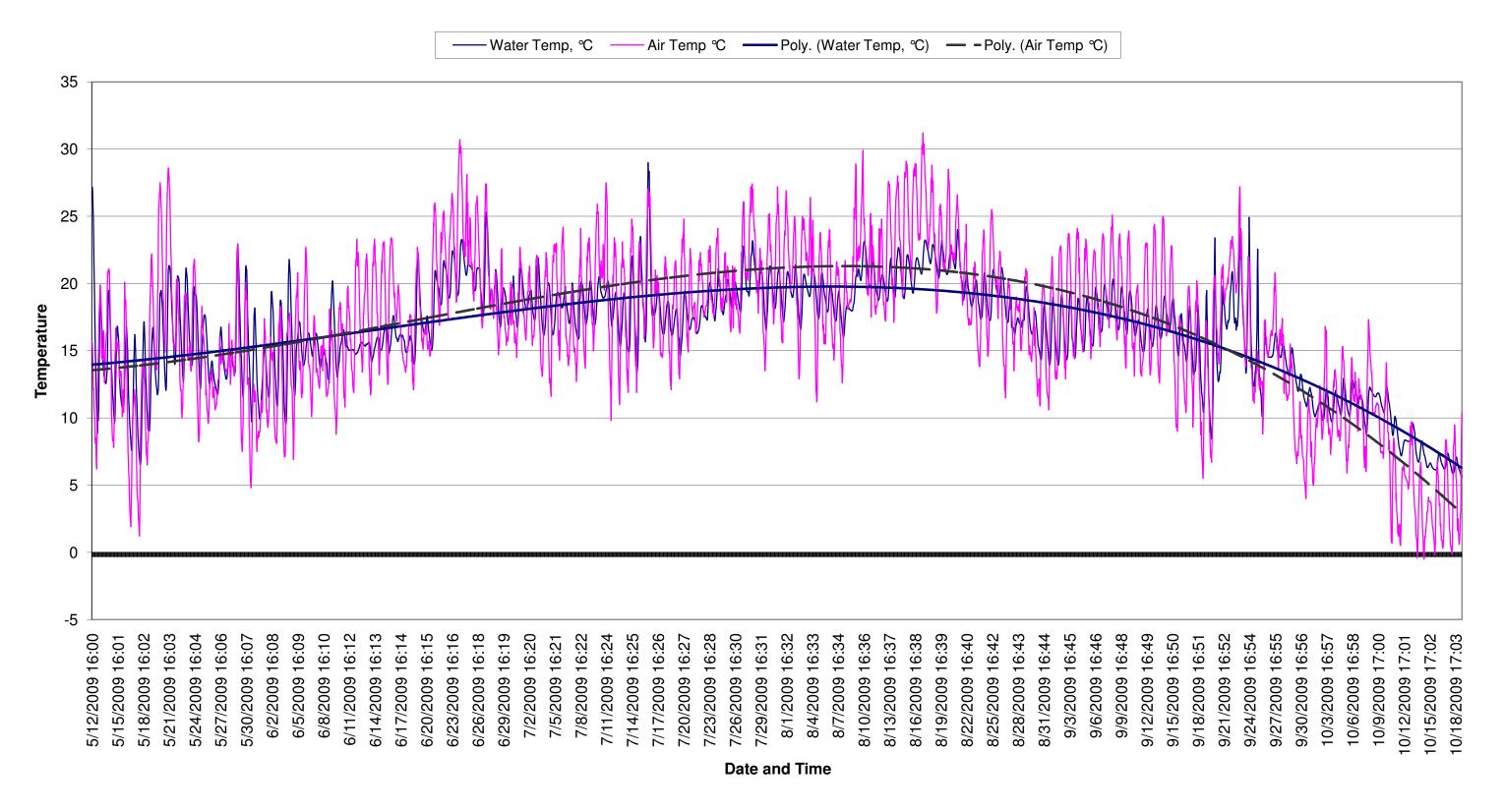


14W-12A

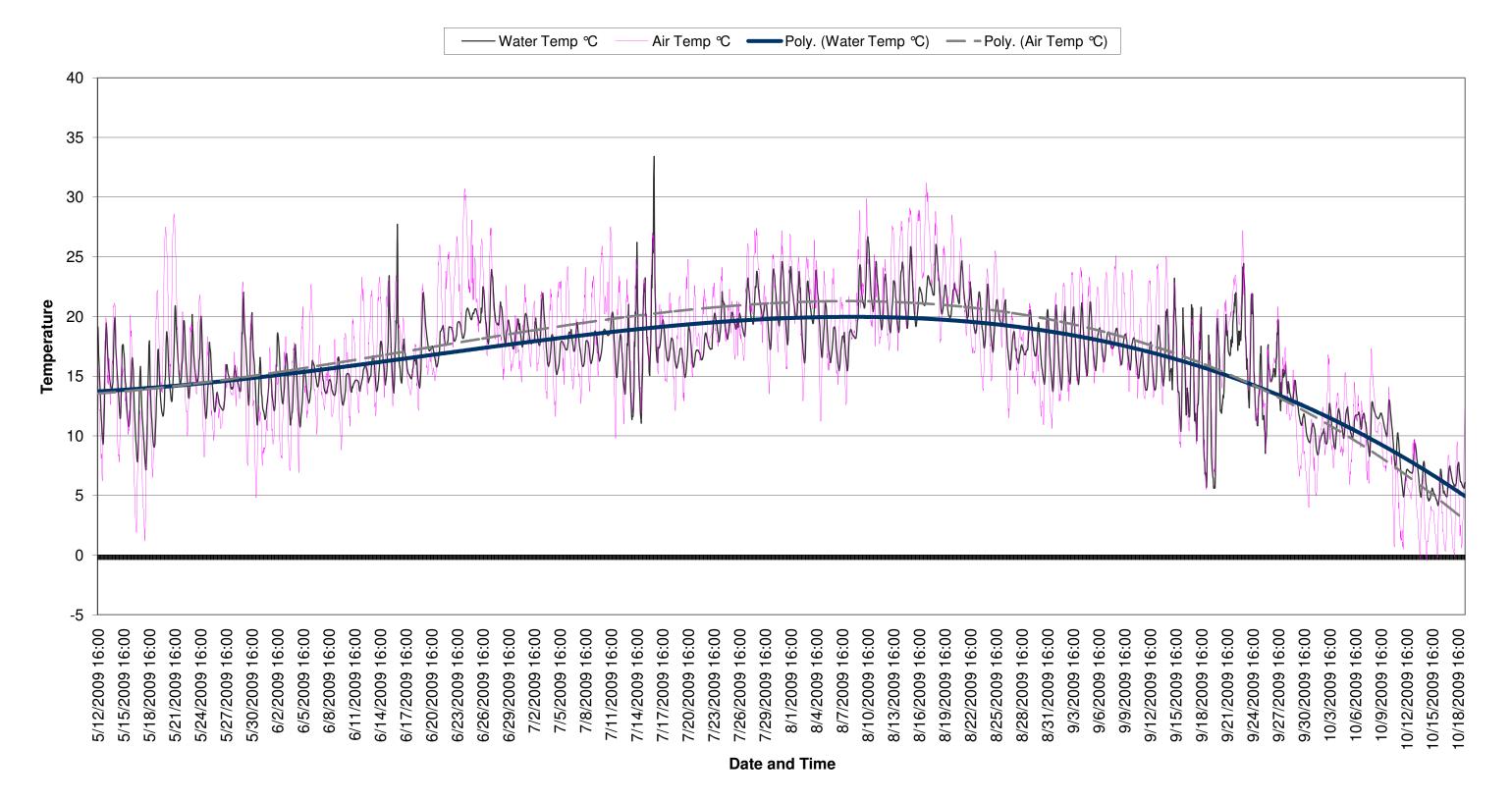




14W-16



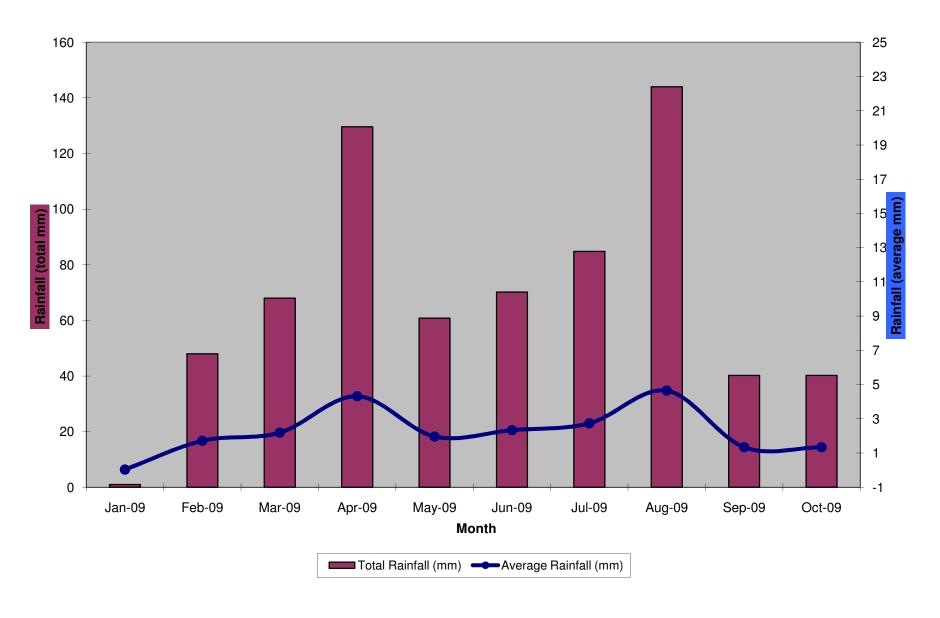
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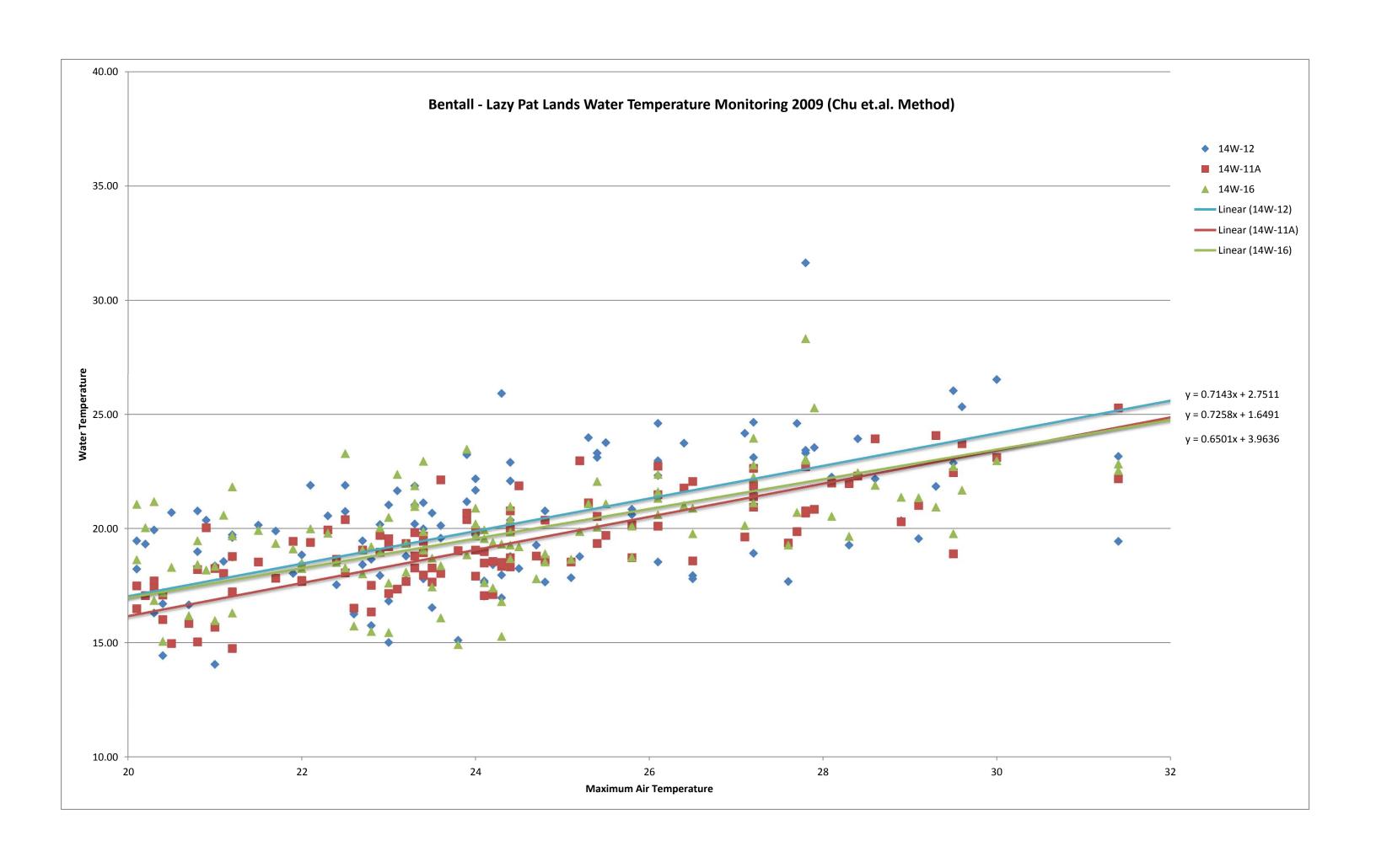
Dissolved Oxygen	Result	Meaning
Dissulved Oxygen		Biotic Crisis
		Minimum limit in many states
	_	USEPA minimum limit
		Adequate for fish
		Median of US Sites
	8.7 - 10.5	Middle 50% US Sites
DO Saturation	<80%	Evidence of elevated Oxy use
	>90%	High saturation of DO
TDS	Result	Meaning
	250	USEPA Maximum for water supply
	500	New York state Maximum
	<100	Low Concentration
	100-500	Medium Concentration
	500-1000	High Concentration
		Very High Concentration
	>1000	very riight concentration
рН	Result	Meaning
		Stressed
		Suitable for biota
		Most Productive
		Median for US Sites
		Middle 50% US Sites
	7.0 0.1	Wilder 50 /6 GG Gites
Temperature	Result	Meaning
		Coldwater
		Coolwater
		Warmwater
	, 20	· · · · · · · · · · · · · · · · · · ·
Conductivity	k-value	TDS - k * SC
Conductivity		
Conductivity		
Conductivity		Average k value
Conductivity	0.65	Average k value Minimum variation of k
Conductivity	0.65	•
Conductivity	0.65	•

Sampling Date/Time	Temperature	TDS Value	Dissolved Oxygen	рН	Conductivity	Evaluation of TDS	Evaluation of DO	Evaluation of pH	Thermal Category	Evaluation of DO Saturation	Calculated TDS from Conductivity	Evaulation of Calculated TDS	Notes
14W-11A	-												
										High Saturation			
May 12, 2009 - 1015	20.2	587	10.31	8.38	1158	High	Adequate for Fish	Suitable for biota	Potential Coolwater		752.7	High	
May 28, 2009 - 0845	15.7	896	7.28	7.75	1801	High	Adequate for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1170.65	VERY HIGH	
June 11, 2009 - 0850	14	926	4.58	7.31	1848	High	Poor for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1201.2	VERY HIGH	
June 26, 2009 - 1108	22	1141	5.3	7 42	2285	VERY HIGH	Adequate for Fish	Suitable for biota	Potential Coolwater	Oxygen Usage	1485 25	VERY HIGH	
July 8, 2009 - 0915			0.0	7.12	2200	VERTITION	Adoquate for Fight	Cultable for blota	Totomiai oddiwater	exygen edage	1100.20	VERTIFICATI	
										High Saturation			
July 30, 2009 - 0938	17.5	475	7.65	7.95	930	Medium	Adequate for Fish	Suitable for biota	Potential Coldwater		604.5	High	
August 28, 2009 - 1027	16.4	830	5.98	7.33	1637	High	Adequate for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1064.05	VERY HIGH	
						-							No data for this location on this date. Site was dry with very wet soils. No flowing or standing
September 10, 2009 - 0913													water u/s or d/s.
September 30, 2009 - 0932	11	855	8.4	7.8	1679	High	Adequate for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1091.35	VERY HIGH	
October 19, 2009 - 0910	3	848	6.14	7.46	1700	High	Adequate for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1105	VERY HIGH	
October 30, 2009 - 0939	10	796	7.11	7.85	1588	High	Adequate for Fish	Suitable for biota	Potential Coldwater	Oxygen Usage	1032.2	VERY HIGH	
Upstream from Logger	T		1					ī	T	1		T	1
July 8, 2009 - 0915 14W-12	22.5		4.84	8.4	2530		Poor for Fish	Suitable for biota	Potential Coolwater	Oxygen Usage	1644.5	VERY HIGH	Shocking Site at Field Crossing
May 28, 2009 - 0900	13.9	815	7.57	7.9	1630	High	Adequate for Fish	Suitable for biota	Potential Coldwater		1059.5	VERY HIGH	
June 11, 2009 - 0930	15.3	813	5.67	7.54		_	Adequate for Fish	Suitable for biota	Potential Coldwater		1062.1	VERY HIGH	
June 26, 2009 - 1157	22	858	5.2			·	Adequate for Fish	Suitable for biota	Potential Coolwater		1222	VERY HIGH	
						·	•						
July 8, 2009 - 1420	21	1036	5.4	8.32	2062	VERY HIGH	Adequate for Fish	Suitable for biota	Potential Coolwater		1340.3	VERY HIGH	Highest volume of flowing water observed to date
July 30, 2009 - 1042	19	444	7.77	7.79	882	Medium	Adequate for Fish	Suitable for biota	Potential Coolwater		573.3	High	on site.
August 28, 2009 - 1135	20.9	899	7.28	7.89	1797	High	Adequate for Fish	Suitable for biota	Potential Coolwater		1168.05	VERY HIGH	
September 10, 2009 - 1025	16.3	740	4.88				Poor for Fish	Suitable for biota	Potential Coldwater		967.85	High	
September 30, 2009 - 1038 October 19, 2009 - 1255	10.5	896 639	7.25 8.93	7.57			Adequate for Fish Adequate for Fish	Suitable for biota Suitable for biota	Potential Coldwater Potential Coldwater		1138.8 832	VERY HIGH High	
October 30, 2009 - 1200	10.4	795	8.43				Adequate for Fish	Suitable for biota	Potential Coldwater		1034.15	VERY HIGH	
14W-12A		1	1	1									
May 28, 2009 - 0900	13.8	639	3.38	7.53	1276	High	Very poor for Fish	Suitable for biota	Potential Coldwater		829.4	High	
October 30, 2009 - 1136 14W-16	10.5	726	6.7	7.91	1454	High	Adequate for Fish	Suitable for biota	Potential Coldwater		945.1	High	
May 12, 2009 - 1400	19	731	14	8.38	1434	High	Adequate for Fish	Suitable for biota	Potential Coolwater		932.1	High	
May 28, 2009 - 0900	13.1	862	8.62			·	Adequate for Fish	Suitable for biota	Potential Coldwater		1114.1	VERY HIGH	
						Ĭ	•						
June 11, 2009 - 0905	16	660	10.82	7.92		Ĭ	Adequate for Fish	Suitable for biota	Potential Coldwater		856.05	High	
June 26, 2009 - 1130	22.6	687	8.58	8.04	1384	High	Adequate for Fish	Suitable for biota	Potential Coolwater		899.6	High	
July 8, 2009 - 1230	22	988	6.35	8.45	1971	High	Adequate for Fish	Suitable for biota	Potential Coolwater		1281.15	VERY HIGH	
July 30, 2009 - 1012	17	586	7.89	7.77	1174	High	Adequate for Fish	Suitable for biota	Potential Coldwater		763.1	High	
August 28, 2009 - 1100	18.5	917	7.95	7.86	1807	High	Adequate for Fish	Suitable for biota	Potential Coolwater		1174.55	VERY HIGH	
September 10, 2009 - 0945	16.5	676	7.5				Adequate for Fish	Suitable for biota	Potential Coldwater		877.5	High	
September 30, 2009 - 1007	11.5	918	8.89	7.83			Adequate for Fish	Suitable for biota	Potential Coldwater			VERY HIGH	
October 19, 2009 - 1156 October 30, 2009 -1129	5.5 10.7	815 935	9.95 9.35	8.09 8.05			Adequate for Fish Adequate for Fish	Suitable for biota Suitable for biota	Potential Coldwater Potential Coldwater		1053.65 1218.75	VERY HIGH VERY HIGH	
Small and Large Pond		,,,,,,				· ···•			- 1.5.mai Columnia		.=:00		
Small Pond - July 8, 2009	26.3	189	5.3	9.3	380	Medium	Adequate for Fish	Alkaline	Potential Warmwater		247	Medium	
Large Pond - July 8, 2009	26	371	4.51	8.58	745	Medium	Poor for Fish	Suitable for biota	Potential Warmwater		484.25	Medium	

Recorded Rainfall



Page 1



Appendix 5.7 – Field Survey Collection Sheets

	o Benthos Blomor		1 1010 011001.		
Date: May 12/2009	Stream name				
Time 10:15am	Site #: 1니(1 A11-6			Total Control
Agency: Aurora		trold of 3 replicates; I	at/Long or UTM		
Investigators: SR 3 TS	Pri			leveling (m sell)	
				ilevation (m asi):	
Water Quality	W 1183			Datum/zone:	
Water Temperature (°C): 20.2	Conductivity	(uS/cm): \\	58	pH: \$.34	
DO (mg/l): 10.31	Alkalinity (mg	A as CaCO ₃): ~	DS 547	·	
Site Description and Map	1-1		ì		
the second second		ĺ.	1 1		
Draw a map of the site (with landmarks) and indic	ate areas sampled. Attac	h photograph (optic	onel)		
Show north arrow.		1	\ /		
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			} '		
				\	·
enthos Collection Method (circle one)	-	Gear Type (circle	one)		
7	ab Sample	• D-net	+ Ponar	Other (specify):	
Other (specify):				- Gales (appelly).	_
Outer (apecity).	1	• Ekman	Rock Baskets		<u></u>
		flesh Size: 500 n	niCFOFI (or specify)		
		Max.	Wetted	Max. Hydraulic	# Grabs pooled
Sampling distance	e Time	********			
Sub-samples Sampling distance covered (m				_Head (mm)	
coveteq (w		Depth (m)	Width (m)	Head (mm)	per sample
and-equibles				Head (mm)	

Substrate			Clone	Descript		
Substrate	Enter dominant substrate de	as and second dominant class	Class 1	Descript Clay (ha		
A 7		ss and secure dummant dess	2		y, < 0.06 mm parti	rie diemeter\
	for each sub-sample Sample 1	Comple 2 Go				
i i i	Osinpe :	Sample 2 Sa	mple 3 3		ainy, 0.06 - 2 mm) 2 - 65 mm)	
Dominant)					
			6		65 - 250 mm) (> 250 mm)	
2nd						
Dominant	_		,	Deu No.	•	
Substrate N	iotes - clay fi	nen silt contin	urs into Fi	rlds		
Organic Mai	tter-Areai Coverage		Sample 1		Sample 2	Semple 3
Use 1: Abun	dant, 2: Present, 3: Absent	Woody Debris	3			
		Detritis	1			
Riperian Ve	getative Community				% Canopy Co	OVER (circle one)
Use: 1 (None	e), 2 (cultivated), 3 (meadow), 4 (scrubland), 5 (forest, mainly confi	erous), 6 (forest, mainly de	ciduous)	10	`
Zone (dist. F	rom water's e Left Bank	Right Bank (facing downstream)			0-24) 25-49
1.5-	10 m 3	3			56-74	75-100
10-3	30 m Z_	2			If instrument	used, record type:
30-1	00 m	2				
Aquatic Mac	crophytes and Algae (Use: 1	(Abundant), 2 (Present), 3 (Absent). Circle dom	inent type.			
Macrophytes	Sample 1 Sample 2	Sample 3	Algae	Sample		Sample 3
Emergent			Floating Algae			
Rooted Float	ing Z	and weed (x1)	Filaments			
Submergent	3		Attached Algae	3		
Free Floating	3		Silmes or Crusts	3		
Stream Size	/Flow					
Bank Full Wid	dth (m):	Discharge (m³/s, optional, indicate met	hod):			
River Charac	cterisation (circle one)	Perennial Intermittent	Unknown		1.8	
Notes (esp. rei	lated to land-use, habitat, obvio	ous stressors)				
		X 5				
			_			
Candidate re	ference Site - Minimally In	pacted? (circle one)	Yes No			
General Con	nments					
Flows	through	Agr. Fields				
High	HOW YND	ff contributes	Clara			
₹ "		11 11	· · · · · · · · · · · · · · · · · · ·			
			10.00			

ream Name Stream Code (Unique Code) Site Code	Year Sample
purteen Mile Creek FOR 14W-11A	2009 1
corrected Grid (XX) Easting (XXX,XXX) Northing (X,XXX,XXX) Lati- Deg (15-60) Min (0-60) Sec (0-60) Long- Deg M	50-75) Min (0-60) Sec (0-60
ordinates rected Grid (XXX) Easting (XXX,XXX) Northing (X,XXX,XXX) Source of GIS Stream Layer used to correct UTM coordinates	ate data (e.g. NRVIS 2)
coordinates Durce of Coordinates (OBM Map, GPS Unit, Differential GPS) Datum of Coordinate Source: (NAD 27 (NAD 83) WGS 8	4)
GPS Unit (This can be found on the legends of maps or in set-up or	
ownship/Municipality Lot Concession MNR W	atershed
Vakville 12 as Furra	xde
Exit from Dundas Street onto farm acress drive	way. Drive
north to the end of the gravel road. Follow GF	5 Soint
perthoast of the access road	,
Description	1
ne watercourse flaws between two active agricultural field	25 WITH
sinimal buffer seg to either side of the watercouse. S.	rall treed
stands us 3 movediately dis of site. The channel of	prays to
se straightened to accommodate the agricultural fi	elds
ite Marker Description	
Ownstream Marker Meesure from Stake to Site Bearing (Degrees): Distance (m.): Numbers: Looking Upstream: Looking	Downstraam
Bearing (Degrees): Distance (m.): Numbers: Looking Upstream: Looking Description:	Downstream:
to permanent site marked; marked with flag	ing tape
	-
3 GPS Point	
pstream Marker Measure from Stake to Site Photograph	Downstream:
pstream Marker Meesure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking Description:	
pstream Marker Messure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking Description: Na Permanent site marker; tree on left wis ban	Downstream:
pstream Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking Description:	
Description: Photograph Numbers: Looking Upstream: Looking Upstre	
properties Marker Messure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Degrees: Looking Upstream: Looking Upstream: Looking Upstream: Date (YYYY/MM/DD) Date (YYYY/MM/DD) Date (YYYY/MM/DD)	09 05 12
pstreem Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking Description: Permanent site marker; tree on left w/s ban Clagged; last point rew S. Ramkin J. Smith Recorder S. Ramkin Date (YYYY/MM/DD) 20 Description:	k hus been
petreern Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking	Site Length (m.) 40
pstream Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking	Site Length (m.) + 0 Enter dates and initials when data entered in Computer.
pstreem Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking Description: Permanent site marker: tree on reft w/s ban Plaged; Par point Tew S. Rankin J. Smith Recorder S. Runkin Date (YYYY/MM/DD) 20 Americans Limited locations within the property limit where a 40 m Section of watercourse could be located in order to complete asset.	Site Length (m.) Enter dates and initials when data entered in Computer. Date Init.
pstream Marker Measure from Stake to Site Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking	Site Length (m.) Enter dates and initials when data entered in Computer. Date Init. Entered DS DS JX
pstream Marker Messure from Stake to Sile Bearing (Degrees): Distance (m.): Photograph Numbers: Looking Upstream: Looking	Site Length (m.) Enter dates and initials when data entered in Computer. Date Init.

fri .

