Action: Record dimensions of the pipe or trench and its elevation above the stream bed. Describe the pollutant smell colour, appearance (oily film, sudsy, etc.) if the pipe is discharging actively. DO NOT TOUCH IT!! Describe whether the pipe is on the left or right bank (facing downstream).

Livestock Access

Background: Livestock that have access to the stream can cause bank erosion, damage fish habitat, and contaminate the water. The most common situations are where livestock graze along unfenced parts of the stream and where livestock cross the stream at a trail crossing or watering ramp.

Action: Measure the affected length and width of the stream, and note whether the left or right bank (facing downstream) is affected. Estimate the number and type of livestock with access to the area.

Water Withdrawal

Background: There may be an intake pipe or diversion ditch that draws water from the stream for agricultural, industrial, or domestic purposes. The pipe or ditch may be screened or unscreened. Screened pipes with openings larger than 2.5 mm and unscreened pipes allow juvenile fish to pass through, resulting in fish mortalities.

Action: Record the dimensions of the intake structure, pipe, or diversion ditch. If possible, find out where the water goes (e.g., to irrigate a nearby field). Note whether the pipe is screened or unscreened. Measure the size of any mesh. Record whether the left or right bank (facing downstream) is affected.

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 W. Hastings Street, Station 321, Vancouver, B.C. V6B 5G3
or fax to (604) 666-0292

Stream Location and Conditions

(use a new data sheet for each stream section surveyed) **Module 1**

Stream Name/Nearest Town:		Date:
		Watershed code
Organization Name:		
Contact Name:		Phone #
Crew Names:		Stream Segment #
		Stream Section #
		Length Surveyed

Survey Start Point (when applicable)

Mapsheet number_____ Type_____ Scale_____
Start Point Location (distance from known stream landmark, directions to start)
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (>2.5 cm in 24 hr) ‘ rain on snow
Water turbidity (cm visibility) _____ Temperature °C (leave thermometer 2 min.) air _____ water _____
Measurements taken every _____ m
Bankfull Channel width _____(m) Average depth _____(m)
Wetted Channel width _____(m) Average depth _____(m)

Survey End Point (when applicable)

Mapsheet number_____ Type_____ Scale_____
End Point Location (distance from known stream landmark)
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (>2.5 cm in 24 hr) ‘ rain on snow
Water turbidity (cm visibility) _____ Temperature °C (leave thermometer 2 min.) air _____ water _____
Measurements taken every _____ m
Bankfull Channel width _____(m) Average depth _____(m)
Wetted Channel width _____(m) Average depth _____(m)

(Start Point) First and Last Measurements taken 0.1 m from streambank edge (End Point)

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Take measurements every 0.5m in streams less than 5m wide, every 1m in streams 5 to 15m

Page ___ of ___

Stream Reconnaissance Field Data Sheet

. . . Additional Feature Information **Module 1**

Stream Name/Nearest Town:	Date
	Watershed code
Organization Name:	
Contact Name:	Phone #
Stream Segment #	
Stream Section #	

Feature Information

Feature #	Photo #	*m* upstream of last feature	Feature Description and Size (see App. 3)	Stream-bank (L or R)	Adjacent Land Use *	Actions/Comments/ Water Quality Concerns

* *Adjacent Land Use Codes:* **U***ndisturbed,* **A***griculture,* **F***orestry,* **R***esidential,* **P***arks,* **C***ommercial,* **I***ndustrial*

Note whether feature is on the left or right bank (facing *downstream*)

Stream Reconnaissance Field Data Sheet

Feature Information con't — Module 1

Feature #	Photo #	*m* upstream of last feature	Feature Description and Size (see App. 3)	Stream-bank (L or R)	Adjacent Land Use *	Actions/Comments/ Water Quality Concerns

* *Adjacent Land Use Codes:* **U***ndisturbed,* **A***griculture,* **F***orestry,* **R***esidential,* **P***arks,* **C***ommercial,* **I***ndustrial*

General comments on this section of the stream

Page ____ of ____

APPENDIX 3 *(revised)* Module 1

Identifying and Describing Features

Note whether feature is on the left or right bank (facing *downstream*)

Stream Feature Description Checklist

BANK EROSION

slumping bank, undercut, upslope slide, other

- Measure length, height and slope.