Stream Name:	res Fo		eam Code:	Site C	iode:	Year.		nple:	Date:200 (YYYY/MW/DI	01/05	115
or each landuse,	check off a	Il boxes which	apply. Be su	re to include con	ments explai	ning the par	liculars, inc	duding nan	nes and numbe	ers of co	ntact
Site Feature	98	Ongoing and Active	Historical Evidence	No Evidence but Reported	No Evidend	ce Unkn	own		Comments		
Potential Point or No Source Contaminant						[>	3				
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han	nel Mor	pholo	Channel Morphology Data Forn	orm			Γ									
三子	Name: Ithmile Cxco	X	(Unique Code):	FOR		Code: [4/2-11 A		2009 ·	Sample #:		Date: 2009 0 5 12 (TYYY/MMDD):	// s a / c	7. Transect #	, o , , ,	λ, Δ	
and F	fransect and Point Layout								L				Active Cha	11		(
table rts rec	Use this table to determine the number of transects and points required, given the minimum stream width.	he number e minimum	of transects n stream width.		Calculate I	he transect and numbe	Calculate the transect spacing from the site length and number of transects:	a the	%	Particle S asure all pa	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.)	γ		<u> </u>
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	Minimum Width (m.) 1.0	0.7	Site	Site Length	Material	je.	-	8	Spacing (m.) Point Spacing	- 1		0.
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1.5 - 3.0	12		5	Nembe	器	S	Site Length (m.) $\psi \oslash$	040	# # # # # # # # # # # # # # # # # # #		\dagger	_				
1.0 - 1.49	15		3		П				Sand		0.		- Irst point i	rirst point is S/2 from the left bank	eft bank	
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		Meas	Measure depth and hydraulic head to	Parti	article Sizes	Cover	Types	Types Present			Aqu	etic Veget	Aquatic Vegetation Types Present	Present	Vegetation	
	S Hard	82	est.		(mm.)	Quality	₹ 05	T - g	0 0 c	0-		Put X In	Put X in box if present Put – if not.	ŧ	lypes FL = Filamen tous	<u></u>
Number	(m.):	(mm.)	Head (mm.)	Point	in Ring	\neg	0	-		-	FI. AL	SS	MC WC	GR TR	 	
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	3.5	35	9	5.	a · S	×		Ŕ	H				S		WC = Water	e 4
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															T_	
	Bank to	tape height	Bank to tape height: If a height is >2m enter X in box only,	inter X in box	only.	Amount of	# of Vegetated		Dominant for	Vegetation	Dominant Vegetation Type: Put X in the box of the dominant Anal II the 1 x 2 m area Dt 4 in all others	in the box	of the	Cover Quality -99 = Not Measurable	ilty Veasurable	
E E		se enter valt	- 28	ration points		(mm.)	Bank (mil of 16)						6	0 = No Cov	rer ided Cover	
	£,	O mm.	250 mm.	750 mm.	1500 mm.		(מו מו ומס)	None		Cultivated	Meadow	Scrubland	Forest	2 = Unamb	2 * Unembedded Cover	
5		200	155	100	0	/	e	Ш		П	Ø			Enter da Initials w	Enter dates and initials when data	
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tous
Agae
AL = NonFlamen-불 3 Cover Quality
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Spacing (m.) U· 6 3
Point Spacing Active Width W (m.)
Spacing, S # Points per Transact Date First point is S/2 from the left bank 0.63 270 ĸ Corrected ъ Entered Verified 4 Aquatic Vegetation Types Present 8 X \mathbb{Z} X Active Channel Width (W) (m.) Transact # Put X in box if present Put – if not. Š Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. Š X X ĸ Date: 2004/05/12_ (YYYY/MM/DD): Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.01 Size 0.0 99 0.10 1001 ₹ Meadow N \mathbf{k} 교 Unconsolidated Clay Consolidated Clay Large Boulders Bedrock 0--Cultivated Material Sample #: Sand 00 0 C × 툸 40 None (Number of Transacts - 1) # - @ --氏 O ∪ ネ Site N46, 114 2009 40 Transect Spacing (m.) χ Types Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 2 C Site Length (m.) 2 ₹000 Quality (-89, 0, 1, 2) Amount of Undercut (mm.) Comments Cover R W Name The 7 Minimum Width (m.) 1.0 Number of Transacts 15 ~ Maximum in Ring Number of Points/ Transact (N) 2 -Particle Sizes 5 77 0 P (E) Ū Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points 1351 Point vi Channel Morphology Data Form = 750 mm. 5 7 J U Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. 220 Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. Bank Angle 250 mm. Ø Ø 2 150 9 S က ~ .,5 4 30 20 Depth (mm.) 0 270 0 mm. I 220 5 # Transects at Site 0 9 72 15 2 0 ransect and Point Layout 11 1. 82 22 Location **v** 2m びば Ē ~ Minimum Width (m.) 1.0 - 1.49 1.5 - 3.0Bank Particle Median Diameters (mm.) > 3.0 **~** 1.0 Right Bank Point Number Left ~ ന 4 S 9

Name:			Unique Code):	. ::		Code: 141,7~11.4∆	2-114	_	2009	Sample #:	4	Cate:	Date: Z = 07 05 17 (YYYY/MIM/DD);	111	Transect #	8	\$\lambda{\gamma} \footnote{10.5}	<u> </u>
ransect and	ransact and Point Layout									L					ive Chang	$\ \ $] _
Use this tab and points n	Use this table to determine the number of transacts and points required, given the minimum stream width.	he number o	f transects stream width.		Calculate site length	Calculate the transect spacing from the site length and number of transects:	spacing ir of trans	from the sects:		<u></u>	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	Particle Size Codes sure all particles bet 30 mm and 1000 mm	des between mm.)	Widt	Width (W) (m.)		۶.	ال ال
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	Minimum Width (m.) >. D	۵		Site Length	أع	Material	Jain 1		Size	3 2	Spacing (m.) Point Spacing		S Width	W.m.)
> 3.0	9		9			┰┟	(Numb	(Number of Transacts - 1)	9cts - 1)	5 8	Unconsolidated Clay	A	0.01	Spa	Spacing, S	11	# Points per Transect	ransect
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1.0 - 1.49	9 15		3			ĪĪ				Sand			0.10	FI	First point is S/2 from the left bank	S/2 from	the left b	ž
× 1.0	50		2	Transe	Number of Points/ Transect (N)	3 T	ansect S	Transect Spacing (m.) \mathcal{Z} . ξ	2.65		Large Boulders Redmork	go	1001	8	Compass Bearing:	0	274	
		Measur	Measure depth and hudrautic head to	Parti	article Sizes	Cover	F	Types Present	1			<u> </u>	Aquetic	Vegetatio	Aquatic Vegetation Types Present	resent		Vegefation
		near	nearest 5 mm.		(mm.)	Quality	≯ ∘	K 0 5	π - α ο	6 0 €	٥		ፈ	t X In box if pri Put – if not.	Put X In box if present Put – if not.		<u>, </u>	Types FL = Filamen-
Point Number	Location (m.)	Depth (mm.)	Hydraulic Head (mm.)	n.) Point	Maximum In Ring	0, 1, 2)		, c o		E 34	- =	4	장	SS	WC.	S.	Ĭ,	Agae
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2	0h.2	2 7	98	S	5	Ø	b		H	#						K		Algae SS = Moss MC = Macro-
8	3.00	88	Ø	Š	Š	0										X		WC = Water- cress
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Bank	Bank to els	tape height; il	Bank Angle f a height is >2r is in proper obs	Bank Angle Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points		Amount of Undercut	Squar Squar	# of Vegetated Squares on Bank	9	Dominant minant tyl	Vegetatik pe in the	n Type: 1 x 2 m.	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others.	e box of t	Hers.	966-0 100-0	Cover Quality -99 = Not Measurable 0 = No Cover	urable
	^ 2m	0 mm.	250 mm.	750 mm.	1500 mm.	É .	9	(out of 16)	None		Cultivated	Meadow		Scrubland	Forest		1 = Embedded Cover 2 = Unembedded Cover	Cover ad Cover
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Oiameters (mm.)		5,.	5,	ij	į													+

Stream Name:			Stream Code: (Unique Code):			Sife Code: 141	Site Code: 14 W-11 A	200	. 6	Sample #:	<u>36</u>	rte: 200	Date: 2009/05/12 (mm//MM/DD):	Transact #	7 # 20	<u>s</u>	\
ransect and	Fransect and Point Layout										2000			Active	Ш		,] _
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		neare	yaraunc nead to nearest 5 mm.		(mm.)	-	≥ «	ж о ж о	_	a •			PutXi	Put X in box if present	Jen K	<u>-</u> ≧ Œ	Types Fl = Filamen
Point Number	Location (m.)	Depth (mm.)	Hydraulic Head (mm.)	Point	Maximum In Ring	(-99. 0, 1, 2)	, , ,	2 C D	5 0 75 F 18 0	9 5 2) - E	F	SS	MC V	WC	F	tous Agae
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ю	3,15	75	Ø	is	5	Q								区			WC = Water- cress
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Bark	Bank to 1	lape height; If	Bank Angle Bank to tape height! If a height is >2m enter X in box only,	enter X in box		Amount of Undercut	# of Vegetated Squares on	etsted	\ \delta \text{\ti}\\\ \text{\ti}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\\\ \text{\ti}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\text{\tex{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tetx{\texi}\text{\text{\texi}\text{\text{\texi}\text{\text{\text{\texi}\text{\texi}\text{\texi}\text{\texi{\texi{\texi{\texi{\texi}\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\tet	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others.	etation Ty	De: Put)	Fut - in a	x of the	0 6 0	Cover Quality -99 = Not Measurable 0 = No Cover	rrable
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Bank Particle Median		Ŋ	ij	17	7	Comments:	 							 -	15 3	Entered (4)	200
Oiameters (mm.)		ý	Ÿ		ć										<u> </u>	Verified	+

3 OSTAR AL = Non-Filamen-Filamen-Fors Algae SS = Mass MC = Macro-Cress GR = Gress TR = Terres-Frial Date Inft. Cover Quality
-99 = Not Measurable
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1 = Embedded Cover
2 = Unembedded Cover Enter dates and irritials when data entered in computer Vegetation Types Spacing (m.)
Point Spacing Active Width W (m.)
Spacing, S = # Points per Transact First point is S/2 from the left bank 0.57 <u>q</u> 14 본 Corrected Verified 290 Entered g R X X Date: 2009 105/12 | Transect # 5 Aquatic Vegetation Types Present Active Channel Width (W) (m.) Put X in box if present Put – if not. S ¥ Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. MC Point X X Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.011 100 0.0 0.05 Size 0.0 ¥ Meadow Unconsolidated Clay ď Consolidated Clay Large Boulders Bedrock 0-5 Cultivated \triangleright Material Sample #: Sand 00 00 E × ぎ None (Number of Transacts - 1) Transect Spacing (m.) 2 45 Year: 2009 F - a --氏 0 c × 1 tree = Forest Site Length (m.) 4DTypes Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: R 0 3 C 9 Site Code: 1박 W>~ 11위 M **₹00**0 Amount of Undercut (mm.) Comments Cover Quality (-99, 3 Ø 0 Virimum Width (m.) /, O X Number of Transacts / 5 X ~ Maximum In Ring Number of Points/ Transect (N) Particle Sizes Si 1500 mm. S V O こ 0 5 (mm.) Bank to tape height; If a height is >2m enter X in box only, 9 else enter values in proper observation points Channel Morphology Data Form
Stream Code:
(Unique Code): Polat 750 mm. ú V 3 155 S J Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. 250 mm. 93 Ø Ø 9 S 751 21 က ~ J S Depth (mm.) 35 0 0 mm. 240 00 160 S # Transects at Site Š 2 42 15 8 Q **Transect and Point Layout** 1.78 M Location 5 **E**2 ***** 3 . E 9 Minimum Width (m.) 1.0 - 1.491.5-3.0 > 3.0 × 1.0 Bank Particle Median Otameters (mm.) Bank Right Point Number Left ~ က 4 S 9

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Name:	, –		am Stream Code: (Unique Code):			Site Code:14 W - RIA	H137-(Year: 2009	Sample #:)le #:	Date: 2.209 /c	AWDD):	"	Transact # 6	ð	121	
Transect and Point Layout	olnt Layout								L			ſ	Active	Active Channel	-		6
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		Measur	Measure depth and hydraulic head to	Partic	rticle Sizes (mm.)	Cover	g(r 3	gg u	- 	a	<u> </u>	Aquatic V	Aquatic Vegetation Types Present	ypes Prese	E	Vegetation	_
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	^ 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm)		<u> </u>	None	Cultivated	Meadow	Scrubland	_	Forest 2	1 = Embedded Cover 2 = Unembedded Cover	ad Cover dded Cove	k
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Stream Name:			(Unique Code):			Code: 14 L√-/14	W-111		2009	Semple #:	38	YY/MIN/D	Date: 2009 105 / 17. (YYYY/MIM/DD):	Trensect #	74	15	<u> </u>
ransect and	ransact and Point Layout													Active Cha			
Use this tab and points r	Jee this table to determine the number of transects and points required, given the minimum stream width.	the number of te minimum s	f transects tream width.		Calculate t site length	Calculate the transect spacing from the site length and number of transects:	spacing or of trans	from the sects:	!	(Messu 2.00	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	Codes les betwee 700 mm.)		Width (W) (m.) Point		J. 3) }
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Number	(m)	(mm.)	Head (mm.)	.) Point	In Ring	\neg		ъ	\dashv	+	<u>د</u>	₹	SS	MC WC	S S	π ¥	AL = Non-
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	× 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm)	(out of 16)	(16)	None	Cuttivated	-	Meadow S	Scrubland	Forest	T	1 = Embedded Cover 2 = Unembedded Cover	d Cover
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Name:			Stream Code: (Unique Code):			Site $Code: 1 \neq W - 11 \mid \mathcal{A}$	J-111A	70ar:	3.	Sample #:	38	FINIMOD !	Date: 2009/05/12.	Transect #	8 0	3	
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> 3.0	10		9			ľ			<u> </u>	Consolidated Clay	ed Clay	0.011	T	spacing, s		per Transect	
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v 1.0	50		2	Transe	Number of Points/ Transect (N)	٦	Transect Spacing (m.)	cing (m.)	18	Large Boulders Bedrock	dens	1111		Compass Bearing:	286		
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Bark	Bank to to	ape height; If	Bank Angle Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points	enter X in box	only,	Amount of Undercut	# of Vegetated Squares on Benk	stated	Dor	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put $-$ in all others	ation Type he 1 x 2 m	Putxin area. Pu	the box of f - in all of	the thers.	Cover Quality	Cover Quality -99 = Not Measurable 0 = No Cover	
	→ 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(ww.)	(out of 16)	<u>.</u>	None	Cultivated	Meadow	-	Scrubland	Forest	2 * Unem	1 = Embedded Cover 2 = Unembedded Cover	
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Bank Particle Median		Sì	CI	17	17	Comments:									Entered	Maria	W
Otameters (mm.)			. 0	(,,	- \											+	Т

Stream Name:			Stream Code: (Unique Code):			Site Code: 4	14W-11A	2009		Sample #:	ے ت	Date: 2004/05/1/2_ (TYTY/MM/DD):	1/02/1	2- Transect #	# 9 01 15	1,1
ransect and Point Layout	Point Layout													Active Cha		lг
Jse this table and points re	Jee this table to determine the number of transacts and points required, given the minimum stream width	ne number of 9 minimum s	transects tream width.		Calculate site length	Calculate the transect specing from the site length and number of transects:	t spacing t er of transe	from the acts:		(Messu 2.00	Particle Size Codes easure all particles betwe 2.00 mm and 1000 mm.)	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.) Point	- 1	7
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minimu	Jm Width (m.) /.0	1.0	5	Site Length	=	Material	Material Decorposition Class	Size	TT	Spacing (m.) Point Spacing		Z 0.78
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1.5 - 3.0	. 12		2	Numb	Number of Transects	Ň	Site Length (m.)	(m.) 4,	4000	澎		0.05				
1.0 - 1.49	15		က						\prod	Sand		0.10	 	HIST DOINT H	FIRST DOINT IS SYZ FROM THE LEFT DRINK	Dank
v 1.0	50		2	Transect (N)	r of Points/ ct (N)	8	Transact Spacing (m.) \mathcal{Q}_{\cdot}	acing (m.)	25.55	Large Boulders Bedrock	xulders	1001		Compass Bearing:	290	
		Measur	Measure depth and	Partic	cle Sizes	Cover		Types Present	-			Aque	otic Vegeta	Aquatic Vegetation Types Present		Vegetation
		nyarac	nyaraunc nead to nearest 5 mm.		(mm.)	- 1				6 0 9	c		Putxin	Put X in box if present		Types P. = Filamen
Point Number	Location (m.)	Depth (mm.)	Hydrautic Head (mm.)	Point	Maximum In Ring	0, 1, 2)	900	2 c 0		3 C ×) - E	1 A	SS	MC WC	SR TR	tous Algae
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(mm.)		.5	V	7	1)											+

Chang	Channel Morphology Data Forn	pholog	y Data	Form								-			
Stream Name:			Stream Code: (Unique Code):			Site Code: 14\\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Year: 2009	Sample #:		Date: 7284 05 (YYYY/MM/DD):	~ So: So:	7.2 Transect #	10 0/ #x	57
ransect and Point Layout	olnt Layout								L			ſ	Active Ch	-	3.0
Use this table and points req	Use this table to determine the number of transacts and points required, given the minimum stream width.	e number of minimum s	transects tream width.		Calculate site length	Calculate the transect spacing from the site length and number of transects:	spacing from of transact	n the S:	*	Particle Sasure all page 2.00 mm an	Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.)	-	;
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Bank	Bank to to	ape height; If enter value	Bank Angle Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points	enter X in box ovation points	only.	Amount of Undercut	# of Vegetated Squares on		Dominant dominant ty	Vegetation pe in the 1	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put – in all others	in the bo	c of the if others.	Cover Quality -99 = Not Measurable 0 = No Cover	lity Aeasurable er
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(Jan.)	(out of 16)	None		Cultivated	Meadow	Scrubland	Forest	T	1 = Embedded Cover 2 = Unembedded Cover
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(mm.)		5,.	12	13	Cl									Corrected	

Stream		-	Stream Code:	15		200	4.6			Sample #:	Ž D	Date: 7.009/05/17	12/150		111	_ <
vame:			Unique Code			Code: 1417-114	#1	2	.600	•	<u>3</u>	YY/MM/DÖ	1 1 1	Transact #	11 0 15	4
Transact and Point Layout	odni Layout												֓֞֞֟֓֓֟֟֟֟֟֟֟ ֖֓	ve Channe	Ш	
Use this table and points re	Use this table to determine the number of transacts and points required, given the minimum stream width.	ne number of 9 minimum s	transects tream width.		Calculate (Calculate the transect specing from the site length and number of transects:	t spacing er of trans	from the sects:		Measur 2.00 n	Particle Size Codes easure all particles betwee 2.00 mm and 1000 mm.)	Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.) Point	7'1	
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minimu	mum Width (m.) 1.0	0	1	Site Length	1	Material	Material Incomeditated Clay	Siza	8 2	ng (m.) Spacing	Active Wi	Active Width W (m.)
> 3.0	9		9			Ţ	2	90.00		Consolidated Clay	ed Clay	+	T	Spacing, S		er Transect
1.5 - 3.0	12		5	Numbe	Number of Transects	Ž.	ite Length	Site Length (m.) 40		憲		9.0		:	;	
1.0 - 1.49	15		9			٦ř			$\overline{\parallel}$	Sand		0.10	2	point is Si	First point is S/2 from the left bank	f bank
c 1.0	50		2	Transact (N)) JE	5	ransect S ₁	Transect Spacing (m.)	185	Large Boulders Bedrock	dens	1001		Compass Bearing:	286	
		Measun hydrau	Measure depth and hydraulic head to	Partit	Particle Sizes	Cover		Types Present			-	Aquati	Aquatic Vegetation Types Present	Types Pre	sent	Vegetation Types
Point	Location (m):	Depth	nearest 5 mm. epth Hydraulic	ā	Maximum	Quality (-99,	000		Y - a - Y - a - Y - a - Y - a -	D 80 C X	0		Put X in box if present Put - if not.	not.	2	
-	1,67	44	×		Š	 			H	描			一		+=	-
2	2,00	100	Ø	Š	S	Q										SS = Moss MC = Macro-
n	2.33	20	8	Ÿ	Vi	Ø									图	WC = Water-
4																TR Terras-
so.		······································														
9																
Bank	Bank to t	ape height; If e enter values	Bank to tape height; if a height is >2m enter X in else enter values in proper observation poi	Bank Angle to tape height; if a height is >2m enter X in box else enter values in proper observation points	only.	Amount of Undercut	—	# of Vegetated Squares on	O do	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put – in all others.	tation Typi	B: Put X in	the box of the in all other		Cover Quality -99 = Not Measurable 0 = No Cover	ty leasurable er
	→ 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(HE)		16)	None	Cultivated	Weadow	 	Scrubland	Forest	1 = Embedo	1 * Embedded Cover 2 * Unembedded Cover
Left	-	190	200	125	Ø	×	\sim)_		Image: section of the					Enter dat initials w	Enter dates and initials when data
Right		081	100	09	Ø	×	17	7								Date Int.
Bank Particle Median		1'S	ζ.	2	CI	Comments	₂								Enterned	4
(mm.)		S		()												+

Name:		<u> </u>	Stream Code: (Unique Code):	1		Code: 14 W ~ 11 №	WII -	2	000	Sample #:	*	38	Date: 2009 / 0 mm//MM/DD);	21/50/	Transect #	d# 12	2 of 15)_1
ransect and	ransect and Point Layout									L				r	Active Ch	Bruel		2.4
Use this table and points re	Jee this table to determine the number of transacts and points required, given the minimum stream width.	he number of ne minimum st	transects tream width.		Calculate site length	Calculate the transect spacing from the site length and number of transects:	spacing r of trans	from the sects:		₹	Partici leasure a 2.00 mm	Particle Size Codes easure all particles betwe 2.00 mm and 1000 mm.)	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.) Point	(æ)	S .	
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minimu	Minimum Width (m.) 1. 0	0 :	1	Site Length		₹ E	Material Material	i i	Size		Spacing (m.) Point Spacing		Active Width W (m.)	C. 2.2 (m) W dm.)
> 3.0	우		9				(vedilla)		1	[8	Consolidated Clay	S S	0.01	_	Spacing, S	1	Points per	Transect
1.5 - 3.0	12		S.	ME N	Number of Transacts 15		Site Length (m.)	h (m.)	۵	툸			0.05	_			;	
1.0 - 1.49	15		က							Sand	P		0.10	 	rinst point is S/2 from the left bank	is S/2 fro	m the left	bank
< 1.0	20		2	Transe	Number of Points/ Transect (N)	හ 1	ansect S	Transect Spacing (m.) 2 . 65	12.85	Bed Lay	Large Boulders Bedrock	و	1111		Compass Bearing:	C	88	
		Messure	Measure depth and hydraulic head to	Partic	article Sizes (mm.)	Cover	 - 	Types Present	# "			_	Aquat	ic Vegeta	Aquatic Vegetation Types Present	s Present		Vegetation Types
Point	Location	Depth	Hydraudic	3	Maximum	Quality (-89,	000	200 200 700	- a -		0-=	ū	-	2	Put - If not.		1	FL = Filamen- tous Agee
-	1.72	97	×	1 9	is	1-		垣	惜	H				+=	+	+	+=	AL = Non- Flamen- tous
2	2.15	30	ø	is	Š	×	Ц		捕	H	H			盲	믐	X		SS = Moss MC = Macro-
3	2.58	20	ళ	15	.1.5	38	Щ	重	耑	H	H				区区			WC = Water-
4									H						H			TR = Terres- trial
2										님					片			
ø									H	H								
Bank	Bank to els	tape height; if	Bank Angle a height is >2rr s in proper obse	Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points		Amount of Undercut	Squar Back	# of Vegetated Squares on Bank	- 8	Dominan minant ty	t Vegetal	ion Type 1 x 2 m.	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others.	the box (others.	8 8	Cover Quatity -99 = Not Messurable 0 = No Cover	Besurable
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mar)	(out	(out of 16)	None	\vdash	Cultivated	Meadow	\vdash	Scrubland	Forest		Embedde Unambed	1 = Embedded Cover 2 = Unembedded Cover
Left		210	170	120	Ø	×	157	3			X						riter date	Enter dates and initials when data
Right		95.1	120	130	R	×	4.1-	7			K					<u> </u>	niered in	Computer Date Inft.
Bank Partide Median		5,	2	13	10	Comments											Entered	1000
Otameters (mm.)	-	>	V	1)	- 1											T	Adilla	+