GARBAGE

commercial/industrial source, residential/recreational source, other

- Measure length, type and quantity.

SIDE CHANNEL

dry channel, flowing channel, other

- Measure length, depth and width of wetted area. Take temperature readings.

LACK OF RIPARIAN VEGETATION

human induced, natural phenomenon, other

- Measure length, width and slope.

WETLAND

bogs, marshes, swamp, pond, other

- Measure length, depth and width. Take temperature readings.

WATER BODY

Tributary, wetland, ditch, other

- Measure bankfull and wetted channel widths and depths, (Optional: compass bearing 10m upstream of confluence, and 25m or at major bends. Measure gradient.)
- In water body - take temperature readings 2m upstream of confluence.
- In main stem - take temperature readings 2m upstream and 2m downstream of confluence.

ENHANCEMENT

log/rock weir, fishway

- Measure length and width, and height of structure to fish access, plunge pool depth.

ENHANCEMENT (con't)

riparian planting, woody debris placement, spawning gravel placement

- Measure length and width

incubation box/hatchery

- Measure length, width and height

constructed pond/side channel

- Measure length, width and depth. Take temperature.

boulder cluster

- Measure length and width and approximate size of boulders.

ARTIFICIAL MODIFICATION

dam

- Measure length, width and height of structure, and depth of plunge pool.

dredging, channelization, retaining wall, instream crossing, fence

- Measure length and width.

bridge

- Measure length and width, height from substrate to bridge deck, depth of water.

culvert

- Measure height/width or diameter - height from substrate to bottom of structure - if flowing, temperature in flow. In main stem - 2m upstream and 2m downstream.

rip-rap

- Measure length, width, slope and approximate size of material.

other

- Measure length, width and height

APPENDIX 3 *(revised)* **Module 1**

OBSTRUCTION

culvert

- Measure height/width or diameter - height from substrate to bottom of structure, depth of water at base - if flowing, temperature in flow. In main stem - 2m upstream and 2m downstream.

log jam

- Measure length, width and vertical height from substrate to top of jam.

dam

- Measure length, width and vertical height from substrate to top, depth of water at base.

beaver dam

- Measure length, width and vertical height from substrate to top, depth of water at base.

falls, cascade,canyon

- Measure length, width and vertical height and slope, depth of water at base.

fence

- Measure length, vertical height, height from substrate to bottom of fence, depth of water at base.

bridge

- Measure length and width, height from substrate to bridge deck, depth of water.

DISCHARGE PIPE

septic effluent

- Measure height/width/diameter. Height from substrate to bottom of pipe, depth of water.
- DO NOT TOUCH!

industrial outfall

- Measure height/width/diameter. Height from substrate to bottom of pipe, depth of water.
- DO NOT TOUCH!

DISCHARGE PIPE (con't)

tile drain

- Measure height/width/diameter. Height from substrate to bottom of pipe, depth of water. If discharging, take temperature in flow, then in main stem, 2m upstream and 2m downstream.

storm drain

- Measure height/width/diameter. Height from substrate to bottom of pipe, depth of water. If discharging, take temperature in flow, then in main stem, 2m upstream and 2m downstream.

trench

- Measure length/height/width.
- If discharging, take temperature in flow, then in main stem, 2m upstream and 2m downstream.

LIVESTOCK ACCESS

streamside grazing

livestock crossing

- Measure affected length and width of stream.

WATER WITHDRAWAL

screened intake

- Measure length and width of intake and mesh size.

unscreened intake

- Measure length and width of intake.