Record these values only on the first transact Spa Langth (m): 4.0 Transact Spa Obstructions to Flow Tramped Banks Obstructions Wood Deflectors (if none present, Inorganic Deflectors check "None Present Otherwise Check the applicable				Stream Code (Unique Code)	Code)				Site Code:	Site Code: 14 W~ 11 A	Z Z	Year	50	Sar	Sample #:	2009	Date (YYYY/MIM/DD)	AMADD)	- 2	Transact #	72	
se 9	t only on the I	irst transe ansect Si	first transect Transect Spacing (m):	63	Da	<u> </u>	Crew:	SP 2	n	N					Š	Comments						
Flow from tresent, heck None tresent tresent t	X None Present	<u> </u>		CHARG	APP!	AMIXOS	TES BA	DISCHARGE APPROXIMATES BASEFI OW	VES	F	_		Cha	Channel Profile (continued)	e (conf	(penu		Ė	•	•		
f none resent, heck None resent resent heck the pplicable	Trampled Banks	anks							2		_	H	L	L	×	Velocity Measurements	Sureme	T _E	• • • • • • • • • • • •		•	
nesent, heck vone resent, vone resent interwise neck the pplicable	Wood Deflectors	ctors	4		2000	ਠ	Channel Profile	roffle					_	_			r	T				_
resent therwise seck the opticable	Inorganic Dafactors Armouring	effectors	Feature		Horiz Foo:	Vert Ht Volume to (mm)	Tape (mm)	Vert HP This column is for recording date when the infinitum width depth ratio indicator is used Tape and the bankful level is NOT identified in the final field.	for recordi depth ratio i level la NO	ng dala whe ndicator is u Tidentified i	2 3 ≥	Horiz. Loc.				Obser- vation Depth	Tums	clfy clfy				
policable	Inlets	1	Left BFD		-	1	-	Velocity	Meseur	ements	# 4 St	-	E	É	Ē	Ē	<u> </u>				•	
	Lourers (List 1 ypes)	(sadk L		١.	_	?	-	(Recommended depth ratio from stream bottom is 0.4)	ad depth re oftom is 0.	to from stre.		+					Ì	T				
) ('See			Y Y	Aight Bro	2.0	90	\exists	0,	Obser	*	- -	\exists	_									
				Max Channel Depth 2	2.15	345	_	Depth (mm)	de (mil	Turns/	aty (ada)	-	/						Transect and Point Layout	oint Layout		-
indicators		Left R Bank B	Right Left Active Bank Channel	7	1.5	330	+	+	+	-	2				L				Use this table to provide guidance for selecting how	o provide lecting how		
	nflection		E E	3	+	270	Ħ	+	H		8	+	_				ľ	T :	many points per transect to measure, given the minimum	r transact to the minima	. E	
Level Ba	Bank Material		188 N		6.	186	Н				2	-					T		Minimum	Low	- December	
ΙĔĞ	Top of Point Bar			2	-	300	H	H	\parallel	H	2	-	_		_			<u> </u>	Width (m.)	variance		
خل	/egetation			8	-	洛	1		1	\parallel	23	_						Τ		or depth	or depth	
123	Minimum Width: Depth			4	1		H				24	_								8 + 1 every 2	10 + 1 every 1	È.
ΙĞ	Others	\dagger	T	s,	/		100			7	52				_			_	× 3.0	metre	metre	53
\neg	(List Types)	+	 	1	-	1		f	1	-	86	+	1	-	1		T	\dagger	1.0 - 1.49	9 60	0	
Entrenchment				,	1	1	1	+	1		1	+	4	4	1		1	٦	< 1.0	2	4	_
Entrenchment Height = 2 X	t=2 X			1			/		_		12							[∢]	Active Width (W) (m.)	/) (m.) 3	4	
Maximum Channel Depth	naper.		Ĺ			-	7				88	_						T		Active Width (W) (m.)	_	
Entrenchment Width = Horizontal distance from the location of the Maximum Charmal Denth to the	= Horizontal			6							82	-	_					1	Spacing = - (S)(m.)	# Points per transect (N)	~	
bank at the Entrenchment Height	ment Height			10	_			<			8							 	Point Spacing (S) (m.)	S) (m.)	9 0	
Record either the Left and Right	ft and Right			F							9								riist point is 3/2 horn are ven bank		Ĕ	
ths, or the Total \	Vidth			12					1		32	-	L					₩ ö	Enter dates and hitials when data entered in computer	I britials who computer	£	
Left Entrenctment Width (m):	Vidth (m):	2	Ĺ	5			7		1		33	_	_					Т		Date	重	
Right Entrenchment Width (m):	Width (m):	Ĩ	L	-			-			7	1 8		-		L		T		Entered	50/2		
Total Entrenchment Width (m):	Vidth (m):	241	Ľ	15			+	-	\vdash	-	38	-	_	_			T	1	Varience			

0. UX 102/1 (S) Agae
AL = NonThe NonTous
Agae
SS = Mass
MC = MacroMydes
WC = Water
G = Gress
GR = Gress
TR = TerresTrial
Plants P. = Filamen 풀 0 = No Cover 1 = Embedded Cover 2 = Unembedded Cover Enter dates and initials when data entered in computer Vegetation Types Cover Quality -99 = Not Measurable Date, First point is S/2 from the left bank 15/20 0.53 <u>ي</u> ደ Соттество Verified Entered 286 Date: 2009/p5/12 Transect # 13 S. M Aquatic Vegetation Types Present Active Channel Width (W) (m.) Put X in box if present Put – if not. S **X** Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1×2 m. area. Put – in all others. Š Point X Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.01 1001 0.05 Size (물) Meadow 겁 Unconsolidated Clay Consolidated Clay Large Boulders Bedrock 0--Cuttivated 1 Sample #: Sand 00 s c × 툸 None Transect Spacing (m.) 2, 85 (Number of Transacts - 1) Year: 2009 F - m + Site Length (m.) ψ Types Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: R 0 # U # U 0 Site Code: 14W-11M ₹00₽ Quality (-99, 0, 1, 2) Amount of Undercut (mm.) Comments: Cover 7 N ø X X Minimum Width (m.) 1. Number of Transacts (7 Maximum In Ring Particle Sizes (mm.) Number of Points/ Transact (N) 1500 mm. V) 5 幺 X 0 Bank to tape height; If a height is >2m enter X in box only. else enter values in proper observation points 130 Point Channel Morphology Data Form ~ 750 mm. 120 i Ń J J Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Use this table to determine the number of transacts and points required, given the minimum stream width. Points / Transect (N) Bank Angle 170 120 250 mm. Ø 10 Ø 9 S ന N J V Depth (mm.) 20 3 О ШШ. 30 250 1 V # Transects 15 2 4 8 2.83 at Site 77 30 ransect and Point Layout Location (m.) ¥.2 a 1.0 - 1.49Minimum Width (m.) 1.5 - 3.0 < 1.0 Bank Particle Median Diameters (mm.) × 3.0 Bank Right Point Number Left 8 ന 4 S 9

6.3 Agae
AL = NonPous
NonPous
Agae
SS = Moss
MC = Macrophytes
WC = Water
Cress
GR = Gress
TR = TerresPital P. = Filamen-풀 Cover Quality
-99 = Not Measurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Enter dates and initials when data entered in computer Vegetation Types Spacing (m.)

Point Spacing Active Width W (m.)

Spacing, S = # Points per Transact Date First point is S/2 from the left bank Transact # 14 of 15 꿈 0.6 Corrected Entered Verified Active Channel Width (W) (m.) 1.5 281 X X K g Aquatic Vegetation Types Present Put X in box if present Put – if not. S × Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. Š Point X Date: 2004 | 05 / 12 | Scrubland SS Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.011 0.05 1001 Sign 0.0 0.10 1111 ¥ Meadow ႕ Unconsolidated Clay Consolidated Clay Large Boulders Bedrock 0--Cultivated \boxtimes Material Sample #: Sand 00 al c 74 ぎ None (Number of Transacts - 1) Transect Spacing (m.) 🛭 . 🐒 F - m -C O O 不 2 Types Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 2 C Z Site Length (m.) Sile Code: 14 W- 14 0 و **₹00**0 1 trex Quality (-99, 0, 1, 2) Amount of Undercut (mm.) **BK** Cover ST Comments Ø X Minimum Width (m.) 🚶 🗅 Number of Transacts / ≤ M Maximum In Ring v Number of Points/ Particle Sizes 1500 mm. J 0 (mm.) 0 Transact (N) Bank to tape height; If a height is >2m enter X in box only, else enter values in proper observation points J S J Point 750 mm. Channel Morphology Data Form Ś 10 90 3 5 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Use this table to determine the number of transects and points required, given the minimum stream width. Points / Transect (N) Bank Angle 250 mm. 8 Ø 9 186 S m ~ 190 C 9 7 9 021 Depth (mm.) 7 0 mm. 01E 250 J √-# Transects at Site 2 12 15 8 ransect and Point Layout Location (m.) **v** 2m J ~ i ~ Minimum Width (m.) 1.5 - 3.01.0 - 1.49Bank Particle Median Dismeters (mm.) < 1.0 > 3.0 Bank Point Number Right 1 8 က 4 N) ø

Stream Name:			Stream Code: (Unique Code):			Site Code: 1년 씨 - 11유	J-114	200	. 6	Sample #:	اعة	Date: 2009/ (YYYY/MIM/DD):	21/50/150 1000:	# toesusut #	a# 18	of 15	
ransect and	ransect and Point Layout									[ſ	Active Ch			
Use this table and points re	Use this table to determine the number of transects and points required, given the minimum stream width.	the number of	of transects stream width.		Calculate t	Calculate the transect spacing from the site length and number of transects:	spacing fr of transe	rom the scts:		(Measu 2.00	Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)	Codes cles betw 000 mm.)	- S	Width (W) (m.) Point	(m.)	.6 3	, [
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minimu	um Width (m.) 1.0	1.0	S Paderial	Site Length (Number of Transacts - 1)	15	Material	Material Unconsolidated Clay	+	Size	Spacing (m.) Point Spacing		Active Width W (m.)	(m.)
> 3.0	10	·	9							Consolid	Consolidated Clay	+	Ę	opacing, o		# Points per Transect	ransect
1.5 - 3.0	12		S	Numbe	Number of Transacts	1/2/	Site Length (m.) 🕌	〇七 (m)		蒙		0.05	g		ç		
1.0 - 1.49	9 15		က						1	Sand		0.10	ا وا	riest point	FIRST point is S/Z from the left bank	the left by	¥
< 1.0	20		2	Transect (N)	Transact (N)		ansect Spi	Transect Spacing (m.) Z	200	Large Boulders Bedrock	uiders	1111	101	Compass Bearing:	2	288	
		Measu	Measure depth and hydraulic head to	Parti	de Sizes	Cover	<u>\$</u>	Types Present				Aqu	atic Vege	Aquatic Vegetation Types Present	s Present	> 6	Vegetation
		Jear	nearest 5 mm.		(mm.)	Quality	≩ ∘	K 0 3		6 0 es	0		Put X In	Put X in box if present Put – if not.	ent	<u>- LC</u>	lypes FL = Filamen
Point Number	Location (m.)	Depth (mm.)	Hydraulic Head (mm.)	Pola	Maximum In Ring	0, 1, 2)		# ~ # ~	n n	E Z	_ <u>_</u>	7	SS	MC WC	S S S	T.	Age 1
-	ナーニ	40	Ø	\$;	.'5	2									X		Filamentous
2	2.1	80	R	~	\$:	8		置	H	.()	H				N	φ <u>3</u>	SS = Mass MC = Macro-
e	2,5	9	ð	\$	4	Ø								[<u>]</u>	\square		WC = Weler- cress
4			1														TR = Terres- trial
S.																	2
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Bank	Bank to	tape height; I se enter value	Bank Angle Bank to tape height; if a height is >2m enter X in box only, else anter values in proper observation points	n enter X in box ervation points	only.	Amount of Undercut	# of Vey Squares	# of Vegetated Squares on Rank	do Do	Dominant Vegetation Type: Put X in the box of the dominant type in the 1×2 m. area. Put – in all others.	etation Ty	pe: Put X m. area.	In the box Put - in a	of the	-99 = 0	Cover Quality -99 = Not Measurable 0 = No Cover	urable
	≥ 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm)	(ont of		None	Cultivated	-	Meadow	Scrubland	Forest	1	1 = Embedded Cover 2 = Unembedded Cover	Cover od Cover
Left		230	230	190	۵	+	ठ			X					E E	Enter dates and initials when data	ind data
Right		50	170	40	0	+	1	rt		X					10.90	entered in computer	Date Inft.
Bank Particle Median		1,51	5;	5;	5	Comments									Ne Ent	Enterned S	105
(mm.)	~	, ,			7										<u> </u>	Comported	+

Ontario Be	nthos Biom	onitoring Netv	vork Field S	heet: STREAMS	
	Stream ne		TOTAL TOTAL O	NOC. OTTLANO	
Date: May 17 / 2009 Time 7 2m		4W-16			Y- v- Y
Agency: ACCECA		centroid of 3 replicates	theth one or UTM		
Agency: Aurera Investigators: JS 25R		and of 5 repositions	, cascong or o ran	Elevation (m asi):	
Water Quality				Datum/zona:	
Water Temperature (°C): \ 4	Conductivi	ty (uS/cm): \\	2.1		
DO (mg/l): 13.8 - 14.5	Allenia de	ty (us/cin): \ \	54	pH: \$,34	•
1		mohas CaCOal:	-131-	05	
Site Description and Map			1	1 1 1	
Draw a map of the site (with fandmarks) and indicate a	reas sampled, Att	adt photoligaph (op	tional)	J. K - Com	reterubble.
Show north arrow.		A STATE	-AMA	~)1 /	
4		A.	Can Ch		
(1	SUG	1	
	R)	/	12		
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		The second second	_		
		į			3 lots of ola
		/	ζ.		- lots of algae
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	~	/-	2/3//		
(/	11/2		
	() -	/	11		
	/		1 /		P)
	/		LON	47	
	/	1		1	m wide
	1	4	WA.	/	
Senthos Collection Method (circle one):		Gear Type (circle	one)		
• Traveling Kick & Sweep • Grab So	emple	D-net	• Ponar	Other (apecity):	
Other (specify):		• EKman	Rock Basi		
		Mesh Size: 500			
Sampling distance	Time	Max.	Wetted	Max. Hydraulic	# Grabs pooled
Sub-samples covered (m)	(min.)	Depth (m)	Width (m)		
Sample 1: Riffle (cross-over)		0.21	1.00	Head (mm)	per sample
Sample 2: Pool	3.00	0.31	11.00	X	
***************************************	3.00	0		- ×	
Sample 3: Riffle (cross-over)	300	0.08	10.4	18	

WENT GREAT WAR

								19			
Substrate						Class	Description	1			
	Enter domina	ent substrate cla	as and second dominant class	;		1	Clay (hard	pan)			
	for each sub-	sample	·	·		, 2	Sift (gritty,	< 0.06 mm pa	rticle diamete	r)	
	Sar	nple 1	Sample 2	San	nple 3	3	Sand (grain	ny, 0.06 - 2 m	m)		
Dominant	6	\leq			>	4	Gravel (2 -	65 mm)	1		
	<u> </u>					5	Cobbie (65	- 250 mm)			
2nd		1	1	ļ	. 1	6	Boulder (>	250 mm)			
Dominant		ε.		1	4	7	Bed Rock			-	
	<u> </u>		`	Ĺ		<u> </u>			_		
Substrate N	otes										
Organic Mat	ter-Areal Co	verage			San	ple 1		mple 2		Semp	ole 3
Use 1: Abund	lant, 2: Prese	ent, 3: Absent	Woody Debri	s		7	2		<u> </u>	2	
			Detritis		7		<u> </u>	>		Z_	
Riparlan Veç	etative Con	ımunity						% Сапору	Cover (circle or	e)	
Use: 1 (None), 2 (cultivate	d), 3 (meadow), 4 (scrubland), 5 (forest, r	nainly conifer	ous), 6 (fores	, mainly dec	iduous)				
Zone (dist. Fr	om water's e	Left Bank	Right Bank (facing downst	ream)				0-2	4)	25-49	
1.5-1	10 m	3	3					50-7	4	75-100	
10-3	90 m	Z.						if instrumen	t used, record	l type:	
30-10	00 m	Z									
Aquatic Mac	rophytes an	d Algae (Uso: 1	(Abundant), 2 (Present), 3 (Abse	nt). Circle domina	ant type.						
Macrophytes	Sample 1	Sample 2	Sample 3		Algae		Sample 1	Sample 2	Sample 3		
Emergent	3	3	Z		Floating Alga	8	3	13	3		
Rooted Floati	no 3	3	3		Filaments			1 7	1	•••	
Submergent	2	.3	3		Attached Alg	······································	3	3	3	•••	
Free Floating		3	5		Slimes or Cr.		3	3	5	***	
Stream Size/	Flow						: v		-		
Bank Full Wid			Discharge (m³/s, optional, i	ndicate metho	od):						
River Charac		(circle one)	//	ntermittent	Unknown			***			
- <100	eted to land-us Flow of only	e, habitat, obvio	uus stressors)								
Candidate re	lerence Site	- Minimally Im	pacted? (circle one)	,	Yes (No					
General Com	ments	h e				*					
- veg	161 cm	% S	H_	- 1	1						
- over	Flows	pocket	s along the	e bay	rks						
- inc	sed	chan	ne l								

Blacknose Dace Stickle lonck

Stream Sheet-Pg. 2

ream Name Tributary of Stream Code (Unique Code) Site Code	Year Samp	ole
Stream Code (Unique Code) Stream Code (Unique Code) Stream Code (Unique Code)	2009 1	
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TM oordinates 17	the state of the state of	
orrected Grid (XXX) Easting (XXX,XXX) Northing (X,XXX,XXX) Source of GIS Stream Layer used to correct UTM	coordinate data (e.g. NRVIS	S 2)
TM oordinates 17T 597813 4809146	REMODELY SHOULD	
ource of Coordinates (OBM Map, GPS Unit, Differential GPS) Datum of Coordinate Source: (NAD 27, NAD 83)	WGS 84)	11111
GPS Unit. (This can be found on the legends of maps or in s	et-up of GP3 units)	2011
ownship/Municipality Lot Concession MNR	Watershed	
Oakville 32 25? District Aurora	Code	
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orth on Form road from Dundas Rd. Walk was		-
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Description		
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nain tributary that flows southerly to Dune	das Strept h	<i>J,</i>
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nel Mo	11%	Use this table to determine the number of transects and points required, given the minimum stream width	# Transects at Site	-			2			Location (m.)	2	C .	7.5						\setminus		Bank t	^ 2m				/	
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Spacing, S = # Points per Transec 3 20 970 SOS Date: 2009/05/13 | Transect # 2 Active Channel Width (W) (m.) Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.011 Size 0.01 Unconsolidated Clay Consolidated Clay Material Sample #: (Number of Transacts - 1) 50 Site Length Calculate the transect spacing from the site length and number of transects: Site Code: 14 W-11 Minimum Width (m.) 0 33 Stream Code: (Unique Code): Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. 9 14- wille errep # Transects at Site 9 ransect and Point Layout Minimum Width (m.)

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~		Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)	Material Property Clare	Consolidated Clav	1	Sand	Large Boulders Bedrock		0-5		X L						nt Vegetation Type: P type in the 1 x 2 m. a	Cuttivated Meadow	四中	口口口		
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Bank to tape height; if a height is >2m enter X in box only. Second H Second	
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nel Mo	Name: 14-401/2 (xev 2	Point Layout	Use this table to determine the number of transects and points required, given the minimum stream width.	# Transects							Location (m.)	88'/	2.63							Bank t	^ 2m		/		
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nnel Morphol	Fransect and Point Layout	Jee this table to determine the number of transects and points required, given the minimum stream widi	# Transects	╁	12	9 15	20	Me	Location De	+	1.47	2,27 12			_		Bank to tape heig	> 2m 0 mm.	(10)	152/		
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	Channel Morphology Data Fo	50000	א טמנם			100		,								
Stream Name:			Stream Code: (Unique Code):	2		Site Code: / 4 1 - / 6		Year:	Sample #:	/	Jate: 20 YYYY/IMIN	Date: 2004/05//3	73 Transact #	# 13	32 50	Γ_
Transect and	ransect and Point Layout												Active Ch	Jee L] _
Use this tab and points n	Jee this table to determine the number of transects and points required, given the minimum stream width.	he number of e minimum s	f transects tream width.		Calculate site lengti	the transer and numb	Calculate the transect spacing from the site length and number of transects:	et.	(Mes	Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)	ze Codes ticles betv 1000 mm	- E	Width (W) (m.) (Point	(m.)	0	
Minimum Width (m.)	# Transects) at Site		Points / Transect (N)	Minim	Minimum Width (m.)	R	(Number of Transacts - 1)	ength	Meterial	Material Unconsolidated Clav	-	Size	Spacing (m.) Point Spacing	, s	Active Width W (m.)	N (m.)
> 3.0	10		9			ľ			S	Consolidated Clay	╀	0.011	spacing, s		wints per Tr	ransect
1.5 - 3.0	0 12		5	A S	Number of Transacts	3	Site Length (m.)	F	#S		\dagger	90.0	i	<i>ر</i>	0,75	
1.0 - 1.49	15		က			55			Sand		0	0.10	First point is S/2 from the left bank	s S/2 from	the left ba	ž
× 1.0	20		2	Transi	Number of Points/ Transect (N)	7	Transact Spacing (m.) 2 . (g (m.) 2, l	Large Bo Bedrock	Large Boulders Bedrock		1001	Compass Bearing:	22	7	
		Measun	Measure depth and hydrautic head to	Part	Particle Sizes	Cover	Type P	resent		П	¥	uatic Vege	Aquatic Vegetation Types Present	Present	3,	Vegetation
		neare	nearest 5 mm.		(mm.)	T	≥ ∘	т- "С	D 8	0		PutX	Put X in box if present Put – if not.	Ĕ	<u> </u>	Types PL = Filamen
Point Number	Location (m.)	Depth (mm.)	Hydrautic Head (mm.)	Point	Maximum In Ring	0, 1, 2)	_	a - a	8 V	- =	FL AL		MC WC	S 8	7.1	Agae
1	1.65	110	9	Š	90	0			4	中	区区					Filamen- tous
2	1.95	20	ф	ű	60	ф		H	#	車	M	中	<u>Ш</u>	M	<u></u>	SS = Mass
6					7								#	4	Ž [WC = Water- cress
1					-	-					1]] [] [GR = Grass TR = Terres-
										f	+		₽ Þ	1	J	trial Plants
Vo.				No. of Concession, Name of Street, or other Designation, Name of Street, Original Property and Name of Street,	1		4	#	4	Ī	#					
9											出	中	旹		Τφ	
	Bank to	tape height; If	Bank to tape height: If a height is >2m enter X in box only,	enter X in bo	x only.	Amount of	# of Vegetated	8	ominant V	Dominant Vegetation Type: Put X in the box of the dominant Ane in the 1 v 2 m sees. But in all others	ype: Put	(in the bo	cof the	O 60	Cover Quality -99 = Not Measurable	urable
X E E E		se enter value	else enter values in proper observation points	rvation point	- 1	Undercut (mm.)							i Cilia	Ž W	0 ≈ No Cover 1 ≈ Embedded (Cover
	, 2m	O mm.	250 mm.	750 mm.	1500 mm.		(91 10 100)	None		Cultivated	Meadow	Scrubland	Forest		2 * Unembedded Cover	d Cover
#5		480	450	430	ф	0	7	口	+			X	中	ᇤ	Enter dates and initials when data	nd data
Right		570	270	150	0	9	9	中		 	×	中	P	ਵੇਂ r	entered in computer Date	Computer Date Inft.
Bank Particle Median		5a	ÜC	Ş	771	Comments:					13.				Entered	12
(mm.)		S:	777	4C	7n					ř				<u>§</u>	Corrected	-