Module 10 contains specific information about increasing community awareness and working with the media.

References:

- Anon. 1993. *Standard Methodology for conducting Watershed Analysis.* Section for Fish Habitat. Washington Forest Practices Board. Wash. State Dept. of Natural Resources, Olympia, WA.
- Anon 1994. *Stream Inventory Manual* (Draft Version). Prepared for Fisheries Branch, B. C. Ministry of Environment, Lands, and Parks and Department Fisheries and Oceans, Canada.
- Harrelson, C., C. Rawlins, and J. Potyondy. 1994. *Stream Channel Reference Sites: An Illustrated Guide to Field Technique.* Gen. Tech. Rep. RM-245. Fort Collins CO, US Dept. Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station. 61pp.
- Newbury, R. W. and M. N. Gaboury. 1994. *Stream analysis and Fish Habitat Design.* Published by Newbury Hydraulics Ltd., Gibsons, B.C. 256 pp.
- Plafkin J., *et al.* 1989. *Rapid Bioassessment Protocols for Use in Streams and Rivers.* U.S. Environmental Protection Agency / 444 / 4-89-001. Washington, DC.
- Rabe, F. W. 1992. *Streamwalk II: Learning How to Monitor our Streams.* Idaho Water Resources Research Institute, Univ. Of Idaho. 61 pp.
- Schuett-Hames, D., A. Plues, L. Bullchild, and S. Hall. 1994. *Timer-Fish-Wildlife Ambient Monitoring Program Manual.* Northwest Indian Fisheries Commission, Washington State.

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 W. Hastings Street, Station 321, Vancouver, B.C. V6B 5G3
or fax to (604) 666-0292

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name/Nearest Town:		Date
		Watershed code
Organization Name:		
Contact Name:		Phone #
Crew Names:		Stream Segment #
		Stream Section #
		Length Surveyed

Upstream End Point

Mapsheet number_____ Type_____ Scale_____
Location (distance from known stream landmark, directions to benchmark)
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (<2.5 cm in 24 hr) ‘ rain on snow
Water turbidity (cm visibility) _____ Temperature ^{o}C (leave thermometer 2 min.) air _____ water _____
Measurements taken every _____ m
Bankfull Channel width _____(m) Average depth _____(m)
Wetted Channel width _____(m) Average depth _____(m)

Downstream End Point

Mapsheet number_____ Type_____ Scale_____
Location (distance from known stream landmark, directions to benchmark)
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (<2.5 cm in 24 hr) ‘ rain on snow
Water turbidity (cm visibility) _____ Temperature ^{o}C (leave thermometer 2 min.) air _____ water _____
Measurements taken every _____ m
Bankfull Channel width _____(m) Average depth _____(m)
Wetted Channel width _____(m) Average depth _____(m)

(Upstream) First and Last Measurements taken .1 m from streambank edge (Downstream)

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Take measurements every 0.5m in streams less than 5m wide, every 1m in streams 5 to 15m

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name	Date
Organization Name	Stream Segment # Section #
	Map Sheet #

STEP 1. BENCHMARK LOCATION

Directions to benchmark

STEP 2. CROSS-SECTIONAL SURVEY

Location relative to benchmark	Photos taken: (yes or no)
Bankfull channel width (m)	Average bankfull depth (m)
Wetted channel width (m)	Average wetted depth (m)
Measurements taken every _____ metres Cross-sectional plot	

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

STEP 3. STREAM DISCHARGE

Cross-sectional area of wetted stream (m^2) _____ **x** _____ **=** _____**(m^2)**
wetted width **average wetted depth**

Average Time (sec)
[_____ + _____ + _____ + _____ + _____ **]** = _____ **÷** **5 =** _____
trial 1 **trial 2** **trial 3** **trial 4** **trial 5** **total trials** **Average Time (sec)**