Diagnostic Indicators of Channel Stability

				Chan	200		•		9			N	Į,		Comple 4	\$	4	3				*
Name:				(Uniqu	(Unique Code)	<u>.</u>		_	Š	Code: 42 - 16	9		0	9	3	<u>.</u>	2	2009/05/13	5		of 70	
Record these values only on the first transect Ste Length (m): $\bigoplus_{C,O}$ Transect Spa	ues only on the	ne first tr Transe	e first transect Transect Spacing (m):	1 1	2.1		Crew:	•	75	, SR	R					S	Comments	-	'			
tlons	None Present	esent		DISCHA	RGEA	PPROXII	MATES	DISCHARGE APPROXIMATES BASEFLOW YES	W YES	X				Channe	Channel Profile (continued)	(contir	(penu				•	
to Flow	Trampled Banks	d Bank							2							Veto	city Mea	Velocity Measurements	suts	***************	•	
(if name	Wood Deflectors	effector	9				Channe	Channel Profile											T			
present, check	Inorganic Deflectors Armouring	c Defiler	ctors	Feature	Horiz. Loc.	Vert Ht to Benkfull	Vert Hr to Tape	This columinimum w	* This column is for recording date when the minimum width:depth ratio indicator is used and the bankfull tavel is NOT identified in the	ording data tio indicator NOT identif			Horiz.	Vert Ht to Bank-	Vert Hit	Water	Obser- vation	Vek	\delo			
Present	Infets				Ê	(EEE)	ŒE)	1960			T	ment	Ê	(mm)	E E	mm.	Œ		(m/s)	•		
Otherwise check the	Others (List Types)	List Typ	(59	Left BFD	9.	Φ		Yek Vek	Velocity Measurements	Suremen.	9	91					/		Ċ	******		•
applicable types.)				Right BFD	3.2	\$			bottom is 0.4) Obser-	\$ 0.4)		12									•	
				Max Channel Depth	ત	~		Verter (Depth (Tums/	\$ ₹ €	82								Transact and Point Layout	oint Layout	
Indicators		Left Bank	Right Bank		15	430		/			1	61								Use this table to provide guidance for selecting how	ecting how	
Locate Rankfull	Inflection Point	Ø	N Z	Right Active Channel	7.38	0198						2								measure, given the minimum width of the stream.	the minimu am.	E
Level	Bank Material			Measurement 1	7.	250						21								Minimum	Low	
	Top of Point Bar			2	2.8	370						22			\geq					(m.) @ 32	in verter ce	in velocity
	Vegetation	Ż	N N	e								23			\leq					THE PER	or depth	or depth
	Minimum Width:Depth			4		4						24								3	8 + 1 every 2	
	Others (List Types)	-		s,			Δ]			25								> 3.0 1.5 - 3.0	metre 5	metre 8
Entrenchment		-	-	9				_/	\			56								1.0 - 1.49	e (8
Entrenchment Height = 2 X	ight = 2 X			7								27								ĺš	4	1
Maximum Channel Depth	al Depth			80	<u> </u>							28								1	Active Width (W) (m.)	-
Entrenchment Width ≈ Horizontal distance from the location of the Maximum Channel Deoth to the	dth = Horizon location of the	.		a								53									# Points per transact (N)	, _
bank at the Entrenchment Height	nchment Heig	Ē		10								30						_	- 39	Point Spacing (S) (m.)	3) (m.)	5
Record either the Left and Right	Left and Righ	*		#								31								bank		40
wams, or the lot	at width			12		\					/	32								cate cates and trivials when data entered in computer	omputer	s.
Left Entrenchment Width (m):	nt Width (m):	7	لم	13								33									Date	重
Right Entrenchment Width (m):	ent Width (m)	رآ	8	7								8	V)						112	Entered		
Total Entrenchment Width (m):	nt Width (m):			55								35								Corrected		
												1	1					1]			

Substream Code: Stream Code: $Code: \mu_{W} - \mu_{W} - \mu_{W} = 0$ Sample #: $Code: \mu_{W} - \mu_{W} = 0$ Sample #: $Code: \mu_{W} = 0$ Sample #: Cod	Active Channel	Calculate the transect spacing from the site length and number of transects: (Measure all particles between site length and number of transects: 2.00 mm and 1000 mm.)		Consolidated Clay 0.011 Specing, S	Number of Transacts 2.0 Site Length (m.) & 40	Number of Boldster	2 Transect (N) Transect Specing (m.) 2,1 Bedrock 1111 Bearing: 2 40	Types Present Aquatic Ver	Hydraulic Maximum (-89, o n k t c k h FL AL SS MC WC GR TR		O O O O O O O O O O O O O O O O O O O	- MC = Walter				Bank Angle Bank to tape height; if a height is >2m enter X in box only. Bank to tape height; if a height is >2m enter X in box only. Amount of gueras on dominant type in the 1 x 2 m. area. Put X in the box of the squares on dominant type in the 1 x 2 m. area. Put - in all others. Cover Quality Gover Quality 1.99 = Not Messurable Cover Quality 1.90 = Not Cover	1500 mm.	0 240 330 & & 9 Head States and Initials when data	410 230 8 170 3 B-B \ 190	Ly C Ly Comments:	
EL.			t (N)	9	Number of Transacts	Number of Doings	Transact (N)	Particle Sizes (mm.)	Maximum Point in Ring	77	0					X in box only.	1500 mm.	330 6	230 0	٦٢ ٦٢ مر مرد	
Channel Morphology Data Fol	Fransect and Point Layout	Use this table to determine the number of transects and points required, given the minimum stream width.	Minimum #Transects Poi Width (m.) at Site Tra	> 3.0 10		1.0 – 1.49 15	<1.0 20	Measure hydraulit nearesi	Point Location Depth Number (m.) (mm.)	1 ot 1	2 210 170	3	4	9	9	Bank to tape height; if a else enter values t	> 2m 0 mm.	1005 \ net	Rught 1290	Bank Particle Median	

6]_			Transect		bank		Vegetation	Types FL = Filamen- thus	Algae - Mag	Flamen- flamen- fous	SS = Moss MC = Macro-	WC = Water- cress	GR = Grass	Tin # lerreds Trial			/	ısurable	d Cover ded Cover	and n data	Computer Date Init.	12 A 9/3	
3 2 2		- 11	ı		4:0	First point is S/2 from the left bank	237	esent		GR TR	口区	区口口	[q] [] [Cover Quality -99 = Not Measurable 0 = No Cover	1 = Embedded Cover 2 = Unembedded Cover	Enter dates and initials when data	entered in computer	Entered	Corrected
Transect #	Active Chann	Width (W) (m.)	Spacing (m.)	Spacing, S		First point is S	Compass Bearing:	Aquatic Vegetation Types Present	Put X in box if present Put – if not.	MC WC	中中	中中]	自自				x of the alf others.	d Forest	中	中		
Date: 200 965		codes as between 30 mm.)	Size	10.01	0.05	0.10	1111	Aquatic Vege	PutX	AL SS	中中	中山							s: Put X in the bo	low Scrubland	中	口口		
		Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)	Material	Unconsolidated Clay	Consolicated Clay	P	Large Boulders Bedrock		0-		中中	⊠				4			Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put $-$ in all others.	Cultivated Meadow				
Sample #:		£	Matc			Sand			22 o) ×									Dominant dominant ty	None			The Three	
60 Jeen 7)		cing from the transacts:	Site Length	(Number of Transacts - 1)	Site Length (m.) 40	2	Transect Spacing (m.) 2./	Types Present	X 0 3	g 2	讲								# of Vegetated Squares on	out of 16)	_	13	رق کر	
Site Code: - (-)		Calculate the transect spacing from the site length and number of transects:	ς. ζ.	7.7	7.0	==	2 Transe	Cover	- ő	0, 1, 2)	4	6		1					Amount of S		0.8	9	Comments:	
		Calculate site length	14/144	MILITIALITY ANDRES (III.)	Number of Transects		Number of Points/ Transect (N)	Particle Sizes	(mm.)	Maximum In Ring	80	80							x only,	1500 mm.	Ф	Ф	m	24
Form					Numb		Trans.	Part		.) Point	NK.	8							n enter X in bo	750 mm.	69	150	uc	3
Channel Morphology Data F		f transects stream width.	Points /	ransect (N)	S.	က	2	Measure depth and	8 1	Head (mm.)	9	P				77	-		Bank Angle Bank to tape height; if a height is >2m enter X in box only, else enter velues in omore observation points	250 mm.	150	290	つか	27
rpholog		the number of		+	2	2		Measu	near near	(mm.)	(110	130							tape height; I	0 mm.	230	420	ac	200
nel Moi	oint Layout	Use this table to determine the number of transects and points required, given the minimum stream width.	# Transects	en Sire	12	15	20		:	(m.)	1,64	167						The second second	Bank to	, 2m			/	
Chani Stream Name:	Transact and Point Layout	Use this table and points rec	Minimum	ween (m.)	1.5 - 3.0	1.0 1.49	× 1.0		i	Number	-	8	ю		4	ιn	ď		Bank	1	Left	Right	Bank Particle Median	(aa.)

2	8	6	0	CALLO WITH WITH	# Points per Transect	0.24	of bank		Vegetation	Types PL = Filamen	\overline{T}	<u>.</u>	SS = Moss MC = Macro-	WC = Water	TR = Terres				ity leasurable er	1 = Embedded Cover 2 = Unembedded Cover	Enter dates and initials when data	entered in computer Date Intr.	Ap 89/9	
2	2	(m.) 0.95			H	Ò	First point is S/2 from the left bank	230	Present	ŧ	GR	×	区	里] [L] [Cover Quality -99 = Not Messurable 0 = No Cover	1 = Embed 2 = Unemb	Enter dal		Entered	Corrected
	//S Transect #	Active Channel Width (W) (m.)	Point	Spacing (m.)	Spacing, S	i	First point is	Compass Bearing:	Aquatic Vegetation Types Present	Put X in box if present Put – if not	MC WC	中							xox of the n all others.	ind Forest	中	里		
Date: 2009/	, and a second	Codes les behasen	000 mm.)	Н	0.01	90.0	0.10	1001	Aquatic Ve	Pa	4	Ø	U X X						xe: Put X in the t m. area. Put – in	Meadow Scrubland	山 図			
		Particle Size Codes (Measure all narticles between	2.00 mm and 1000 mm.)	Material	Unconsolidated Clay	ischicated oray	nd	Large Boulders Bedrock			- E								Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put $-$ in all others	Cuttivated Mea	D			
Sample #:							7.			2	# C B C	古図							Dominar dominant	None	4	山		
Year		cha from the	transacts:	Site Length	(Number of Transacts – 1)	Site Length (m.)		Transect Spacing (m.) \mathcal{Z}_{I} (Types Present		0.0			H					# of Vegetated Squares on Bank	(out of 16)	6	5		
Site (L/C)	20	Calculate the transect spacing from the	site length and number of transects:	1		20	₹₽	2 Transe	Cover	Ž Š			Φ					_	20 2	(mm)	Φ	9	Comments:	
		Calculate	site length	Minimum Width (m.) かるり	-	Number of Transects	II	Number of Points/ Transect (N)	Particle Sizes	(mm.)	Maximum In Ring	150	30							1500 mm.	6	0	ac.	M C
Form			-	Minimo		Numb		Number of P	Parti		Point		Sa						n enter X in box ervation points	750 mm.	047	370	UC	UC
Channel Morphology Data Farm Streem Code:		of transacts	stream width.	Points / Transact (N)	9	20	က	2	Measure depth and	nearest 5 mm.	Hydraulic Head (mm.)		Φ					_	Bank Angle Bank to tape height; if a height is >2m enter X in box only, else anter values in proper observation points.	250 mm.	330	240	28	AC
rpholog		the number o	the minimum			12	15	20	Measu	76ar	Depth (mm.)	30	40						o tape height; I	.0 mm.	230	089	S 0	30
nel Mo	Point I avout	Use this table to determine the number of transacts	and points required, given the minimum stream width.	# Transects				24			Location (m.)	1.74	2.22						Bank t	> 2m		/		
Chan Stream	Transact and Point I await	Use this table	and points re	Minimum Width (m)	> 3.0	1.5 - 3.0	1.0 - 1.49	0.1			Point Number	-	2	m	4	5	9		Bank		Left	Right	Bank Particle Median	(mm.)

Chan	nel Mor	pholo	Channel Morphology Data Form	Form			Г	, was	Semple #:	1.450			}	ſ
Name:			(Unique Code):			Code: 1417-16		01	7	33	mmingon; %	M3 Transect #	17 0 20	01
Transect and Point Layout	Point Layout											Active Cham	Н	٦.
Use this table and points re	Use this table to determine the number of transects and points required, given the minimum stream width.	the number of	of transects stream width.		Calculate site length	the transect and numbe	Calculate the transect spacing from the site length and number of transects:	n the	(Meassu	Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.)	odes s between 0 mm.)	Width (W) (m.)	- 11	
Minimum Width (m.)	# Transects at Site	ects	Points / Transect (N)	Minimu	Minimum Width (m.) 0,4	100	Sice	Site Length	Material	2	Sign	Spacing (m.) Point Spacing		W (m.)
> 3.0	9		9				(NUMBER OF	(NUMBer of Transacts – 1)	Consolid	Onconsolidated Clav	0.00	Spacing, S	# Points per Transect	ransect
1.5 – 3.0	12	2	S	Numbe	Number of Transects	S	Site Length (m.)	070	#S		90.0	i	20	
1.0 - 1.49	15	2	3						Sand		0.10	First point is	rinst point is S/2 from the left bank	BUK
< 1.0	20	0	2	Transact (N)	Number of Points/ Transact (N)	2	Transect Spacing (m.) \mathcal{L}_{\cdot}	ng (m.) 2, (Large Boulders Bedrock	xulders	1111	Compass Bearing:	888	
		Measu	Measure depth and hydraulic head to	Partic	Particle Sizes	Cover	Types	Types Present			Aquatic Ve	Aquatic Vegetation Types Present		Vegetation
quivo	Citaco	See Control	ast Bet		(mm.)	Quality	≥ 00		25 m	0-	Pe	Put X In box if present Put – if not.		i ypes PL = Filamen- tous
Number	(m.)	(mm.)	Head (mm.)	.) Point	in Ring	_	D	- *		<u></u>	AL SS	MC WC	GR TR	Algae
-	19.1	65	9	UC	7	9	古			N U				ı
2	18/	90	ф	70	2	6				X	山山			Argae SS = Moss MC = Macro-
m													1	WC = Water- cress
4														GK = Grass TR = Terres- trial
ທ					$\frac{1}{1}$] <u>[</u>			Plants
1						_			Ħ					
•			1				#				Image: Control of the control of the			í
			Bank Angle										Cover Quality	
Bank	Bank to	se enter value	Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points	n enter X in box ervation points	only.	Amount of Undercut	# of Vegetated Squares on Benk		Dominant Veg minant type II	jetation Type. The 1 x 2 m.	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put – in all other	in the box of the Put – in all others.	-99 = Not Measurable 0 = No Cover	urable
	> 2m	O mm.	250 mm.	750 mm.	1500 mm.	(man)	(out of 16)	None	Cuttivated	led Meadow	bw Scrubland	ind Forest	2 = Unembedded Cover	Cover ed Cover
Left		पेन०	350	390	\$	0	7	Щ	Ш	N L	H	4	Enter dates and initials when data	and
Right		340	att	230	b	9	6				Ш		entered in co	computer Date Inft.
Bank Particle Median		ふ	22	٦٢	WC	Comments:	140 140		DAG !	급			Entered	of the
(mm.)		WC	J J	3	77		•						Corrected	+

Char	Channel Morphology Data Form	rpholog	yy Data	Form										
Stream Name:			Stream Code: (Unique Code):	ير		Site Code: 14(A)-16	W-(6) Year:	·	Sample #:	Date: 7	Date: 2009/65/3	3 Transact #	18 of	3
Transect and	ransect and Point Layout											Active Cham	(][
Use this tat and points r	Use this table to determine the number of transects and points required, given the minimum stream width.	the number c he minimum	f transects stream width.		Calculate site lengtt	the transec	Calculate the transect spacing from the site length and number of transects:		(Measure at 2.00 mm	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	stween m.)	Width (W) (m.) Paint	0	٦,
Minimum Width (m.)	# Transects .) at Site		Points / Transect (N)	Minim	Minimum Width (m.) 0,3]	C2.0	Site Length		Meterial	100	ezis Size	Spacing (m.) Point Spacing		ith W (m.)
> 3.0	10	0	9			┰	(reunder or trains	(- eg	Consolidated Clav	Clav	0.01	Spacing, S	1	# Points per Transact
1.5 - 3.0	0 12	2	2	A PA	Number of Transects	2	Site Length (m.) 4	42	#S	 -	90.0		80	8
1.0 - 1.49	15	ं 2	3			ľ			Sand		0.10	First point is	First point is S/2 from the left bank	r bank
< 1.0	20	0	2	Trans	Number of Points/ Transect (N)	7	Transect Spacing (m.) 2 (1,2,4	Large Boulders Bedrock	و	1111	Compass Bearing:	218	
		Measur	Measure depth and hydraulic head to	Part	Particle Sizes	Cover	Type				Aquatic Vege	Aquatic Vegetation Types Present		Vegetation
		near	nearest 5 mm.		(mm.)	Ouality Ouality	≥ ∘	æ o ≅ o			Put X II	Put X In box if present Put - if not.	-	Types FL = Filamen-
Point Number	Location (m.)	Depth (mm.)	Hydrautic Head (mm.)	Point	Maximum In Ring	0, 1, 2)	9	a c c a	C X	4	AL SS	MC WC	GR TR	Agae
-	1,58	4	9	22	01	_	口口	囚囚		Image: Control of the control of the	0	中中	図	Flamen
2	1.74	25	ф	WC	4	7				A			図	SS = Moss
m		1			-	4						中中	4	WC = Water- cress
4						\prod								GR = Grass TR = Terres-
]]]]		Parts
In In		1			+	+				$\overline{\mathbb{P}}$	中市	中中		
9								F				中中		
			Bank Angle											
Bank	Bank tk	tape height; I lse enter value	Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points	n enter X in bo avvation points	x only.	Amount of Undercut	# of Vegetated Squares on	Dor	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others.	lon Type: Pt 1 x 2 m. are	tXinthebo: a. Put – in a	x of the ili others.	Cover Quanty -99 = Not Measurable 0 = No Cover	ly easurable rr
	> 2m	0 тт.	250 mm.	750 mm.	1500 mm.	(mm)		None	Cultivated	Meadow	Scrubland	Forest	1 = Embedded Cover 2 = Unembedded Cover	ed Cover dded Cover
Left		310	CT	90	9	Φ	٩	由	中		中	P	Enter dates and initials when data	as and en data
Right		350	310	340	8	D	8			Ø	中		entered in	entered in computer Date Init.
Bank Particle Median		50	\ \ \ \	WC	7n	Comments							Entered	18 19
Chamelers (mm.)	/	5:	15	5,1	733								Corrected	

Stream Name:	Channel Morphology Data	pholog	Stream Code:	Form		Site Code: Idea - 16		Year:	Semple #:	Date: 203 %	5		61	
Transect and	Transact and Point Layout							,			٧-	The Carte	5	7
Use this tal and points	Jee this table to determine the number of transects and points required, given the minimum stream width	the number or	f transects stream width.	8	Calculate site length	the transect	Calculate the transect specing from the site length and number of transects:	the	(Messure a	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.)	. 0.85	[
Minimum Width (m.)	# Transects		Points / Transect (N)	Minim	Minimum Width (m.) 0, 33	0.30	Site	Site Length	Material Car	100	8 -	Spacing (m.) Point Spacing		h W (m.)
> 3.0	10		9				in appearance)	l = emaecra	Consolidated Clay		Т	Spacing, S) }	Transact
1.5 – 3.0	0 12		S	Numb	Number of Transacts	R	Site Length (m.)	- R	툸	-			0.7	
1.0 – 1.49	15	١	8						Sand		; _	Irst point is S	First point is S/2 from the left bank	Dank
< 1.0	20		2	Trans	Transact (N)	<u>۴</u>	Transect Spading (m.) 2.	ng (m.) 2.4	Large Boulders Bedrock	20	1001	Compass Bearing:	900	
		Measur	Measure depth and hydraulic head to	Part	Particle Sizes	Cover	Types	Types Present			Aquatic Vegetation Types Present	ition Types Pr	esent	Vegetation
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Chamellers (mm.)		Ś.	MC	22	38								Corrected	

Chan	Channel Morphology Data For	pholo	gy Data	Form										
Stream Name:			Stream Code: (Unique Code):			Site Code: 1410-16		Year: 09.	Sample #:	Date: 7	Date: 200 p. Coffs	Transect #	200 20	
Transect and Point Layout	Point Layout											Active Channe	`	_
Use this table and points re	Use this table to determine the number of transacts and points required, given the minimum stream width.	the number (of transects stream width.		Calculate site length	the transect	Calculate the transect specing from the site length and number of transects:	a the	(Messure 2.00 m	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.) Point		
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	Minimum Width (m.)	0.33	Site //	Site Length	Meterial Unconsolidated Clay	ated Clav	8 =	ng (m.) Spacing	- 1 !	(m.)
> 3.0	10	0	9			Ī	D BORNEY	(angere 1)	Consolidated Clay	d Clay	T	Spacing, S	€ **	Brisect
1.5 – 3.0	12	2	S	AE N	Number of Transects	R	Site Length (m.)	9	Sit		90.0		2,23	
1.0 - 1.49	9 15	2	က		7-4-1-03	īF			Send			New Modern	rinst point is 3/2 from the left bank	ž
< 1.0	20		2	Trans	Transact (N)	2 T	Transect Spacing (m.) 2	ng (m.) 2 . l	Large Boulders Bedrock	Supp	1001	Compass Bearing:	047	
		Measu	Measure depth and hydrautic head to	Part	Particle Sizes	Cover	Types	Types Present			Aquatic Veget	Aquatic Vegetation Types Present		Vegetation Types
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Barrik	Bank to	stape height; ise enter value	Bank to tape height; if a height is >2m enter X in box else enter values in proper observation points	n enter X in box only, ervation points	ıx only.	Amount of Undercut	Squares on		dominant yeses and 1 yes. Fut A in the box of the dominant type in the 1×2 m, area. Put – in all other	1 x 2 m. a	ea. Put – in alf others.	yá	-99 = Not Measurable 0 = No Cover	rable
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hed		097	289	001	Φ	\$	ϕ			X	由		Enter dates and initials when data	nd ata
Right		430	3(0	410	09	P	~			M	由	中	entered in comp	nputer te int.
Bank Particle Median		100	069	140) M	Comments:	Od/has	23/23	consete	Ш.	(Lunk		Entered	1
Chameters (mm.)	/	WC	70	Sa	X K					.l	4 4 5		Corrected	

- 22				
	Benthos Biomonitoring Net	work Field Sheet: STRE	AMS	一、為人
Date: May 13 2009	Stream name:			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Time 2.000pm	Site #: 14 W ~ 16	p		(SEE SEE
Agency:	LOCATION: centroid of 3 replicate	s; Let/Long or UTM		
Investigators: SR3 ゴミ	North of Smill	Elevation	(m asi):	
Water Quality	1000	Datu	m/zona:	
Water Temperature (°C): 14.5	Conductivity (uS/cm):	1525	pH: 7.75	
DO (mg/l): 7, 79	Alkatinity (mg/l as CaCO ₃):	TDS 770	0	
Site Description and Map		110		
Draw a map of the site (with tendmerks) and indices Show north arrow.	te areas sampled, Attach photograph (o	ptional)		
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		The second second		
Benthos Collection Method (circle one):	Gear Type (circ	de one)		
Traveling Kick & Sweep • Gral	Sample D-net	• Ponar	Other (specify):	
Other (specify):	• Ekman	Rock Baskets		
		O microfi (or specify)		
Sampling distance	Time Max.		ax. Hydraulic	# Grabs pooled
Sub-comples covered (m)	(min.) Depth (m)		Head (mm)	per sample
Sample 1: Riffle (cross-over)		12,01	1	has senting
10000000000000000000000000000000000000		- F	7-	A PART OF THE PART
Sample 2: Pool	3 0.24	111	8	
Sample 3: Riffle (cross-over)		 	8	71-4

~ Similar substrate / habitat.