Average Velocity (m/sec) _____ **÷** _____ **=** _____
length (m) **average time (sec)** **Average Velocity (m/sec)**

Average Stream Discharge (m^3/sec) _____ **x** _____ **x** **0.8** **=** _____
cross sectional area (m^2) **average velocity (m/sec)** **correction factor** **Discharge (m^3/sec)**

send the data to the Streamkeepers Database

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2**

Stream Name	Date
Organization Name	Stream Seg # Section#
	Map Sheet #

STEP 4.1 LONGITUDINAL SURVEY, MEASUREMENTS

Length of survey site (minimum 12 times the bankfull width) Minimum _____ (m) Actual_____(m)	Photos (yes, no)
Upstream survey boundary (m upstream of benchmark) Minimum _____ (m) Actual _____ (m)	
Downstream boundary (m downstream of benchmark) Minimum _____ (m) Actual _____ (m)	

* distance **upstream** (Up) of benchmark

habitat unit type (pool or riffle)	bottom of habitat unit*	top of habitat unit*	length of habitat unit (m)	% slope	Photo Frame #
	Up	Up			
	Up	Up			
	Up	Up			
	Up	Up			
	Up	Up			
	Up	Up			
	Up	Up			

* distance **downstream** (Dn) of benchmark in metres

habitat unit type (pool or riffle)	top of habitat unit*	bottom of habitat unit*	length of habitat unit (m)	% slope	Photo Frame #
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			
	Dn	Dn			

send the data to the Streamkeepers Database

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2: (con't)**

Stream Name	Date
Stream segment and section #'s	

STEP 4.2 LONGITUDINAL SURVEY, HABITAT QUALITY

1. Streambed material

Collect 25 samples

1	8	15	22
2	9	16	23
3	10	17	24
4	11	18	25
5	12	19	
6	13	20	
7	14	21	

% fines (<0-2cm) - ladybug size and smaller

% gravel(0.2-5 cm) - ladybug to tennis ball

% cobble (5·25cm) - tennis ball to basketball

% boulder (>25cm) – bigger then a basketball with definable edges

% bedrock - slab of rock

Fines = _____%
Gravel = _____%
Cobble = _____%
Boulder = _____%
Bedrock = _____%
Cobble + Boulder
Total = _____%

2. % embeddedness - cover of gravel and cobble by fine sediment _____%

3. Instream cover

LWD

_____

Rooted cutbank

_____ # pieces LWD
\+ _____ # rooted cutbanks
= _____ ÷ _____ = _____
total cover (length of reference site ÷bankfull width) instream cover

4. Percent pool habitat

survey site slope

total length of reference site (m)

total length of pools (m)

% pool habitat

5. Off channel habitat (if present, describe habitat type, size, and whether it is seasonal or year-round)

description

PRESENT

ABSENT

6. Bank stability (left or right bank facing downstream)

# of sites and length of bank affected (m)

	LEFT BANK	RIGHT BANK
# active bank erosion	_____	_____
bank stabilization	_____	_____
# slides reaching the channel	_____	_____

7. Length of bank with no vegetation (m)

LEFT BANK _____ RIGHT BANK _____

8. Overhead canopy

% bankfull channel covered by overhanging branches

9. Riparian zone

type and amount of vegetation

# of channel widths _____

coniferous trees	none ❑ few ❑ many ❑
deciduous trees	none ❑ few ❑ many ❑
shrubs	none ❑ few ❑ many ❑
grasses	none ❑ few ❑ many ❑

Adjacent land use and impacts

Advanced Stream Habitat Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 2 (con't)**

Stream Name	Date
Stream segment and section #'s	

STEP 5 HABITAT ASSESSMENT ***(the score in bold, estimate a value within the range listed)***