Substrate				Class	Description			
		ate class and second dominant class		1	Clay (hard			
	for each sub-sample			2	Silt (gritty,	< 0.06 mm pa	srticle diamete	er)
	Sample 1	Sample 2	Sample 3	3	Sand (grain	ny, 0.06 - 2 m	ım)	
Dominant				4	Gravel (2 -	65 mm)		
	<i></i>			5	Cobbie (65	- 250 mm)		
2nd				6	Boulder (>	250 mm)		
Dominant	~	1 2		7	Bed Rock			
	-			<u> </u>				
Bubstrate N	otes							
Organic Mat	ter-Areai Coverage		San	aple 1	Sa	mple 2		Sample 3
- 100	dant, 2: Present, 3: Al	Diserit Woody Debri			7		1	
		Detritis	7		1			
iparlan Vec	etative Community	·····	<u></u>		·	T	Cover (circle or	m)
-	·	sadow), 4 (scrubland), 5 (forest, n	nainly conflamuo\ & //o	t mainly de-	iduo:=1	A Carropy)
	rom water's et Left Ba	•		ь, пинну овс	natura)	6-2	4	25-49
	10 m 3	3				50-7		75-100
10-3		13				1	nt used, recon	
30-10		12				il aristrumei	u useu, recon	u ιγρ α :
	1 ~3					<u> </u>		
quatic Mac acrophytes	rophytes and Aigae	(Use: 1 (Abundant), 2 (Present), 3 (Absor	t). Circle dominant type.					
	Sample 1 Sample	2 Sample 3	Algae		Sample 1	Sample 2	Sample 3	
nergent			Floating Alga	je	3	<u> </u>		•••
ooted Floati			Filaments	<u>L</u>	3	3		
ubmergent	3 3		Attached Alg	8e	3	7		
ree Floating	3 3		Slimes or Cn	usts	3	3		
tream Size/	Flow							
ank Full Wid	lth (m): 2 00	Discharge (m³/s, optional, ir	ndicate method):					
Iver Charac	tertsation (circle on	e) ? (Perennial In	termittent Unknown					
otes (esp. rela	ated to land-use, habitat	obvious stressors)						
			~					
indidate rei	ference Site - Minima	ally Impacted? (circle one)	Yes	No				
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Stag r	nant, ver	y low Flow						
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orrected Grid (XXX) Easting (XXX,XXX)	Northing (X,XXX		IS Stream Layer used	d to correct UT	M coordina	te data (e.	g. NRVIS	2)
Coordinates 17 T 597509	480915	4						
ource of Coordinates (OBM Map, GPS U	nit, Differential C	GPS) Datum of C	oordinate Source: (N.	AD 27, NAD 8	3, WGS 84)			_
		(This can be	found on the legend	s of maps or in	set-un of G	SP3 units)		
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Dakville			District Aur	ora,	Cod	0		
ccess Route							-	
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or each	landus	e, check off	all boxes which	h apply. B	e sure to					duding na				ontact
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0, 6/08 AR R. = Filamenbous
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-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Spacing (m.) O. 47 Point Spacing Active Width W (m.) Spacing, S = # Points per Transact Date First point is S/2 from the left bank 12 E) Corrected J Verified Entered ซ 718 8 X Aquatic Vegetation Types Present Active Channel Width (W) (m.) Transact # WC Put X in box if present Put – if not. Compass Bearing: Forest Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m area. Put – in all others. MC Date: 1809 | 05 | 13 (YYYY/MWDD): Scrubland SS 0.01 Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.00 1001 0.01 Size ¥ Meadow M Unconsolidated Clay 료 Consolidated Clay Large Boulders 0-5 Cultivated Sample #: Bedrock Material Sand 툸 **≱** ≋ ∪ None (Number of Transacts - 1) Transect Spacing (m.) Z AYear: 2004 F - m -氏 o o ネ Types Present Site Length (m.) 40 Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 2 E A Site Code: (4 W > 16 M Quality (-89, 0, t, 2) Amount of Undercut (mm.) Comments Cover N Minimum Width (m.) 1. 0 Number of Transacts 7 < M Maximum In Ring 1 (Number of Points/ Transect (N) Particle Sizes = VI 0 (mm) D Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Point Channel Morphology Data Form Ū 7 7 750 mm. 185 200 Hydraulic Head (mm.) Stream Code: (Unique Code): Measure depth and hydraulic head to nearest 5 mm. Use this table to determine the number of transects and points required, given the minimum stream width. Transact (N) Bank Angle 250 mm. Ø X 1851 Ø ന 200 9 S Points / Depth (mm.) 0 B 20 305 275 0 mm 0 5 5 È # Transects 5 9 2 ន at Site ransect and Point Layout M Location 0 **≥** 2m H ŵ (E) d 1.0 - 1.49Minimum Width (m.) 1.5 - 3.0 Bank Particle Median Dismeters × 3.0 ۸ 1.0 Point Number Bark Right **F** (THEE) ന N 4 S 9

9. J.

Channel Morphology Data Form

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	Citating Morphology Data Olli																	
Stream Name:		<i>,,</i>	Stream Code: (Unique Code):	••		Site Code: 1412-1614	A 41-14	Year:		Sample #:		bate: 20 vyvy/MP	Date: 2009 05 12 12 13 13 13 13 13 13		Transect #	راد) و	15	
Transect and	Transact and Point Layout]		ĺ							_
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and points n	Use this table to determine the number of transacts and points required, given the minimum stream width	e number of minimum st	transects tream width.		Calculate site length	Calculate the transect spacing from the site length and number of transects:	spacing fro	m the		(Measu 2.00	(Measure all particles between 2.00 mm and 1000 mm.)	ticles bet 1000 mm	ween 1.)	Point	(11)	Ш	,] {	Г
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	Minimum Width (m.)	1.0	3	Site Length		Material	Material	H	Size	Spack Point	Spacing (m.) Point Spacing	- 1	Vidth W (m	
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Point	Location	Depth	Hydraulic	1	Maximum	Ť	00	- 8 -	≱ a	6 5 c .	٥			Put – if not.	,	100	FL = Filamen tous	Filamentous
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	Bank to ta	spe height; If a	Bank to tape height; if a height is >2m enter	enter X in box only.	conly.	Amount of	# of Vegetated Sources on	patend	Dom	inant Veg	etation 1	ype: Put	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 × 2 m area Brd in all others	ox of the		Cover Quality -99 = Not Ma	Cover Quality -99 = Not Messurable	
		e enter values	else enter values in proper observation points	avation points		(mm.)	Bank (out of 16)	\perp			-					1 = Embe	0 = No Cover 1 = Embedded Cover	
	m /	E C	720 mm.	/30 mm.	JSCO MM.			+	None	Cultivated	-	Meadow	Scrubland	_	Forest	2 = Unem	pedded Co	Wer
F 97	e d'i	240	175	170	0	X	\otimes	_	\Box			囚				Enter o Initials	Enter dates and initials when data	
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Spacing Active Width W (m.) First point is S/2 from the left bank Active Channel Width (W) (m.) Date: 2009 (DS/13 | Transect # 0.011 50.00 Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) Size 0.01 Unconsolidated Clay
Consolidated Clay
Silt
Sand
Large Boulders
Revince Material Sample #: (Number of Transacts – 1) Year: Site Length (m.) 4 0 Site Length Calculate the transect spacing from the site length and number of transects: Site 14W-16A Minimum Width (m.) 7 . O Number of Transacts | | | Number of Points/ Transact (N) Channel Morphology Data Form
sem
(Unique Code:
(Unique Code): Use this table to determine the number of transacts and points required, given the minimum stream width. Points / Transect (N) 9 S က # Transects at Site 10 2 15 **Iransect and Point Layout** 1.0 - 1.49 Minimum Width (m.) 1.5 - 3.0 > 3.0

0.25

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< 1.0	8		7	Transact (N)		Tra	Transect Spacing (m.) 7, 4	ing (m.)	20	8	Large Boulders	928	- 2	101	Compass	988	C	ر د	_
				1					7	8	Bedrock		1111	=	Bearing:	:6	S	510	;
		Measure	Measure depth and	Particle Sizes		Cover	Types	Types Present	#			_	Agi	Aquatic Vegetation Types Present	etation	ypes Pr	esent		/egetation
		nydiadii	nydrautic nead to nearest 5 mm.	(mm.)	5		* 4	R R 00	α,		_			Put X	in box if	Put X in box if present		- 4	Types Fl = Filamen
Point	Location	Depth	Hydraulic	100	Maximum	(499.	900	0 ×	2 2 2			Ī		- 8	rut – ir not	, j	[Abae
	1.75	70	K K	J	. S	N				╀늗			-		≧ □		¥ 🖂		AL = Non- Filamen- tous
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Bank	Bank	to tape height; else enter valu	Bank to tape height; if a height is >2m enter is else enter values in proper observation	m enter X in box only, servation points	x anly.	Amount of Undercut	# of Vegetated Squares on Bank	Domina	Dominant Vegetation Type: Put X in the box of the dominant type in the 1×2 m. area. Put – in all others.	on Type: Put 1 x 2 m. area	X in the box o Put – in all (if the others.	-99 = Not Measurable 0 = No Cover
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm.)	(out of 16)	None	Cultivated	Meadow	Scrubland	Forest	1 = Embedded Cover 2 = Unembedded Cover
Left	0	330	1.5	215	0	×	7			\square			Enter dates and initials when data
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Bank Particle					1	Comments:							Entered Silg To
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0. AL = Non-Flamen-bus Algae SS = Moss MC = Macro-phytes WC = Water-cress GR = Gress TR = Terres-Pital FL = Filamen-tous 풀 Cover Quality
-99 = Not Messurable
0 ≈ No Cover
1 ≈ Embedded Cover
2 ≈ Unembedded Cover Vegetation Enter dates and initials when data entered in computer Spacing (m.)

Point Spacing Active Width W (m.)

Spacing, S = # Points per Transact Date First point is S/2 from the left bank アナロ E 中 Corrected Entered Verified X 8 Aquatic Vegetation Types Present Active Channel Width (W) (m.) ransect # Put X in box if present Put – if not. WC Compass Bearing: Forest Dominant Vegetation Type: Put X in the box of the dominant type in the 1 \times 2 m. area. Put – in all others. 山 S Date:2009 | 05 | 13 古 Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.10 111 111 Size 0.01 0.011 90.0 귛 Meadow \mathbb{R} X Unconsolidated Clay 료 Consolidated Clay Large Boulders 0 ~ = Cultivated Bedrock Sample #: Material Sand 読 **≥** m ∪ None (Number of Transacts - 1) Transect Spacing (m.) 2.9 F - a -C o o * 2009 Types Present Site Length (m.) / 4 Year: Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: 2002 2002 3 ٥ Site Code: \4W-1674 3000 Quality (-99, 0, 1, 2) Q Amount of Undercut (mm.) Comments Cover 1 Minimum Width (m.) 🔻 🗁 M Maximum In Ring Number of Transacts Number of Points/ Transect (N) Particle Sizes 1500 mm. 197 S 0 (EE) Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points 140 Point Channel Morphology Data Form 750 mm. R 2 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. D Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width, Bank Angle 250 mm. 3 150 S က 9 200 30 (mm.) 130 0 mm 2 # Transects at Site 5 5 12 8 38 ransect and Point Layout Location 0 v 2m Ē Y 9 M Minimum Width (m.) 1.0 - 1.491.5-3.0 Bank Particle Median Otemeters (mm.) < 1.0 > 3.0 Bank Right Point Number F ~ ന 4 S ø

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Stream Name:	Channel Morphology Data Form Stream Code: (Unique Code):	oloud	Stream Code: (Unique Code):			Site Code: ↓ H W - N ₆ M	<u> </u>	Year: 2009	Sample #:	#	Type:	Date: 200 9 0 5 1 3 (アソヤゲ/MIM/DD);	51.59	Transact #	10	2	<u> </u>	
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Use this tab and points n	Use this table to determine the number of transacts and points required, given the minimum stream width.	the number of	of transacts stream width.		Calculate I	Calculate the transect spacing from the site length and number of transects:	spacing from of transects	the		Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	Particle Size Codes easure all particles betwee 2.00 mm and 1000 mm.)	odes i between) mm.)	<u>. ≥ [€</u>	Width (W) (m.)	<i>-</i>	0-		<i>t</i>
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	Minimum Width (m.) /. D	1.0	Site 1	Site Length		Material homeolidated Clay	i di	88	3/8/2	Spacing (m.) Point Spacing		⊘ , ℓ S Active Width W (m.)		5.5.
> 3.0	10		9			I	The state of the s	- empeons	Z	Consolidated Clay	Clav	160	<i>S</i>	Spacing, S		# Points per Transect		1
1.5 – 3.0	0 12		တ	Number of	er of Transacts	15	Site Length (m.)	940	툸	Ŧ		8						
1.0 - 1.49	15		6						ß	Sand		0.10		st point is	rirst point is S/2 from the left bank	e left ban		
< 1.0	20		2	Transect ()		3 Tran	Transect Spacing (m.) 2.9	ng (m.) 2.9	200	Large Boulders Bedrock	28	1001	88	Compass Bearing:	31/			
		Measu	Measure depth and hydraulic head to	Particle	icle Sizes	Cover	Types		╣┟			Aquati	Vegetati	Aquatic Vegetation Types Present	resent	Vegeta	Vegetation	
Point	Location	Depth	8		(mm.) Maximum	Quality (-99-)	₹ 00	(O O A	≥ α	∞ • •		-	ut Xin bo Put –	Put X in box if present Put – if not.	.	<u> </u>	P. = Filamen- tous	
Number	.(a)	(mm:)	Head (mm.)	Point	In Ring	0, 1, 2)	-1:	-	ا ه	-	교	₹	SS	WC WC	æ .	본	Algae AL = Non-	
-	1.82	Ø	Ø.	K	\$.	Ø									Z		Filamen- tous Almae	
2	2,45	P)	4	6	Ś	7			X						×	ÿ <u>≅</u>	SS = Moss MC = Macro	
က	3.08	t	0	12		Ø										§ §	WC = Water- cress	-
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ဖ														-		П		
	Bank to	tape height; b	Bank to tape height; if a height is >2m enter X in box onh	n enter X in box		Amount of	# of Vegetated		Domina	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m area Bt 4 - in all others	ion Type:	Put X in	he box of	ft ag	Cover Quality -99 = Not Mez	Cover Quality -99 = Not Measurable	at e	1
Y Carlo	**************************************	se enter vatu	else enter vatues in proper observation points	avation points	200	(mm.)	Bank (out of 16)		-						O = No C	0 = No Cover 1 = Embedded Cover	Wer	
	E7 ^	O MRM.	.mm vez	/30 mm.	Jago mm.	1		-	None	Cultivated	Meadow	\dashv	Scribland	Forest	2 = Uner	mbedded	Cover	
Left		330	195	170	0	7	4								Enter	Enter dates and initials when data	2 ta	
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Bank Particle Median		C1	ũ	77	CI	Comments:									Enterned	2 3	&	I_ 2
(mm.)		C	70	61	2										Corrected			
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Stream Name:			sam Stream Code: (Unique Code):			Site Code: \	14W-16A	Year:		Sample #:	3 gr	Y/MM/DE	Date:2009 05 13 (YYYY/MIWDD):	Transact #	9	15.	
Transact and Point Layout	ant Layout												<u>ا</u> ا	Ctive Chan	ą		
Use this table t and points requ	Use this table to determine the number of transacts and points required, given the minimum stream width.	e number o	if transects stream width.		Calculate site lengti	Calculate the transect spacing from the site length and number of transects:	spacing fro	m the		Measure 2.00 m	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	odes is between 10 mm.)		Width (W) (m.) Point	` (0 8) , %
Minimum Width (m.)	# Transects at Site		Points / Transect (N)	Minim	um Width (m.)	1.0	Sit Sit	Site Length	15	Material Unconsolidated Clay	alteri Clav	Size		Spacing (m.) Point Spacing	- 1 1	D, S J Active Width W (m.)	0 0
> 3.0	\$		9						ī	Consolidated Clay	ad Clay	0.011	1	Spacing, S		s per Trans	ect
1.5 - 3.0	7 .	+	0		NUTION OF ITAINS	15	Sie Lengin (m.)	07 (1)		责		8.0		st point is	First point is S/2 from the left bank	left bank	
× 1.0 × 1.0	2 2		2	Number of Po Transect (N)	ints/	8	Transect Spacing (m.) 2. o	ing (m.) 2	0.	Large Boulders	ders	100	7	Compass	32.8		7
		Measur	Messure depth and	Parti	Particle Sizes	Cover	Type	Types Present				Aquat	ic Vegetati	Aquatic Vegetation Types Present	resent	Vegetation	ار چ
		nydrat	nydrautic nead to nearest 5 mm.		(mm.)		-	R 00		-	Γ,	_	PutXInb	Put X in box if present		Types	a de la composition della comp
Point	Location (m.)	Depth (mm.)	Hydraulic Head (mm.)	Point	Maximum In Rind	(-89, 0, 1, 2)	000		5 st 0	9 6 7) - E	A	- Br	Put – if not.	ag	TD Agae	Agae
	1,67	30		į .	ŝ	N							+	+	+=	 	Non- Filamen- tous
2	2,00	50		_		Ø	E	#	14				l		□	SS = Mass MC = Macro-	gae foss facro-
п	2,33	36	>	ラ	7	Q										WC = Water-	Water- cress
4																TR Terres	Terres.
r.																	<u> </u>
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Ran	Bank to ta	ipe height; If	Bank Lotape height: If a height is >2m enter X in box only.	n enter X in bo	conly.	Amount of	# of Vegetated Squares on	hated	Dog Darie	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put $-in$ all others.	atton Type	Put X In	the box of	the the	Cover Quality	Cover Quality -99 = Not Measurable	
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm)	Benk (out of 16)		None	Cuttivated	Meadow	8	Scrubland	Forest	_ 1 = Embe 2 = Unem	1 = Embedded Cover 2 = Unembedded Cover	X 14
Left		230	230	170	110	\times						+			Enter d initials	Enter dates and initials when data	
Right		245	(t)	150	100	X	3								- enterex	d in comput	fer Filt.
Bank Particle Median		Cl			7	Comments:									Entered	6/08	×
(mm.)		ĵ			1										B	1	

AL = NonFlamenFlam 풀 Cover Quatity
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Spacing (m.)

Point Spacing Active Width W (m.)

Spacing, S # Points per Transect Date First point is S/2 from the left bank 0.33 0: 본 342 1 Corrected ð Entered Verified 4 GR. Aquatic Vegetation Types Present Active Channel Width (W) (m.) ransect # Put X in box if present Put – if not. Š Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. Š Date: 2009 105/13 (YYYY/MIM/DD): Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.10 1001 Size 0.01 0.011 0.05 ₹ Meadow X ≥ ď Unconsolidated Clay Consolidated Clay Large Boulders 0--Cultivated Bedrock Material Sample #: Sand ŧ **≥** m ∪ None (Number of Transacts - 1) Year: F - a -Transect Spacing (m.) ZSite Length (m.) 40 **Types Present** Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect specing from the site length and number of transects: K 0 2 C D 6 Site 14W-16 A ₹000 Quality (-89, 0, 1, 2) Amount of Undercut (mm.) Comments Cover 98 d X 7 ď Minimum Width (m.) 1.0 (M) Number of Transacts Maximum In Ring Number of Points/ Transect (N) Particle Sizes Š 1500 mm. 125 100 0 (EEE) Bank to tape height; if a height is >2m enter X in box onty, else enter values in proper observation points Point Channel Morphology Data Form 750 mm. 230 5 110 0 U Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. Bank Angle 250 mm. RS 210 9 ന 15 5 U Depth (mm.) 220 40 150 0 mm. 385 310 V # Transacts at Site 15 위 12 ន M 2.00 ransect and Point Layout 24 Location (m.) * 2m و i 1.0 - 1.49 1.5 - 3.0 Width (m.) Bank Particle Median Dismeters Minimum × 3.0 ۸ 1.0 Bank Right Point Number 5 (mm) • 7 ო s) 4 9

0.1

1.9

- 4-7

Diagnostic Indicators of Channel Stability

Stream Trility	1	1 / 1 / 1 / 1 / 1	5	Stream Code	n Code				Ste	Site					Sample #:	##	Date C	Date (YYYY/MM/DD)	- O-		Transect #	20
Name:	11017		J L	Ciund	200				89	37	9		200 4				07	50	-	3	2	
Record these values only on the first transect Site Length (m): UO	ues only on the	e first transect Transect Spacing (m):	Spacin		6.2		√ >¥	RANKIN	2	h	N	ک۔ مار۔ 				Comments	ents	er.			00	
Obstructions	None Present	sent		DISCHARGE A	RGE A	PROXIN	MTES E	PPROXIMATES BASEFLOW	V YES	Z				Channel Profile (continued)	Profile (comfin	() ()		<u>i</u>	•		
to Flow	Trampled Banks	Benks							2							Veloc	ty Mea	Velocity Measurements	Ę			•
(If name	Wood Deflectors	ectors				201123	Channel Profile	Profile									r	r	Τ			
present, check	Inorganic Deflectors Amounto	Deflecto	2	Feature	Forig Loc.	Vert Ht to Benitfull	Vent Hir to Tape	Vert HP * This column is for recording data when the to minimum width:depth ratio indicator is used Table and the barnthil level is NOT identified in the	in is for reco lih:depth ret full level is I	rding date to indicator fOT identifi			foriz.	# \$		Water	Valion	1	ole V			•
Present'	T Inlets				Ē	(mm)	(mm)	flekt.			T	THEFT		(mm)	(mm)	(mm.) (mm)	-	Min	(m/s)	••••••		•
Otherwise check the	Others (List Types)	st Types	٦	Left BFD	Ø	Ø		Velo	Velocity Measurements	Urement	g	16								****		
applicable types.)				Right BFD	2.0	200			bottom is 0.4)	(4)		1		T		T	Γ	T				
16.70				Max Channel Depth	S.	Sio		Wester Depth	Depth (mm)	Tums/		18			6,740		T			Transect and Point Layout	int Layout	
indicators		Left Bank	Right Bank	Left Active		360	× .					5	1		Γ	T			<u>5 g</u>	Use this table to provide guidance for selecting how	provide ecting how	_
Used to Locate	Inflection Point	×	Ø									8	1						E E 3	many points per transect to measure, given the minimum width of the aiream	transect K the minimu am	. E
Bankfull	Bank Material			Measurement 1	1 2	200						12	T	1		T		T		Winterum	Low	Berry Co.
	Top of			2	2 8	27						22	T		,	1			E E	Width (m.)	variance In	
	Vegetation	Z	×	6	5.70	200						83	\top					T	T		velocity or depth	velocity or depth
	Minimum			4	_	-						24							\vdash		8+1 every 2	10 + 1 every 1
	Others			တ								25	\vdash			5			\vdash	15-30	metre	_
Entrenchment	(List Types)		I	9					>			92	T				Γ		17	10-140	ල .	
Entrenchment He	ioht = 2 X			-		\vdash	100		K			22	\dagger			1	T	T	18	Active Width (W) (m.)	,	80
Maximum Charmel Depth	el Depth			80		\vdash						88	T					T	T 8.		Active Width (W) (m.)	l_
Entrenchment Width = Horizontal distance from the location of the	idth = Horizonta Flocation of the	-		6								8				T		T	<u> </u>	Spacing = - (S)(m.)	# Points per	1
bank at the Entrenchment Height	nchment Height	_		5								30							اها	Point Spacing (S) (m.)	(m.)	
Record either the Left and Right	Left and Right			=								31	\vdash						E A	First point is 5/2 from the left bank	from the k	Ĕ
widths, or the Tot	al Width			12								32							<u> </u>	Enter dates and tritials when data entered in computer	Initials who computer	£
Left Entrenchment Width (m):	nt Width (m):			£								33		T	Γ	T	T		Т		Date	E.
Right Entrenchment Width (m):	ent Width (m):			4		-					1	8	1	T		T		T		Entered		
Total Entrenchment Width (m):	nt Width (m):	740	0	15	Terkaniyald	-						38	T			T	T	T		mertor		
								1				1	1	1	1	1	1	1	ጘ	- Aniaran		

W.

 $\dot{\omega}$ P. = Flamenbous
AgeAL = NonFlamenbous
Noss = Moss
NC = Mecropryles
WC = WelerC = WelerTR = TerresTR = TerresFlants 풀 Cover Quality
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Enter dates and initials when data entered in computer Vegetation Types Spacing (m.) C. ↓ ↓ C.
Point Spacing Active Width W (m.)
Specing, S = # Points per Transact Date 0.40 First point is S/2 from the left bank 띥 7 300 Соттесный Entered Verified 90 K Aquatic Vegetation Types Present 8 Active Channel Width (W) (m.) Transact # Put X in box if present Put – if not. Š Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. **∑** Date: 2009/05/19 Scrubland SS Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.011 0.10 1111 Size 0.01 0.05 ₹ Meadow X \geq 교 Unconsolidated Clay Consolidated Clay Large Boulders 0-= Cultivated Material Bedrock Sample #: Sand **60 65 C 36** 惹 **Z** a ∪ None (Number of Transacts - 1) Year: F - a -Transact Spacing (m.) 2. Site Length (m.) 40 Types Present Site Length # of Vegetated Squeres on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 2 C A Site Code:14W-16A I **₹00**0 Quality (-99, 0, 1, 2) N Amount of Undercut (mm.) Cover Ø X X Minimum Width (m.) 1.0 Number of Transacts / 5 M Maximum In Ring Particle Sizes (mm.) Number of Points/ Transect (N) 1500 mm. S 230 Bank to tape height; If a height is >2m enter X in box only, else enter values in proper observation points Point 750 mm. Channel Morphology Data Form 205 250 Stream Code: (Unique Code): Hydraulic Head (mm.) Messure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. Bank Angle 250 mm. 265 240 Ø Ø كحز 9 ന 0() (mm.) 2) 50) 365 340 Omm. J U # Transects at Site 15 9 2 8 0 X ransect and Point Layout Location N > 2m 77 (m) i 3 Minimum Width (m.) 1.5 - 3.0 1.0 - 1.49 < 1.0 > 3.0 Point Number Bank Right Bank Particle Median Oismeter (mm.) Feb. ~ ന 4 S ø

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Agae
AL = NonFlamenFlamenTous Agae
SS = Moss
MC = MacroMC = MacroCress
GR = Grass
TR = TerresFinal á Ĕ Cover Quality
-99 = Not Measurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and infitials when data entered in computer Spacing (m.)