Characteristic	Results	Good	Acceptable	Marginal	Poor	Score
1: Streambed material:		**15 - 20**	**10 - 15**	**5 - 10**	**0 - 5**	
% boulder and cobble		50%	30-50%	10-30%	<10%	
2: Embeddedness:		**15 - 20**	**10 - 15**	**5 - 10**	**0 - 5**	
		25–0%	50-25%	75-50%	>75%	
3: Instream cover:		**15 - 20**	**10 - 15**	**5 - 10**	**0 - 5**	
		>3	2 to 3	1 to 2	<1	
4: % Pool Habitat		**11 - 15**	**7 - 11**	**3 - 7**	**0 - 3**	
<2% stream slope		>60% pool	50-60%	40-50%	<40%	
2-5% stream slope		>50% pool	40-50%	30-40%	<30%	
>5% stream slope		>40% pool	30-40%	20-30%	<20%	
5: Off-channel habitat: ponds, side channels with protection from flood flows		**11 - 15** year round, good protection	**7 - 11** seasonal, good protection	**3 - 7** seasonal, minimal protection	**0 - 3** little or none, no protection	
6: Bank stability		**11 - 15**	**7 - 11**	**3 - 7**	**0 - 3**	
stability		stable	moderately stable	moderately unstable	unstable	
evidence of erosion or bank failure ***(see note 1)***		none	some	some	lots	
7. Bank vegetation: % stream bank covered by vegetation		**8 - 10** >90%	**5 - 8** 70-90%	**2 - 5** 50-70%	**0 - 2** and <50%	
8. Overhead canopy: % bankfull channel overhung by trees and shrubs		**8 - 10** >30%	**5 - 8** 20-30%	**2 - 5** 10-20%	**0 - 2** 0-10%	
9. Riparian zone:		**8 - 10**	**5 - 8**	**2 - 5**	**0 - 2**	
# bankfull channels wide		2 or more	1 to 2	<1	0	
trees and shrubs		abundant on whole floodplain	good species mix	common, few species	sparse or absent	
TOTAL SCORE		**102 - 135**	**66 - 102**	**30 - 66**	**0 - 30**	

Note 1: The evidence of erosion or bank failure changes from **Good** (intact banks) to **Acceptable** (healed or banks stabilized) to **Marginal** (active erosion or extensive bank stabilization) to **Poor** (many actively eroding areas or upslope slides reaching channel).

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 *W. Hastings Street, Station 321, Vancouver, B.C. V6B* 5G3
fax to (604) 666-0292

Stream Location and Conditions

(use a new data sheet for each stream segment surveyed) **Module 3**
(see Module 1 for additional information)

Stream Name/Nearest Town	Date
	Watershed code
Organization Name	Stream Segment #
	Stream Section #
Contact Name	Phone #

Survey Location

Mapsheet number	Type	Scale
Location (distance from known stream landmark)		
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (<2.5 cm in 24 hr) ‘ rain on snow		
Water turbidity (cm visibility)	Temperature ^{o}C (leave thermometer 2 min.) air _____ water _____	
Bankfull Channel width _____(m) depth _____(m) Wetted Channel width _____(m) depth _____(m)		

First and Last Measurements taken .1 m from streambank edge

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Take measurements every 0.5m in streams less than 5m. wide, every 1m in streams 5 to 15m.

Water Quality Survey Field Data Sheet

(use a new data sheet for each reference site surveyed) **Module 3**

Stream Name	Date
Organization Name	Stream Segment # Section #
	Map Sheet #

A) Temperature: Keep thermometer in water 2 min. and take the reading while it is still in the water

Use this section if you are concerned about daily temperature changes.

Time of day	air (^{0}C)	water (^{0}C)
_____a.m.		
_____p.m.		
Difference in water temp.		

Use this section if you are concerned about temperature differences between sites.

Site	air (^{0}C)	water (^{0}C)
upstream		
downstream		
difference in water temp.		

B) Dissolved oxygen: Take samples with a Hach kit when you take the late afternoon temperature reading. Determine % saturation from figure 2

Concentration (mg/l)	
% saturation	
Equipment (if not Hach kit)	

C) pH: Take samples when you take the late afternoon reading.

pH reading	
equipment	

D) Turbidity: Measure turbidity in a deep quiet area. Be careful not to disturb sediment. Use a turbidity meter or tape measure.

Turbidity (JTU, NTU, or cm)	
Background turbidity (if known)	
Turbidity increase over background	
equipment	

send the data to the Streamkeepers Database

Water Quality Survey Interpretation Sheet

Module 3

(use a new interpretation sheet for each site)

Stream Name	Date
Organization Name	Stream Segment #
	Map Sheet #

Q-VALUES: Calculate Q-values using these charts. Find the water quality result on the horizontal axis, follow up to the curve, then read the Q-value off the vertical axis. Q-values less than 50 may be cause for concern and merit further investigation.

E) Water quality index:

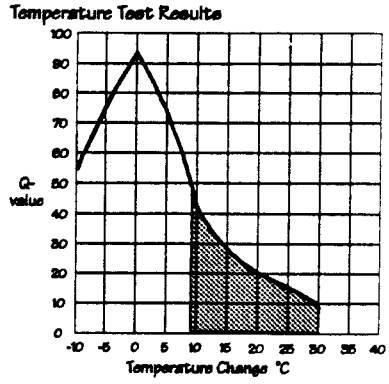
Fill in the table below with data and Q-values. Multiply the Q-value by the weighting factor to get the partial index value for each characteristic. Add up all four values to get the Water Quality Index. Rate water quality at your site using the chart at the bottom.

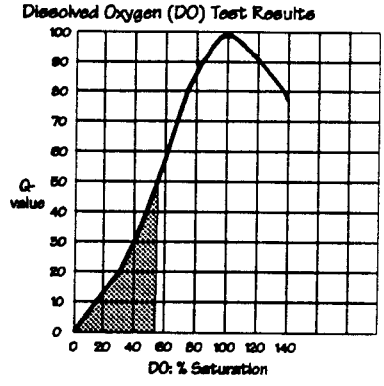
Chemical Test	Result	Q-value	Weighting Factor	Index Value
temperature change			x 0.10 =	
oxygen saturation			x 0.17 =	
pH (units)			x 0.11 =	
Turbidity (JTU, NTU, or cm ✪			x 0.08 =	
Total = Water Quality Index				

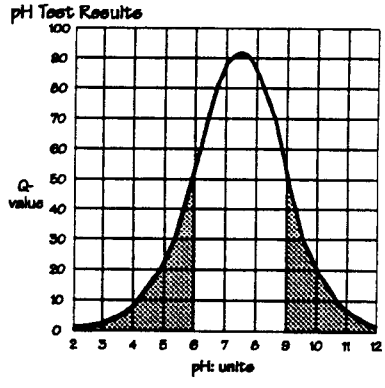
✪ amount above background, if available

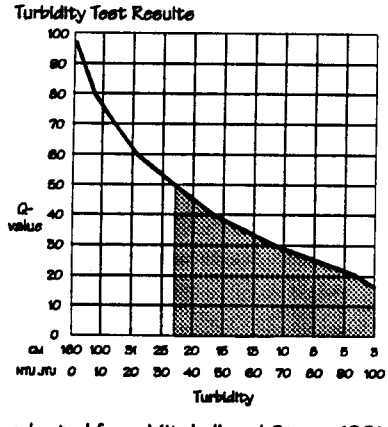
Water Quality Chart	
Good	40-45
Acceptable	30-40
Marginal	20-30
Poor	<20