Point Spacing Active Width W (m.)
Spacing. S # Points per Transect Date First point is S/2 from the left bank 000 0, 15 1.0 K Corrected Entered Verified 6 SR. Aquatic Vegetation Types Present X Active Channel Width (W) (m.) Date: 2.00 () 5/13 | Transed # Put X In box if present Put – if not. × KC Ф Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the $t \times 2$ m. area. Put – in all others. 面 ğ 8 Scrubland SS Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.011 0.05 0.10 1001 Size 0.0 ₹ Meadow X × Unconsolidated Clay Consolidated Clay 급 Large Boulders Bedrock 0 **-** -Cultivated Material Sample #: Sand 蒙 **≥** a ∪ > None (Number of Transacts - 1) F - g -の c × Transect Spacing (m.) 3 Site Length (m.) 40 Types Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 0 7 M 3 -₹ Quality (-89, 0, t, 2) Amount of Undercut (mm.) Cover N Comments 50 58 K Minimum Width (m.) 🚶 ð Number of Transacts { } ÇÚ Maximum In Ring Number of Points/ Transact (N) i Particle Sizes 1500 mm. SY (mm.) a Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Channel Morphology Data Form Point 750 mm. Ú 550 J 5 DOC Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transacts and points required, given the minimum stream width. Bank Angle G Ø 250 mm. Ø 180 230 9 S က ~ Depth (mm.) C80 3 O mm. 300 d 310 5 2 # Transects at Site 42 15 2 20 0 fransect and Point Layout Location و آ M × 2m Œ. N 1.0 - 1.491.5 - 3.0Width (m.) Bank Particle Median Diameters (mm.) × 3.0 < 1.0 Minimum Bank Right Point Number Fe T ~ က 4 ß 9

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Stream	Stream Code: Stream Code: Wilshim Code:	prolor	Stream Code:	Elor .		Site	-	Year:		Sample #:	Date: 2009 105 15	50/60		< -	1
			anno anhuio			1d \	1 8 J	2000		_	NALL TANK	í	Transect #	5	্
ransect and	ransect and Point Layout											Γ	Active Channel	innel	
Use this tat and points r	Use this table to determine the number of transacts and points required, given the minimum stream width.	he number of le minimum s	f transects tream width.		Calculate (Calculate the transect spacing from the site length and number of transects:	spacing fr	om the cts:		Partici (Measure al 2.00 mm	Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)		Width (W) (m.)	- ,	4.6
Minimum Width (m.)	# Transects		Points / Transect (N)	Minimu	Minimum Width (m.)	1.0	Ø	Site Length		Material	H	Size	Spacing (m.) Point Spacing		Active Width W (m)
> 3.0	+		9			$\frac{1}{1}$	(Number	(Number of Transacts 1)		Unconsolidated Clay	+	0.01	Spacing, S	10	# Points per Transect
1.5 – 3.0	12		ĸ	Numbe	Number of Transacts	15	Site Length (m.)	m.) 40	10,	Si.	\dagger	90.0			
1.0 - 1.49	9 15		3						اد 	Sand		0.10	First point is	First point is S/2 from the left bank	eft bank
× 1.0	02		2	Transe	Number of Points/ Transact (N)	الم الم	ansect Spa	Transect Spacing (m.)2.		Large Boulders Bedrock		1001	Compass Bearing:	3-5	
		Measun	Measure depth and hydraulic head to	Partic	Particle Sizes	Cover	<u>F</u>				₹	uatic Veg	Aquatic Vegetation Types Present	. 11	Vegetation
Point	Location	Depth	nearest 5 mm.		Maximum	Ť	≥ ∘ ∘ ₁	0 3 C	≥ a ·	O	1	1	Put X in box if present Put – if not.	g	P. = Filamentous
Number	(m.);	(mm.)	Head (mm.)	Point	In Ring	0, 1, 2)	•	Щ	.	+	FLAL	SS	MC	GR TR	AL = Non-
-	1.68	99	×	Ī	v'	0			D	H			Ц Ц	里 里	Tilamen tous Alose
8	2,05	175	Ø	5	·s	9						4			SS = Moss
3	2,42	08	ø	Ü	5 :	6			×						WC - Water
4			1												TR = Terres
S							中								
9				, L									中		T1
Bank	Bank to	tape height; If	Bank to tape height; if a height is >2m enter X in box else enter values in proper observation points		box only.	Amount of Undercut	# of Vegetated Squares on Bank	petsted	Domir dominar	ant Vegetati It type in the	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others.	(in the b Put – in	ox of the all others.	Cover Quality -99 = Not Measurable 0 = No Cover	lity Aeasurable er
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(mm)	(out of 16)	<u></u>	None	Cuttivated	Meadow	Scrubland	d Forest	1 = Embed: 2 = Unembe	1 = Embedded Cover 2 = Unembedded Cover
Left		340	250	175	0	×	En				х			Enter dates and initials when data	tes and then data
Right		330	170	150	90	×	4				X				entered in computer Date Intt.
Bank Particle Median		3			1	Comments:								Entered	A Roy
Oismeters (mm.)		3			1						:			Corrected	
				_	١										ana ana

3 Agae
AL = NonFlamenbus
SS = Moss
MC = MacroMC = Water
Cress
GR = Grass
TR = TerresFinal 풀 Cover Quality
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Specing (m.)

Point Specing Active Width W (m.)
Specing, S = # Points per Transect Date First point is S/2 from the left bank Ħ -Corrected 700 Entered Verified ð 8 X Aquatic Vegetation Types Present X \angle Active Channel Width (W) (m.) Transact # Put X In box if present Put – if not. χ Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1×2 m. area. Put – in all others. Š Date: 2009/05/13 Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.011 0.05 0.10 Size 0.01 100 1 1111 ₹ Meadow \boxtimes X Unconsolidated Clay ፈ Consolidated Clay Large Boulders Bedrock 0--Cultivated Material Sample #: Sand 풄 **≥** m ∪ None (Number of Transacts -- 1) Year: 2009 2 F - a -g o o x Transect Spacing (m.) Types Present Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 2 E A Site Length (m.) 0 X Site (4/4) - 16 A ₹ Quality (-89, 0, 1, 2) Amount of Undercut (mm.) Cover Comments N N Ø 0-X Minimum Width (m.) | , 🔘 Number of Transects (5 Maximum In Ring ~ Particle Sizes (mm.) \wedge Number of Points/ 00 S 1500 mm. S 7 0 Transact (N) Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Point J 750 mm. Channel Morphology Data Form 3 170 J 0 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. Bank Angle 130 250 mm. 155 Ø Ø Ø ŝ 9 က ~ Depth (mm.) 45 V ٥ 0 mm 014 27 11 U # Transects at Site S 15 2 12 8 74 4 2.15 ransect and Point Layout Location (m.) 5 v 2m à 1.5 - 3.01.0 - 1.49Width (m.) Bank Particle Median Diameters (mm.) < 1.0 v 3.0 Minimum Bank Point Number Right Feb. က ~ 4 S 9

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tous
Age
AL = NonFlamenSS = Moss
NC = MacroMC = WacroMC = WaeroMC = WaeroMC = WaeroMT = TeresTrial
Plants P. = Filamen Cover Quality
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Enter dates and initials when data entered in computer Vegetation Types Spacing (m.)

Point Spacing Active Width W (m.)
Spacing, S = # Points per Transect Date First point is S/2 from the left bank 0.52 묎 V Corrected Entered ŏ Verlified 296 Date: 2029 05/13 Transed # 12 X X GR. Aquatic Vegetation Types Present Active Channel Width (W) (m.) Put X in box if present Put – if not. X ≪ Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1×2 m. area. Put – in all others. S Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) Size 0.01 0.01 0.05 0.10 1001 1111 Z Meadow X × Unconsolidated Clay 딦 Consolidated Clay Silt Large Boulders 0-5 Cultivated Bedrock Material Sample #: Sand X None (Number of Transacts - 1) 9 F - g --C O O X Year: Zp 09 0 Transect Spacing (m.) ZTypes Present Site Length (m.) Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: K 0 0 Z 0 DO Site (40)- 164 **₹00**₽ Quality (-99, 0, 1, 2) Amount of Undercut (mm.) Cover Comments Ø 0 d 0 Minimum Width (m.) X Number of Transacts | S Number of Points/ Maximum In Ring N Particle Sizes (mm.) 1500 mm. vi i 0 Ø Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Point 750 mm. Channel Morphology Data Form 5 う J 9 200 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transects and points required, given the minimum stream width. Bank Angle 250 mm. 98 0 210 Ø 190 9 'n ന N (mm.) 9 30 W 0 mm. (290 390 5 5 # Transects 12 5 2 9 at Site 200 ransect and Point Layout 0 Location * 2m 7 . E S Ni 1.0 - 1.491.5 - 3.0Width (m.) Bank Particle Median Olameters (mm.) > 3.0 **~** 1.0 Minimum Bank Right Point Number 5 8 က 4 S 9

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	_		(Unique Code):	;;		Code: 1년씨-16년		2009	1	* ~	Date: 22	CVYY/MINDD): 5/13	1/3 Transact #	a# 13 of	N	
ransect an	ransect and Point Layout								L				Active Channel	Proper	$\ \Gamma \ $	
Use this ta and points	Jee this table to determine the number of transects and points required, given the minimum stream width.	the number the minimum	of transects stream width.		Calculate site length	the transect and number	Calculate the transect spacing from the site length and number of transects:	et .		Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.)	Particle Size Codes sure all particles bet 30 mm and 1000 mm	tween (.r.	Width (W) (m.)	(m.)	8	
Minimum Width (m.)	# Tra		Points / Transect (N)	Minimu	ım Width (m.)		Site L (Number of T	Site Length (Number of Transacts - 1)	Material	Material Unconsolidated Clay	-	Size 0.01	Spacing (m.) Point Spacing		Active Width W (m.)	् ऽ
15-30	-	2 2	w w	Man N	Number of Transacts	F	Site Length (m.)		ठ	Consolidated Clay	$\dag \uparrow$	0.011	2			5
1.0 - 1.49	_	15	6			٦Ĭ			Sand		+	0.10	First point	First point is S/2 from the left bank	e left bank	
o.1 >		20	2	Number of P	Number of Points/ Transect (N)	류	Transect Spacing (m.)	g (m.)	Large Bo Bedrock	Large Boulders Bedrock		1001	Compass Bearing:	330	0	ļ
		Measu	Messure depth and hydraulic head to nearest 5 mm.	Partir	Particle Sizes (mm.)	Cover	<u>&</u> -	Present R F R				Aquatic Veg	Aquatic Vegetation Types Present Put X in box if present	s Present	Vegetation	T igi
Point Number	Location (m.)`	Depth (mm.)	Hydraulic Head (mm.)	n.)	Maximum In Ring	Ouality (-89. 0, 1, 2)	000	- # - 0 0 X	∑ @ ∪	0-=	F.	AL SS	Put – if not.	8	<u> </u>	FL = Filamen- tous Algae
-	1,73	0700			2,5			「「」	揣		古	╁╼╁╴	 	6	1	Al. = Non- Filamen- tous
7	2.5	One	Á	17	22	Ø		博			占	 	置		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Algae SS = Moss MC = Macro-
က	25	120	×	ŭ	\$:	3			X		4				MC = Welfa	WC = Water- cress
4																Terres trial
ď															To	
9															Tm	
Bank	Bank to	o tape height; ise enter valu	Bank Angle If a height is >2:	Bank to tape height; if a height is >2m enter X in box else enter values in proper observation points	only,	Amount of Undercut	# of Vegetated Squares on		Dominant ominant ty	Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put – in all others.	Type: Puf x 2 m. are	X in the ba. Put - in	all others.	Cover Quality -99 = Not Med 0 = No Cover	Cover Quality -99 = Not Messurable 0 = No Cover	4
	> 2m	0 mm.	250 mm.	750 mm.	1500 mm.	(Jan.)	(out of 16)	None		Cuttivated	Meadow	Scrubland	rd Forest	Ī	1 = Embedded Cover 2 = Unembedded Cover	DVGF
Left		450	275	190	Ø	×	13				×			Enter	Enter dates and initials when data	
Right	/	0211	150	571	&	×	76							- entera	entered in computer Date	ifer Inft.
Bank Particle Median		C C			1	Comments:								Entered	19/6	13.
(mm.)		J			1						1			Corrected	, <u>B</u>	

2020 Agae
AL = NonFlamenFlamenFlamenFlamenMC = MaconMC = MaconCress
GR = Grass
TR = TerresFinal PL = Filamen Cover Quality
-99 = Not Measurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Spacing (m.)

Point Spacing Active Width W (m.)
Spacing, S = # Points per Transect Date 0 /5/ First point is S/2 from the left bank 5.5 d 꿈 Corrected 308 Entered Verified 土 8 X Aquatic Vegetation Types Present Active Channel Width (W) (m.) Transact # Put X In box if present Put – if not. WC Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m, area. Put – in all others. Š Date: 2004/05/13 Scrubland SS Particle Size Codes (Messure all particles between 2.00 mm and 1000 mm.) 0.10 0.011 9.0 1001 1111 Size 0.01 ¥ Meadow \boxtimes X 료 Unconsolidated Clay Consolidated Clay Large Boulders 0--Cultivated Bedrock Material Sample #: Sand ぎ **≥** ≅ ∪ × None (Number of Transacts - 1) Year: 2009 Transect Spacing (m.) 2.9 F — a -C O O Y Site Length (m.) 4 0 **Types Present** Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: 100 Z ~ S Site Code: 14W-164 ₹ Quality (-89, 0, 1, 2) Amount of Undercut (mm.) Cover Comments ال Q X Number of Transacts 15 Y Minimum Width (m.) / . 0 X C Maximum In Ring Particle Sizes (mm.) Number of Points/ Transact (N) B 1500 mm. S vi 0 0 Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Point 750 mm. Channel Morphology Data Form 0 $\bar{\upsilon}$ \mathcal{G} 200 100 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Use this table to determine the number of transacts and points required, given the minimum stream width. Bank Angle 2 250 mm. K 430 B 50 S ന 9 Depth (mm.) 190 Po 1. 0 mm 70 647 400 3 # Transects at Site J 15 9 2 20 200 0 ransect and Point Layout 0 Location 7 **>** 2m Ē N a 1.0 - 1.49 1.5-3.0 Width (m.) Bank Partide Median Diameters (mm.) × 3.0 ۸ 1.0 Minimum Bank Right Point Number Fel s ď ന 4 9

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W KO P.L. = Filamentous
AL = MonFilamentous
Auges
SS = Moss
MC = Mecropryles
WC = WestrGR = Gress
TR = TerresFlants
Flants 롲 Cover Quality
-99 = Not Messurable
0 = No Cover
1 = Embedded Cover
2 = Unembedded Cover Vegetation Types Enter dates and initials when data entered in computer Spacing Active Width W (m.)
Spacing Active Width W (m.) Date First point is S/2 from the left bank 5/20 0 1:0 ۴ Corrected 320 Entered Verified Transact # S. Aquatic Vegetation Types Present Active Channel Width (W) (m.) Put X in box if present Put – if not. WC Forest Compass Bearing: Dominant Vegetation Type: Put X in the box of the dominant type in the 1 x 2 m. area. Put - in all others. ξ Date: 2009 105/13 Scrubland 山 SS Particle Size Codes (Measure all particles between 2.00 mm and 1000 mm.) 0.01 0.05 0.10 1001 Size 0.0 1111 ₹ Meadow X X Unconsolidated Clay 료 Consolidated Clay Large Boulders 0--Cultivated Bedrock Material Sample #: Sand 葱 **≥** a ∪ None (Number of Transacts - 1) Year: 2009 Transect Spacing (m.) Z. F - m -Site Length (m.) 🗸 🗸 **Types Present** Site Length # of Vegetated Squares on Bank (out of 16) Calculate the transect spacing from the site length and number of transects: 2 c t E 0 9 3 Site 14W-1614 1 ₹000 Quality (-99, 0, t, 2) Amount of Undercut (mm.) Comments Cover 0 B 9 Minimum Width (m.) 1, 🔾 y Number of Transacts 15 0 Maximum In Ring Particle Sizes (mm.) Number of Points/ Ś 1500 mm. Ś S 0 必 Fransact (N) Bank to tape height; if a height is >2m enter X in box only, else enter values in proper observation points Point Channel Morphology Data Form 750 mm. 140 5 100 J 2 Stream Code: (Unique Code): Hydraulic Head (mm.) Measure depth and hydraulic head to nearest 5 mm. Points / Transect (N) Bank Angle Use this table to determine the number of transacts and points required, given the minimum stream width. 250 mm. 255 d 0 S ന ø ~ A 3 Depth (mm.) 001 30 O THE 10 350 375 # Transects at Site 9 12 15 2 ransect and Point Layout 00 Location (m.) 4 S **2** 2m .s N N 1.0 - 1.491.5 - 3.0Width (m.) Bank Particle Median Dismeters (mm.) **^** 1.0 Minimum × 3.0 Bank Rgh Point Number Ę ~ ന 4 S 9

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Station:	Gr.	Project N	lumber:	Fa. M. Atheny and M.	an des	3
3,4,53	As any of	14.0	9222.001	1. EN2.		MMMGROUP
Stream/Waterbody	1			Stream Type	Streams	Sampling Form
(1-12)	14W-14	20 = 1 - 1	Stall to Cal	Permanent	SC SO	
Watershed/Drainag) - 2		Intermittent		
Easting:	Waterb	ody Type:		10 g Hadi, 8.1.	Station	
see note	Agricu	Itural.	swale/tril	butary.	Length (m)	Date: December
Northing:	Access F	Route:		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 7 1 1 1 1 1 1 1 1
	Privat	ie lane	way from	-Dandas points	P. M. 200	
	Street	t, follow	of to GPS	points		Time:
	north	of pon	a.			
9) 3)	Rir	narian Vege	etation Comm	unity (facing up	ostream)	<u> </u>
Distance from Water's Edge	H(0====================================	Bank	TA PER TEST	t Bank	, , , , , , , , , , , , , , , , , , ,	Comments
1.5 – 10 m	Meadow/	Aari	Meadow	Agri	12 X # 1	
10 – 30 m		. •	Agricult			14 in [15]
30 – 100 m	Adricult		Agrica	The second secon		
Water Clarity Co			0		Other:	
Instream Cover Pre	esent A	Vone Spar	rse Moderate	te Dense		Comments
Undercut banks	- 4 x .		1 0			
Overhanging bank ve	egetation] 🗆	烛		
Woody debris] 🗆			
Rocks/boulders		1 58 🗆				
Notes:					1	
Site#3	177 59	17882	48092	56		
Site#3 Site#4 Site#5	MT 5	19850	U8 09	257		
5, te# 4	17 7 5	97462	4129	171		
5ite #5		1,000	1501	2 10		2.4.2

Ä .			Cross S	ection '	Transec	ts (Left	to Rig		upstrea	- H 81 676 105			4.64
Transect	Spacing	Bankfull Width	HT 1	HT 2	HT 3	HT 4	HT 5	Left Wetted	Right Wetted	Wetted Width	D 1	D 2	D
T1)	177	5.5	0.56	1.85	1			1,8		19	Ne	411	5
e 3		3	180	250	230	230	125	1, 8	4.3	2.5	10.0		-
T2					10 4/4	Said R	1 - 1003					E and	
\cap	0.7	0.9	0.45	1.35	2.25	3.5	4.05	0.0	32.5 4.36	Classic Classic	Hax	3.5	100
T3)	0.9	4.5	150	165	180	180	210	2.90	9,70	0.80	16KX	408	2
T4)	1 00	(1)	0.54	1.62	2.70	3.78	4.86) The molecular	105/06/	1 pyen jih	Ţ.T.		res f
te.5	1.08	5,4	160	180	225	230	130	no c	hanne	1/10	wate	r	
T5		1850		0.00	4 5								
							- 75 11						
Δ				THE WAY	Site	Diag	ıram		E BUSIN	1			
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		Site	4				1	70.7 54 (- 1/			الم	=13-
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	1-1-	Site 3				1		1					
		Siles			1	1							
哥		-	= *		1	A)	and the same of th				

Station:	fair This in Se	Tall V	oject Num		11 approved	al mi		AMAN ARAUR
Stream/Waterbody N	ame:	14	.0922	2.001.1	Stream T Permanen		Streams	MMM GROUP Sampling Form
Watershed/Drainage:	1				Intermitte			
Easting: 17T	Waterb		уре:		1130-11-1131		Station Length (m)	Date: Dec 10/2010
Northing: 4809142	Access: Privation walk culve	Route:	eway f ream f to GPS	from Dur From field Spoint.	das Stre derossiv	et,		Time:
1	Ri	parian	Vegetati	ion Commu	nity (facin	g upsi	tream)	A.
Distance from Water's Edge		t Bank		Right l	evist interes			Comments
1.5 – 10 m					4			
10 – 30 m		L	N - I		Y.	<u></u>		
30 – 100 m						- II		
Water Clarity Colo	urless	urbid	Blue/G	reen Yell	low/Brown	Oth	ier:	
Instream Cover Prese	ent /	None	Sparse	Moderate	Dense		1	Comments
Undercut banks	k.	囚				-eri	oding ba	inks.
Overhanging bank vego	etation			內		1		1
Woody debris		尥						
Rocks/boulders		മ			ď			
Notes: Water in Surface	channe was k	l is stoke	froze	n. Lin	rited fl	owin	ng wat	ter when

20.10			Cross S	Section '	Transe	cts (Lef	t to Rig	ht facing	upstrea	ım)			- MIRS
Transect	Spacing	Bankfull Width	HT 1	HT 2	HT 3	HT 4	HT 5	Left Wetted	Right Wetted	Wetted Width	D 1	D 2	D 3
T1	1.22	6.1	0.61	1.83	3.05	4.27	5.49	0.95	1.75	0.8	MAXZ	1.80	51 TAGE
1#941	+0.5		5.50	5,00	530	250	180				(0,0)	740	FOLIAGE
T2					74-74-5-3					i an jese e e e			
Т3			10/5/52	176 j					TAL TO	PER LABOR.			13(12)
<u> </u>			1	(A) =	1./		12200000000	7	20.00				
T4				1.7	,12	A angle in	<u> </u>	Ā ta		of nine sw			LES
Т5						9 11 1							II VEIN
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AND					Site	e Diag	gram		· ·				
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						11							
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				4-	1				+1)			

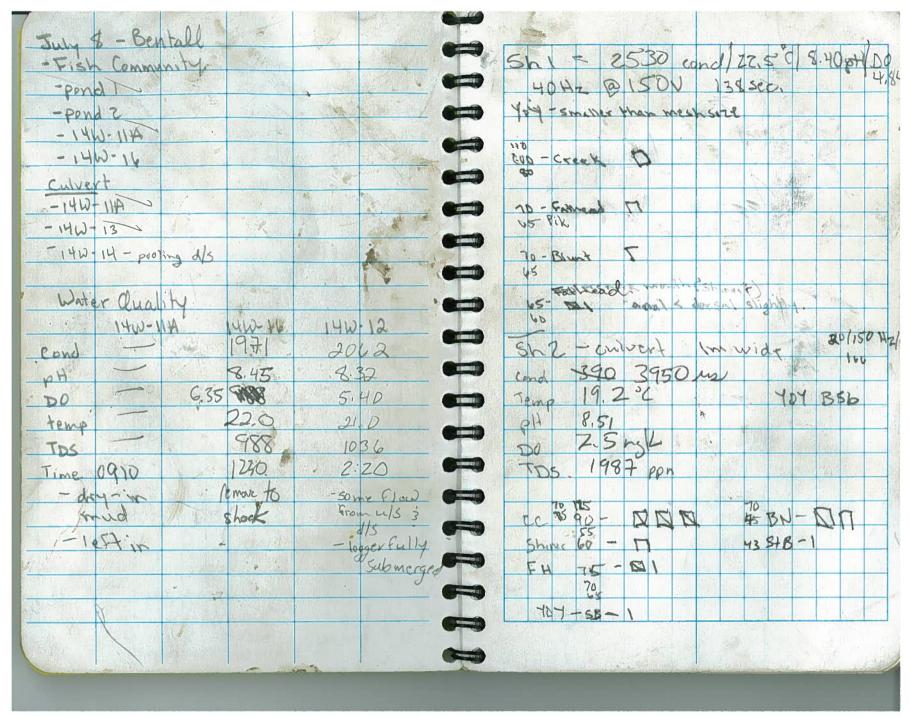
Station:	The last	Proje	ect Nun	nber:		Mar.		(p)
(2)	m/Waterbody Name:	14.	0925	22.001.	EN2.	1 8		MMM GROUP
Stream/Waterbody	Name:				Stream Ty Permanent	_	Streams	Sampling Form
Watershed/Drainage				2	│ □ Intermitten ☑	ıt	0.5.1,51136	5"
Easting: 17 T 597 87 8		ody Typ	je: trib.	utary.			Station Length (m)	Date:
Northing: 4809219	Access I Privat Walk	Route: ie lang to to E	LWAL 7PS	y from D	onndas St	+.		Time:
	Rij	parian V	/egetat	ion Commi	ınity (facing	g upst	ream)	1
Distance from Water's Edge	Left	Bank		Right	Bank			Comments
1.5 – 10 m				Meado	w.		===	
10 – 30 m	Agricul	ture		Agricul	iture.			
30 – 100 m				Agrica				
Water Clarity Col	lourless	arbid	Blue/G	Green Yel	low/Brown	Oth	ier:	
Instream Cover Pres	sent 1	Vone S	Sparse	Moderate	Dense		(Comments
Undercut banks								O .
Overhanging bank ve	getation					Streams Sampling Form mittent Station Length (m) Comments Comments Comments Comments Comments		
Woody debris	Ripar Left Bo Meadow Agricultu Agricultu Agricultu Agricultu Agricultu Agricultu Agricultu Colourless Turt Present Noi							
Rocks/boulders						am Type: nanent Sta Lei (m) facing upstream rown Other: nse		1
Notes:		V			-,11			

			Cross S	ection [Transec	ts (Left	to Rig	ht facing	g upstrea	am)			
Transect	Spacing	Bankfull Width	HT 1	HT 2	HT 3	HT 4	HT 5	Left Wetted	Right Wetted	Wetted Width	D 1	D 2	D 3
TI 1	CTTO Y	5,5	0.55	1:65	2.75	3.85	4,95	0 -	. 2	À 4	Max	20	10 100
T1 ite#2	1.1	5,5	160	155	389	90	1.48	×.5	3.1.	0.6	(9	3.80	
T2				1	HDRIES.	(5) E 1						107100453	All terms
7		(in the second	garin	3/2	- An A				मृत्र के अरुक	12,415 12,115			
Т3		Datel	un e Xán	240			15 7 7			UU x		3	- T
T4							:: :: :		5311631	1 10000	1		- 178
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T5		crupti il ;										1-114	7
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A			i in		Site	Diag	gram	ELLANT E	2511115				1100000
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Bental	L July 3	oth		- dead C	
14		A MW-16	144-12		
TOS	475	584	944	A TOP T	
Cond	980	1774	442		- 6
PH	7.95	FF. F	7.79		- 6
D.D.	7.65	7.84	了,不再	1	
Temp	17.5	17.0	19.0		
Time	9:38	10:12	10,42		6
£ 31,2 10			77 - 12 - 24 - 1		
Notes:	Stunding	exceptor:	mlane 1	my; pud	dles.
14W-11	A: lots	of water	(ankly	dept in	0000
1412-1	bin - a				€
	- alga	has a	really s	educed	
	-wat	risve	y silty	- 510	
121-131	- M- WH	water	~ Change	El, flow	increed.
	-	pools air	Field o	cossings	•
			o spear		- 0
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top of algae mat June 26 14W-11A 14W-16 384 TOS ime 11:08 111 Boom - abundant algae 10:47am noflow not as dense as previous isolated pool wered water levels Post heavy rain - turbid -no apparent flow

US of OSAR Temp +13.9 cond -> 985 7 6.89 pH -77.83 TDS + U93 DS @ 80m Demands - Et C 10) ws - march west side 11) 15 - willow greaview (12) Inlet - DS (13) putlet - us (19) DS from culvert Brotall May 28 MW12FL1 14-11A-TL6 14W-TLS 1471-14762 3.38 7.57 8.62 DO-726 1039 615 862 505-896 COND- 1801 1296 / 1630 1714 7,90 789 PH-7.75 7.53 turbid 13.9 13.1 T= 15.7 13.8

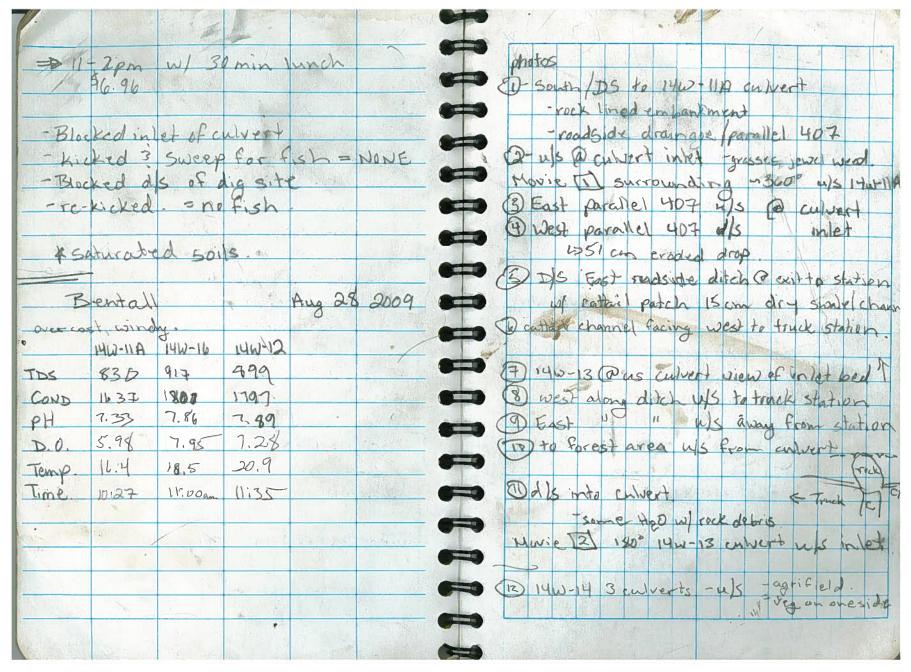


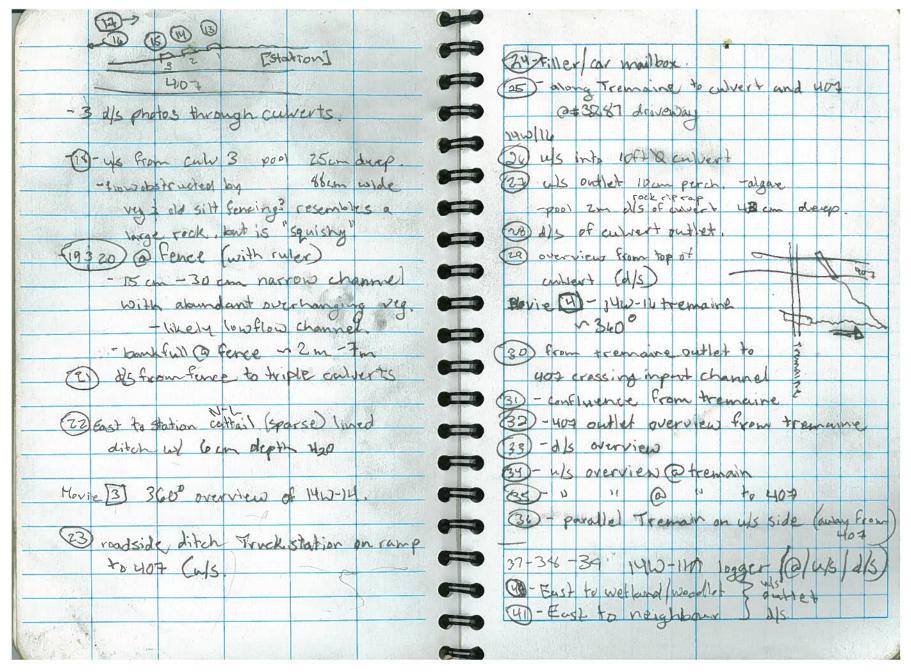
narrow CT Sh3 (culvert) - no fight settings Small pond Temp - 26,300 40/150 (335) - repoling in culvert - check dam) rock d/s fx to maintain DO - 530 m) Cond 380 H20 4/3. Shock perimeter of in TDS- 189 < 4 pix > 3 NS 1 dS ppm Pond -93 very dense of agae -roadside prainage contributes @ culvert on Het shocking poorly effective - chanjamon, sit, algae - large bass congregate The same incentre of poul @ - deep centre Sh 4 1228 Ma 40/150 - clay, gravel sloped shoreline cond 613 ppm Sec 203 TOS ALCOHOL: 8.75 Zpie congrete culver US of DSAP site Fla 26.4 06 - octive field crossing D 0 4. 60 mg/a - possible wash @ burn pile east of creek down 60/250 30 15 respond ly Pond 3685ec 12 Broke - 1 - same size as earlier visit 745 55-45 LMBass Cand TIDS 31-36 Stickly 4.51 Lots of 704 M TO 8.58 Pix @ the pond Brook / FH PH 26.0 Temp

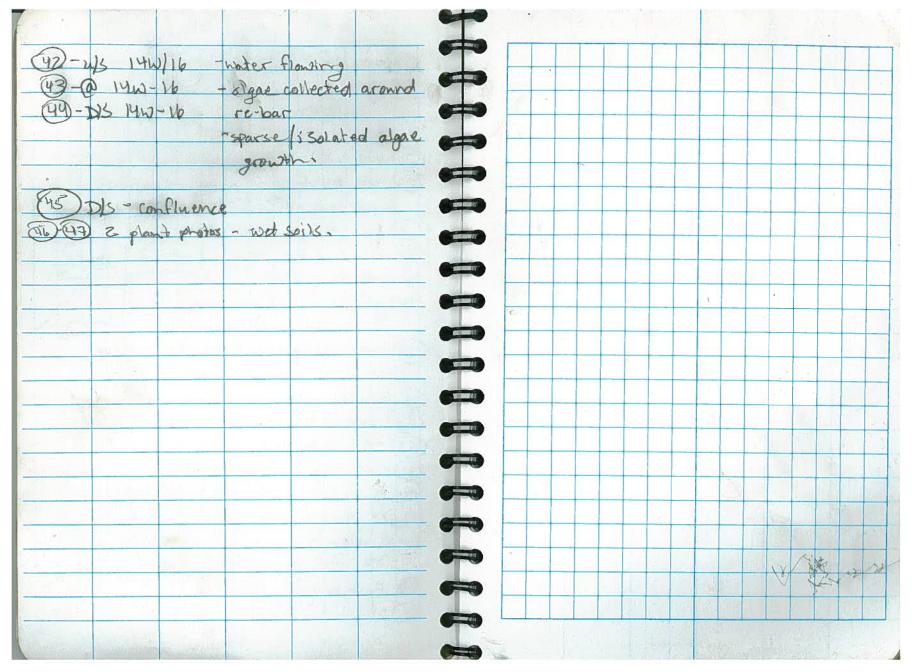
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	E LA	the thing to	#34 #34	14.5	1724 WEAN	JAI-MM
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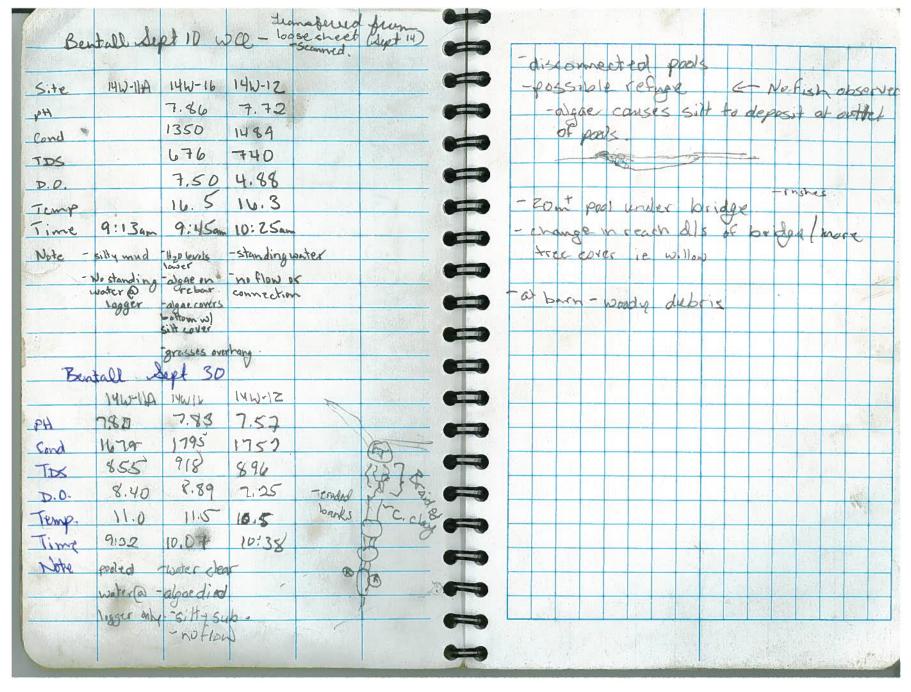
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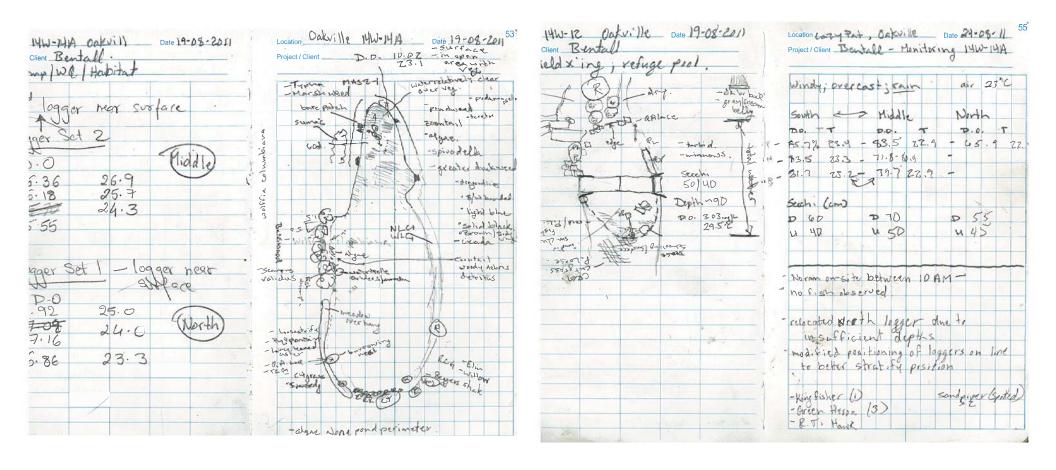




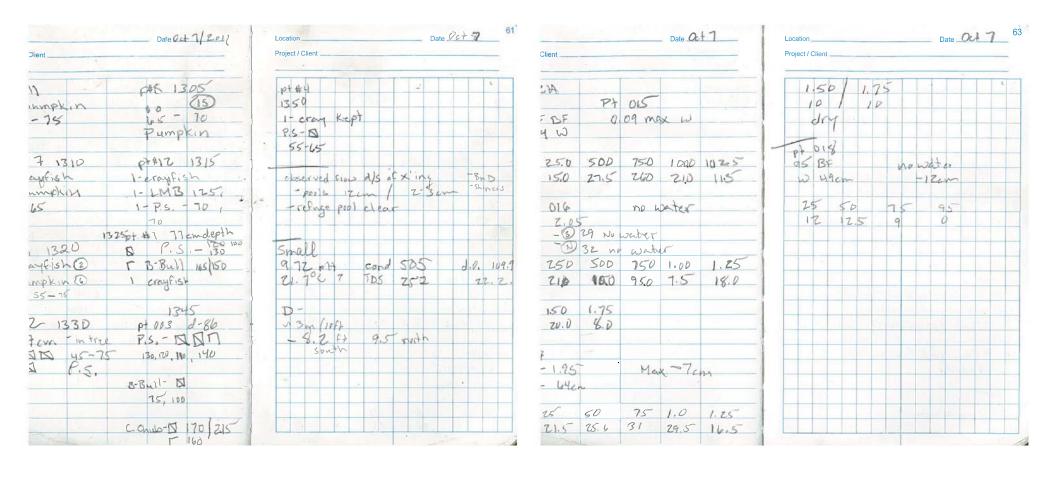


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14W-14A Date 6-10-2011 .	Location Date (1-10-201) 57'	Date	Location Date 0 d 3
Client Bentall.	Project / Client	Client	Project / Client
hrs , cold, light breeze.	pt 10.31 phote 2 hales in bank	2 - 0 05 m dup gensses.	Securi (3n) 58-52 1235 no
ain on Oct 5, 2011	JDS 2He 3 waterline - Holes are 97cm from	- 1155 /1259) - Black in algus	7-1239 2-8148 3 329° 29. 91.5% 18.2 16.0
op Set 0915 -staffgange.	- Hexpr's @ nextr/snalew and	- attached to Cf stump,	Secon - 52-5)
r minney > 09 Z4 pranches Swef staff gange.	Plack minnew talgae adjacent	-Black - AM shade from true, Algae mat on shore	1-984 2 71.26 3-780%
Shire and South	Black mirnon - ne cover - shallow		Bonks and Z. \$134.5
sap - 0932 @ path attached to	or out - in the algae mats		17.9°C 16.5
: Soum along South Shreetine	photo (4) west to trap.		
ex minnew - 0988 imading dubris	pt 009 - 46 cm mide -cT		





BOBO / EAME POINT COUNT (10 MINUTES)

		(1011111011110	,	(1)	
Project Name:	\$ 1 m	·2	Project Number:	14-09,22	2001-5
Date: May 31/	13 Start T	ime: <u>7:15</u>	Observer:	at Merc	
PC Number			sting <u>597524</u>	Northing 48	09851
Temp	Visibility <u><</u>	km Cloud_	15 % Prec	ip yes no	
Sky Code	Wind speed _	<u>haro</u> Wi	nd Direction	NQ.	
General Habitat typ		Hedgerow	Fencelin	ne	Other:
General Vegetation	Type:	80% Forb	+20% rea	White n	waterd the
Vegetation Height	(cm): <u>15-50</u> I	Presence of Litter?:	yes /(no) Describe:_	,	
,		_	_ % grass	% plants	
Species	Age Sex	Behaviour		ì	ing Evidence Codes
None					
					7475000004
				,	
		** · ***			
Other Bird Species	s Observed:		Brown Cowley	i d	
Probable T=Territo Confirmed DD= Dist NAAMP/ Reaufort Sky Codes		entry. NU=Used Nest. NY=You Beaufort Wine	1 Scale	Food/Faecal Sack	- Action
0 = clear (no cloud cover) 1 = parly cloudy (scattered or broken) 2 = cloudy or overcast 3 = sandstorm, duststorm or blowing st 4 = fog, smoke, thick dust, or haze 5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix 8 = showers 9 = thunderstorms		1 = Light air m 2 = Slight bree; 3= Gentle bree; 4= Moderate bt 5= Fresh breez;	e rises vertically (0-2km/hr) ovenent, smoke drifts (3-5) ovenent, smoke drifts (3-5) ovenent, smoke drifts (3-1) ovenent, smoke drifts (6-11) ovenent, smoke leaves rustle (6-11) ovenent, smoke leaves rustle (6-11) ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke leaves ovenent, smoke drifts (3-5) ovenent, smoke dr		

BOBO / EAM	E POI	T COU	NT (10 MINUTES)		4 member of ANN memorans
Project Name:	Bent	all-	Kennedy	Project Number: 1409	22201-EN
Date: May	9	Start Tir	me: 7:35	Observer: Rat	No.C.
PC Number	<u>2</u> Ph	oto No.: _	UTMs: Easti	ng 597461 Northi	ng 4809408
Temp	Vis	ibility <u>c</u>	km Cloud	15 % Precip ye	s (no)
Sky Code 2	Wir	nd speed £	orass moves Wind	Direction from west	-
General Habitat t	ype:	Field	Hedgerow	Fenceline	Other: Wet Meade
General Vegetation	nt (cm):	P		es / no Describe: 970 % grass	
Species	Age	Sex	Behaviour		Breeding Evidence Level Codes
More					
	***************************************				***************************************
			a de la companya de l		
Other Bird Spec	ies Obsery	ved: forned	lark, Red-Win	red BB, Ring-b	iled Gull
Probable T=Te		Anxiety Behaviour. EEggs, AE=Nest co	SM = Singing Male D=Display. P=Pair. N=Nes ntry. NU=Used Nest. NY=Young.	t building. V=Visiting nest FY=Fledged young. FS=Food/Faecal Si	100 ShrallAW
NAAMP/ Beaufort Sky Codes 0 = clear (no cloud cover) 1 = partly cloudy (scattered or brok 2 = cloudy or overcast 3 = sandstorm, duststorm or blowin 4 = fog, smoke, thick dust, or haze 5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix 8 = showers 9 = thunderstorms	en) or variable		Beaufort Wind Sc 0 = calm, smoke ris 1 = Light air mover 2 = Slight breeze, v 3 = Gentle breeze, l 4 = Moderate breeze, s 5 = Fresh breeze, s		



BOBO / EAME POINT COUNT (10 MINUTES)

Project Name:	Ben	tall-	Kennedy	Project Number: 140	9222001-EN
Date: M a	y31/10	Start Tir	ne: 7:50	Observer: Vat Ma	3hv
/***.				ting <u>597<i>830</i></u> North	
Sky Code2_	_ Win	d speed $\frac{Q}{J}$	rass Moseco Wir	nd Direction <u>from We</u>	<u>a</u> t
General Habitat ty	уре:	Field	Hedgerow	Fenceline	Other:
DOS					
General Vegetation	on Type:		Pox	teusel goldenr	od
Vegetation Heigh	t (cm):	60 Pi		yes no Describe: Poo	
Estimated % Gras	s vs. Broa	d-leaved p	lants: <u>95</u>	% grass5	% plants
Species	Age	Sex	Behaviour		Breeding Evidence Level Codes
More					
Control of the Contro					
		Water and the same			

					1
Other Bird Speci	es Observ	⁄ed:	Red wriged 1	B. Spotted	Sandpiper
Probable T=Ter		Anxiety Behaviour. 	SM = Singing Male D=Display, P=Pair, N=I try, NU=Used Nest, NY=You	Nest building. V=Visiting nest 1g. FY=Fledged young. FS=Food/Faeca	1 Sark
NAAMP/ Beaufort Sky Codes 0 = clear (no cloud cover) 1 = partly cloudy (scattered or broke 2 = cloudy or overcast 3 = sandstorm. duststorm or blowing 4 = fog. smoke, thick dust, or haze 5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix 8 = showers 9 = thunderstorms	en) or variable	Segue Committee (March 1960). M	Beaufort Wind 0 = calm. smoke 1 = Light air mo 2 = Slight breez 3= Genle breez 4= Moderate bre 5= Fresh breeze	• • • •	



BOBO / EAM	E POIN	T COUN	(10 MINUTES)	An	nember of MMM GROUP					
Project Name: Bentall Kennely Project Number: 1409 222 001-EN3										
Date: June	11/13		ne: Sisteman Observ	V	n.					
PC Number	PC Number Photo No.: 0670-2 UTMs: Easting 597448 Northing 48098 34									
Temp			km Cloud 60	^	1					
Sky Code	_ Win	d speed	th gusts Wind Direction	on from northeast						
General Habitat ty	ype:	Field	Hedgerow	Fenceline	Other:					
General Vegetation	on Type:	Mostl	y mustard							
Vegetation Heigh	t (cm):	30 Pr	esence of Litter?: yes / no	Describe: dlad	stalks					
			lants:5 % grass	2000 - 100 -						
Species	Age	Sex	Behaviour		Breeding Evidence Level Codes					
None.										
Other Bird Speci	ies Observ	ved:	Red-winged B	lackbool Am	erican Wood					
Cedar h	laxur	ng o	/	/ .						
Probable T=Ter		Anxiety Behaviour, I =Eggs, AE=Nest en		V=Visiting nest Fledged young, FS=Food/Faecal Sack						
NAAMP/ Beaufort Sky Codes 0 = clear (no cloud cover) 1 = partly cloudy (scattered or broke 2 = cloudy or overcast 3 = sandstorm, duststorm or blowing 4 = fog, smoke, thick dust, or haze 5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix 8 = showers 9 = thunderstorms			Beaufort Wind Scale 0 = calm. smoke rises vertically (0-1 = Light air movement, smoke drift 2 = Slight breeze, wind felt on face; 3= Gentle breeze, leaves & twigs in 4= Moderate breeze, small branches 5= Fresh breeze, small trees begin t 6= Strong breeze, large branches in	its (3-5) Leaves rustle (6-11) Leaves rustle (6-11) Leaves rustle (12-19) Leaves rustle (12-30) Leaves rustle (20-30) Leaves rustle (20-30) Leaves rustle (20-30)	;					



BOBO / EAM	E POIN	T COUN	T (10 MINUTES	S)	A member of MMM GROUP
Project Name:	Bent	all-Ke	nnedy	Project Number:	109222001-EN3
Date: June	11/13	Start Tin	ne: 9:20	Observer: Pat	Mohr
PC Number 23	Pho	oto No.:63	UTMs: Ea	asting <u>597502</u> N	Orthing 4209377
Temp	Visi	bility	km Cloud		yes no
Sky Code	_ Win	d speed	4 w	ind Direction from Q	45
General Habitat ty	ype:	Field	Hedgerow	Fenceline	Other:
Grass with	the fe	w For	ubs .		
General Vegetation	on Type:	R	ped Canary	Grass teasel	Lumey
Vegetation Heigh	t (cm): 36	2-60Pr	esence of Litter?:	yes / no Describe:	gass
Estimated % Gras	s vs. Broa	d-leaved p	lants: 80	_ % grass	% plants
Species	Age	Sex	Behaviour		Breeding Evidence Level Codes
None					
		-		· 8	
Other Bird Speci	es Observ	red:	Let Bed	wriged Black	bird, European
Janung	1 (70/5	e wim	u-lawed of	uer)	, ,
Probable T=Ter		Anxiety Behaviour, I =Eggs, AE =Nest en	SM = Singing Male D=Display, P=Pair, N try, NU=Used Nest, NY=Y	N=Nest building. V=Visiting nest oung, FY=Fledged young, FS=Foot	<i>I</i> /Faecal Sack
NAAMP/ Beaufort Sky Codes 0 = clear (no cloud cover) 1 = partly cloudy (scattered or broke 2 = cloudy or overcast 3 = sandstorm, duststorm or blowing 4 = fog, smoke, thick dust, or haze 5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix 8 = showers 9 = thunderstorms	en) or variable		Beaufort Wi 0 = calm, sm 1 = Light air 2 = Slight bre 3 = Gentle bre 4 = Moderate 5 = Fresh bree		

Project Number: 14092 Observer: Pat N jacent neadow ing 597846 Northin	ecoplans A member of MMM GROUP 2200 EV3 16W g 4809196
95 % Precip yes	no
d Direction from north	ast
Fenceline	Other:
letch + Goldensod	
es / no Describe: 9705	305
<i>_</i>	plants
	Breeding Evidence Level Codes

Dutc.		or or or or	(Caraly) The Airea	at was a divid	LOVI
PC Number	Pho	oto No.:	5 (P217) This is adjace 578 UTMs: Easting	597846Northin	g 4809196
Temp / 90	C Visi	bility	2_km Cloud_91	5% Precip yes	no
Sky Code	_ Win	d speed _	Wind Dir	rection from north	ast
General Habitat ty		Field		Fenceline	Other:
Grass					
General Vegetation	on Type:	Fescus	2+ Brome; Veta	h + Goldensod	
Vegetation Heigh	t (cm):	<u>60</u> P	resence of Litter?: ves /	no Describe: 9716	325
Estimated % Gras	ss vs. Broa	d-leaved p	olants:	rass	plants
Species	Age	Sex	Behaviour		Breeding Evidence Level Codes
None.					
		-			
			-		
		2			
Other Bird Speci	ies Observ	ved:	na Sharman	Rod-Lynaed	Blackhild
6n	eat Be	he He	ron, Wood	Suck & with yo	oung in pond (P.

SM = Singing Male

NY=Young,

Beaufort Wind Scale
0 = calm, smoke rises vertically (0-2km/hr)
1 = Light air movement, smoke drifts (3-5)
2 = Slight breeze, wind felt on face; leaves rustle (6-11)

6= Strong breeze, large branches in motion (40-50)

A=Anxiety Behaviour, D=Display, P=Pa NE=Eggs, AE=Nest entry, NU=Used Nest,

N=Nest building, V=Visiting nest Young, FY=Fledged young, FS=Food/Faecal Sack

2 = Gentle breeze, leaves & twigs in constant motion (12-19)
4 = Moderate breeze, small branches moving, raises dust & loose paper (20-30);
5 = Fresh breeze, small trees begin to sway (31-39)

(10 MINUTES)

Start Time: 9145

BOBO / EAME POINT COUNT

Breeding Evidence Level: Possible ---Probable ---

NAAMP/ Beaufort Sky Codes

5 = drizzle or light rain 6 = rain 7 = snow or snow/rain mix

8 = showers 9 = thunderstorms

0 = clear (no cloud cover) 1 = partly cloudy (scattered or broken) or variable 2 = cloudy or overcast 3 = sandstorm, duststorm or blowing snow 4 = fog, smoke, thick dust, or haze

Confirmed---

SH = Suitable Habitat

T=Territory, DD= Distraction.



BOBO / EAME POINT COUNT (10 MINUTES)

Project Name:	Bental	1-Ke	nedy	Project Numbe	r: <u>1409 z</u> .	22 001-EN3
			ne: <u>7:45</u>			
PC Number	Pho	oto No.: 13	334 UTMs: East	ing 5975	24 Northin	<u>4809851</u> st
			km Cloud_			
			2 gusts Win			Jr
General Habitat ty	ype:	Field	Hedgerow	Fer	celine	Other:
			- mustar			
			esence of Litter?: y			
Estimated % Gras	s vs. Broad	d-leaved p	lants:5	% grass	75 %	plants
Species	Age	Sex	Behaviour			Breeding Evidence Level Codes
NONE						
				(4		
'						
Other Bird Speci	es Obșerv	ed:	deer tracke	, MODO	flyove	
Probable T=Ten	Distraction, NE-	Anxiety Behaviour, I EEggs, AE=Nest en	ry, NU=Used Nest, NY=Young Beaufort Wind S 0 = calm, smoke t 1 = Light air mov 2 = Slight breeze, 3 = Gentle breeze, 4 = Moderate bree 5 = Fresh breeze, 5		g, FS=Food/Faecal Sack (6-11) tion (12-19) ses dust & loose paper (20- 9)	

8 = showers 9 = thunderstorms



BOBO / EAME POINT COUNT (10 MINUTES) Project Number: Start Time: 8:10 Observer: Photo No.: 1136-7 UTMs: Easting 597461 Northing 480948 Visibility 0 km Cloud_ Precip L gusts Wind Direction Wind speed_ Sky Code Hedgerow General Habitat type: Fenceline Field General Vegetation Type: Vegetation Height (cm): ____________ Presence of Litter?: yes / no Describe: 40 % plants Estimated % Grass vs. Broad-leaved plants: _____ 60 % grass Breeding Evidence Sex Species Behaviour Age Level Codes NONE Other Bird Species Observed: Breeding Evidence Level: SH = Suitable Habitat SM = Singing Male risplay, P=Pair, Possible ---Probable ---A=Anxiety Behaviour, D=Display, N=Nest building, T=Territory, V=Visiting nest NE=Eggs, AE=Nest entry, NU=Used Nest, NY=Young, Confirmed---DD= Distraction, FY=Fledged young, FS=Food/Faecal Sack

NAAMP/ Beaufort Sky Codes 0 = clear (no cloud cover)

1 = partly cloudy (scattered or broken) or variable

2 = cloudy or overcast

3 = sandstorm, duststorm or blowing snow

4 = fog, smoke, thick dust, or haze 5 = drizzle or light rain

9 = thunderstorms

6 = rain

7 = snow or snow/rain mix 8 = showers

Beaufort Wind Scale 0 = calm, smoke rises vertically (0-2km/hr)

1 = Light air movement, smoke drifts (3-5) 2 = Slight breeze, wind felt on face; leaves rustle (6-11)

3= Gentle breeze, leaves & twigs in constant motion (12-19)

4= Moderate breeze, small branches moving, raises dust & loose paper (20-30); 5= Fresh breeze, small trees begin to sway (31-39)

6= Strong breeze, large branches in motion (40-50)



BOBO / EAME POINT COUNT (10 MINUTES) 9 222 001-FN3 Project Number: Start Time: 0:30 Observer: Photo No.: 1339-41 UTMs: Easting 597830 Northing 4809190 Visibility Oll km Cloud 100 % Precip yes (no Wind speed ___ Wind Direction _ Hedgerow General Habitat type: Fenceline Other: General Vegetation Type: Spme, O Presence of Litter?: yes / no Describe:_ Vegetation Height (cm): __ Breeding Evidence Sex Species Age Behaviour Level Codes Other Bird Species Observed: Breeding Evidence Level: Possible ---Probable ---SH = Suitable Habitat SM = Singing Male N=Nest building, V=Visiting nest Young, FY=Fledged young, FS=Food/Faecal Sack A=Anxiety Behaviour, D=Display, P=Pa NE=Eggs, AE=Nest entry, NU=Used Nest, T=Territory, Confirmed---DD= Distraction. NY=Young, NAAMP/ Beaufort Sky Codes

0 = clear (no cloud cover) 1 = partly cloudy (scattered or broken) or variable

2 = cloudy or overcast

3 = sandstorm, duststorm or blowing snow

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6 = rain

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8 = showers 9 = thunderstorms

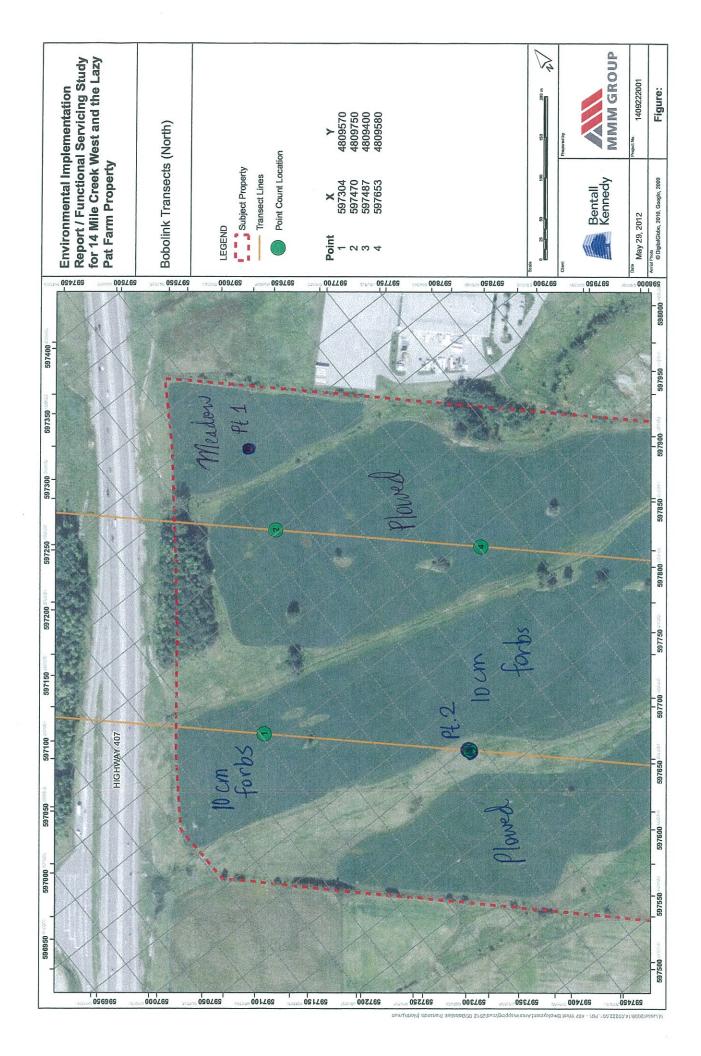
Beaufort Wind Scale

= calm, smoke rises vertically (0-2km/hr)

1 = Light air movement, smoke drifts (3-5) 2 = Slight breeze, wind felt on face; leaves rustle (6-11)

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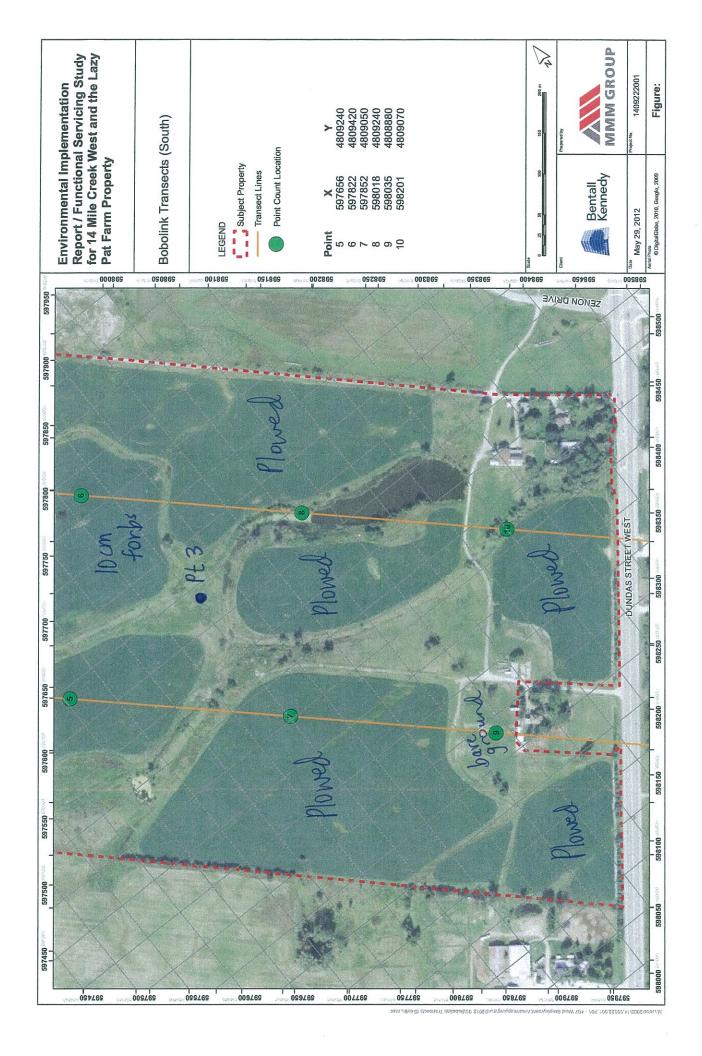


Figure 1. Bat Survey Approach



Aerial Image Source: http://maps.oakville.ca/gxmaps/

Building

Survey station

 Survey No.
 Buildling No.

 1
 1

 2
 2, 3

 3
 4, 5

 4
 1

 5
 6, 2

5 6 5 6

Figure 1. Bat Survey Approach



Survey station

Building

Survey No. Buildling No.

1 1 1
2 2,3
3 4,5
4 1
5 6,2
6 3,4
7 5,6

Aerial Image Source: http://maps.oakville.ca/gxmaps/

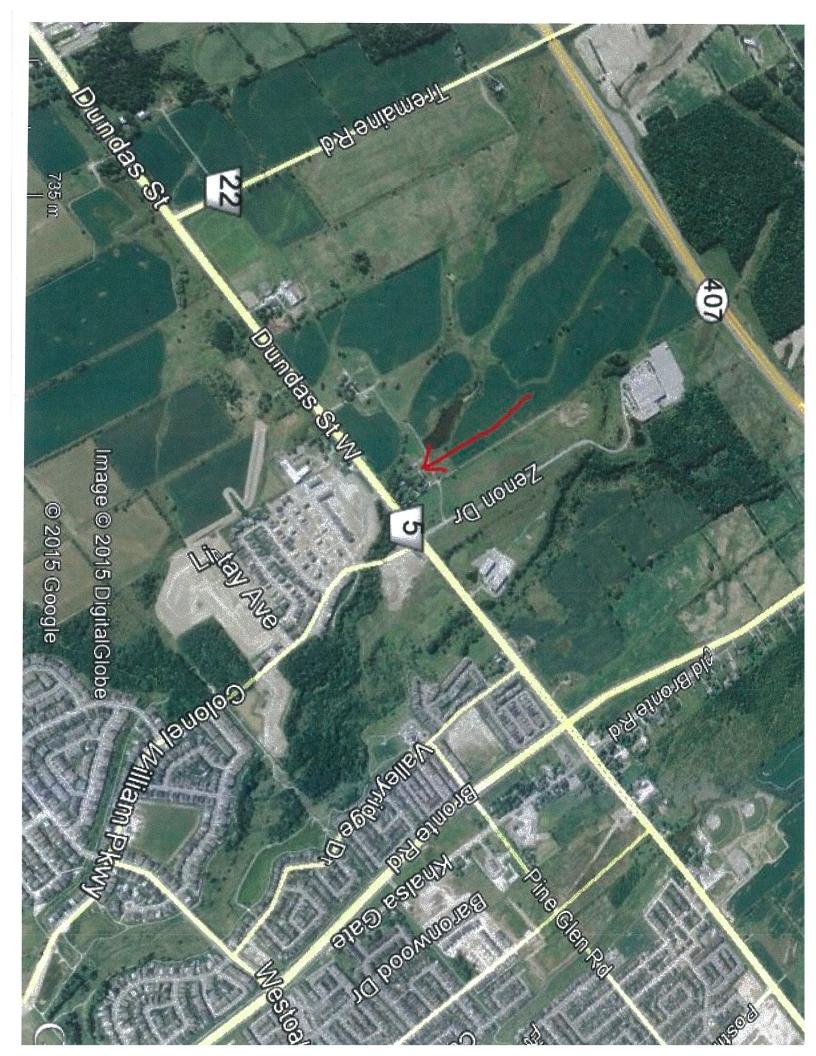
Figure 1. Bat Survey Approach



Building

Survey station

7	6	5	4	w	2	1	Survey No.
5,6	3,4	6, 2	Ľ	4, 5	2, 3	1	Buildling No.



	MMM	GROUP	
Droject Nu	mahan.	149777	

Maternity Roost Exit Survey
Observers: _∧(C

Page 1 of 2 Date: <u>Tune 5, 2015</u>

Survey End Time (HH:MM) 22:30 Survey Start Time (HH:MM): 18:57 WEATHER CONDITIONS Sky Code* Start: End: Wind Code* Start: 2 End: Temperature (C) Start: End: 14 **OBSERVATIONS OF EXITING BATS** Target bats Time of cavity / observed observation Notes on flight path and behaviour exiting (tally opening (hh:mm) or #) appeared at centre of bein and flew o 21:36 West

BATS OF	SSERVED IN GENER	AL AREA (NOT SEEN EXITING)
tally or #	Time of observation (hh:mm)	Notes on flight path and behaviour
1	21:26	Flying across face towards Dundas / swring
-		



Maternity Roost Exit Survey

Page 2 of 2 Date:

Project Number: Observers:

OBSERVATIONS OF EXITING BATS (continued bats Time of Target observed observation Notes on flight path and behaviour cavity / exiting (tally (hh:mm) opening# or #)

(tally or #)	Time of observation (hh:mm)	Notes on flight path and behaviour

moderate amount of highway noise

Beaufort Wind Scale

0 = calm, smoke rises vertically (0-2km/hr)

1 = Light air movement, smoke drifts (3-5) 2 = Slight breeze, wind felt on face; leaves rustle (6-11) 3= Gentle breeze, leaves & twigs in constant motion (12-19)

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4 = fog, smoke, thick dust, or haze

5 = drizzle or light rain

6 = rain

7 = snow or snow/rain mix

8 = showers

9 = thunderstorms

MMM GR

MMM GROUP

Project Number: 1490222

Observers: C. Malcolm

Lazy Pat

Survey Start Time (1990)

Survey Start Time (HH:MM): 26:57 Survey End Time (HH:MM) 22:27

WEATH	ER CONDITION	IS							
Sky Code*	Start: 2 End	Wind Co	de* Start: 2 End: 2 Temperature (C) Start: 16 End:						
	ATIONS OF E	XITING BATS							
Target cavity / opening #	bats observed exiting (tally or #)	Time of observation (hh:mm)	n Notes on flight path and behaviour						
5	• ()	21:07	Flew S, Existed Top Window						
S	w (1).	21:12	Flew dan from Top Window, entered into docrucy						
5	.0	21:18	Thew out of top wintow to peak of basin, then south.						
S	0	21:26	Exited Top Window, Rew South						
5	·().	21:31	Exited door in frewood pilo, flew South						
-		· 							
BATS OF		ENERAL ARE	A (NOT SEEN EXITING)						
tally or #	Time of observa (hh:mm)		on flight path and behaviour						
(1)	21:2	Circle	Circled Mic,						
· 0 21:37 Ba			x flew orand Mic						
	21:4	3 Bay	Man Rom E to West is Steet above grand						

ANN W	MM	GRO	UP
-------	----	-----	----

ZANNE MIMI GI	ROUP Maternit	y Roost Exit	Survey	Page 2 of	2
Project Number: 1	490888	_Observers:	C. Malale	Date:	Junel
ARREDVATIONS.	OF EVITING BATS /66	(atinuad)			

OBSERV	ATION	4S OF E	XITING BAT	S (continued)
Target observed exiting (tally or #)		Time of observation (hh:mm)	Notes on flight path and behaviour	
	~~~			
-				
BATSOB	SIERV			REA (NOT SEEN EXITING)
(tally or #)		Time of observa (hh:mm	tion	Notes on flight path and behaviour
-		·		
		- 1, 1,		
Notes:		/ ( n/	· Jacklin	to the south. #ECO 041A

Notes: - Head level of traffic to the south.	# Ecc	0414
- Many birds flying avoid, I honded on Mic/solup@	21:27	MIC-CH1
- 5 bats observed exiting the barn with 3 observed Plyi	ng arand.	
- most bats exiting from Top Window	9	

Beaufort Wind Scale

0 = calm, smoke rises vertically (0-2km/hr)

1 = Light air movement, smoke drifts (3-5)

2 = Slight breeze, wind felt on face; leaves rustle (6-11)

3= Gentle breeze, leaves & twigs in constant motion (12-19)

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Beaufort Sky Codes
0 = clear (no cloud cover)
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		: 1490		Watern 2	nity Roosi Observ	t Exit Su vers:  る	irvey ሥ,∦,	C, EM, J	age_	of _c Date:	Jan	10 4	
		Benta	11/La	izy Pat	F70015	7	CH	C, EM, J	<i>V</i> ₂			ruck	
Survey St	tart Tin	me (HH:MI NDITION	M): 🚜	29 <b>9</b> 01)	∬Survey E	End Time	(HH:MN	(I) 9919 X			S	1000	
Sky Code*	Name and Part of the Part of t			Wind Code	e* Start: 2	) Enc	d: 3	Temperature	(C)	Start: \(	5°C 1	Fnd: \	4°C
OBSERV				CONTRACT ASSESSMENT AS					(-)			1.	4
Target cavity / opening #	bats obsei	erved ng (tally	Time	of rvation	Notes on	flight pat	th and b	ehaviour	D B	A		3	
		i i	7	.4	1.6			, , , 1964 -					
, , , , , , , , , , , , , , , , , , ,						, , , , , , , , , , , , , , , , , , ,		State of Sugar					
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BATS OF	SERV	VED IN G		AL AREA	A (NOT SE	EEN EXI	TING)						
tally or #			ition )		n flight pat								
\		30:	) 5	Fleu	s eas	+ fr	om.	south	Sida	e 0	F + 1	rel	Darn
								-			101		
						<u> </u>							

	MMM GROUP	
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Maternity Roost Exit Survey

Page of of C Observers: JM, CM NC Project Number: 149022

OBSERV	ATION	IS OF E	XITING BAT	'S (continued)
Target cavity / opening #	bats		Time of observation (hh:mm)	
BATSOB	SERV	ED IN G	ENERAL A	REA (NOT SEEN EXITING)
(tally or #)		Time of observa (hh:mm	ition	Notes on flight path and behaviour
		January		

Notes: Barn cat present - Drey tree frage impresses in area east at the brain

# **Beaufort Wind Scale**

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- 5 = drizzle or light rain
- 6 = rain
- 7 = snow or snow/rain mix
- 8 = showers
- 9 = thunderstorms

	MIMIM G	ROUP
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Page	/of		, ,		
	Date:	June	4,	20	15

MMM GROUP

Project Number: 1409 0222

Observers: JE

Lazy-Pat

Survey Start Time (HH:MM): 20:57

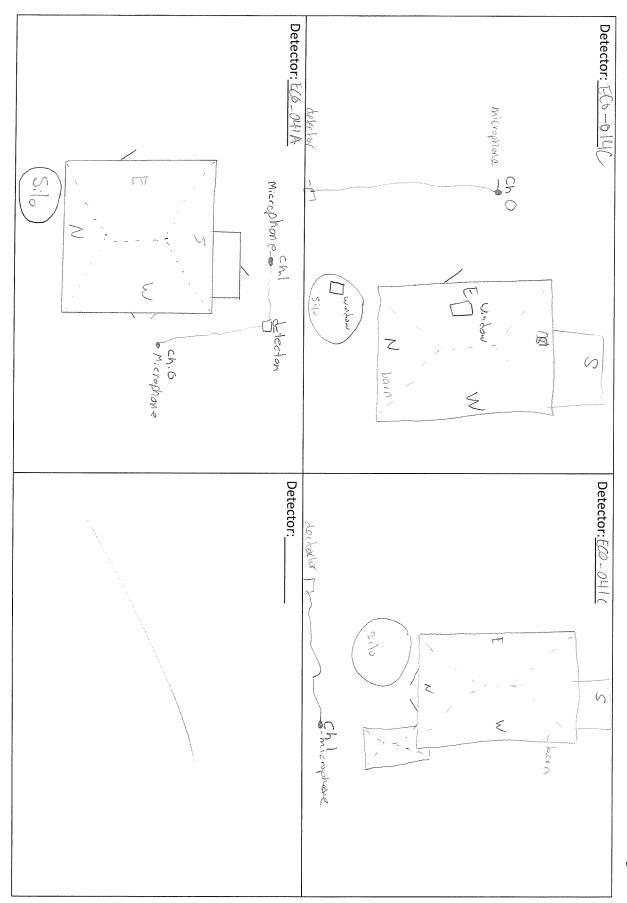
Survey End Time (HH:MM) 22:37

WEATHE			IS		
Sky Code	Start:	니 End	: 1	Wind Cod	ode* Start: 2 End: / Temperature (C) Start: 16% End: 14%
OBSERV	'ATIO	NS OF E	XITING	BATS	
Target cavity / opening # ⊂N ~ ₩)	bats Time		rvation	Notes on flight path and behaviour	
		a contract of the contract of	21:6	16	- Leaded west - exited large barn door Leaded north - from small barn.
N	1 )		21:37		Lated north - from small barn.
_					
BATIS OF	SEFN		ENER	AL ARE	EA (NOT SEEN EXITING)
tally or #	Time of observa (hh:mm			Notes o	on flight path and behaviour
***************************************					
		***			
		····			
					·



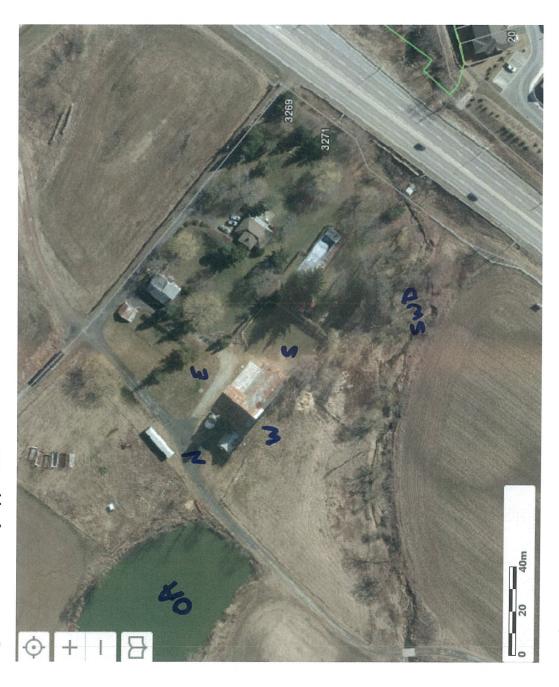
# BAT DETECTOR DEPLOYMENT SUMMARY DATASHEET

Site Sketches – show the position of each deployed detector and its microphone(s) relative to target trees/cavities and surroundings



# Bentull - Barn monitaring lacations

Figure 1. Bat Survey Approach



Aerial Image Source: http://maps.oakville.ca/gxmaps/