▨ = Q-value less than 50



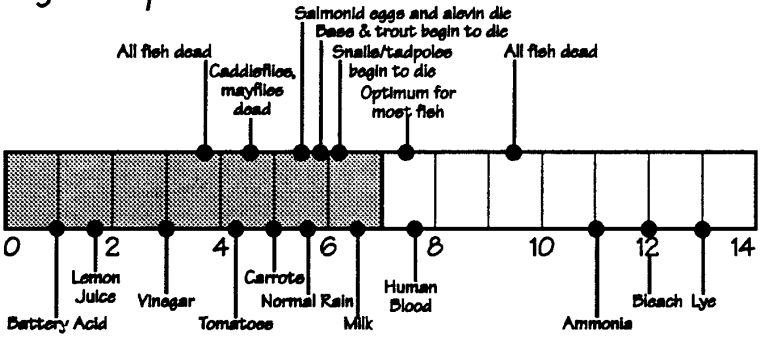






adapted from Mitchell and Stapp, 1991

Figure 1 pH Scale



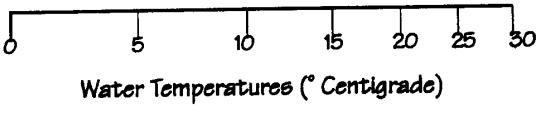
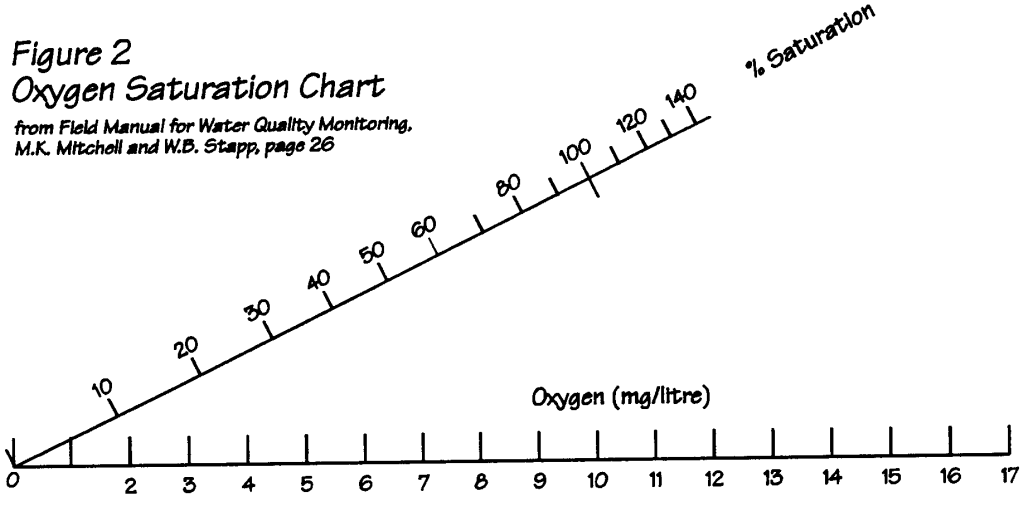


Figure 2
Oxygen Saturation Chart

from Field Manual for Water Quality Monitoring, M.K. Mitchell and W.B. Stapp, page 26



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fax to (604) 666-0292

Stream Location and Conditions

(use a new data sheet for each stream segment surveyed) **Module 4**

Stream Name/Nearest Town	Date
	Watershed code
Organization Name	Stream Segment #
	Stream Section #
Contact Name	Phone #

Survey Location

Mapsheet number	Type	Scale
Location (distance from known stream landmark)		
Time:_____ Weather ‘ clear ‘ shower (1-2.5 cm in 24 hr) ‘ snow ‘ overcast ‘ storm (<2.5 cm in 24 hr) ‘ rain on snow		
Water turbidity (cm visibility)	Temperature ^{o}C (leave thermometer 2 min.) air _____ water _____	
Bankfull Channel width _____(m) depth _____(m) Wetted Channel width _____(m) depth _____(m)		

First and Last Measurements taken .1 m from streambank edge

Left Bank									**Right Bank**
Wetted Depth									Wetted Depth
Bankfull Depth									Bankfull Depth

Take measurements every 0.5m in streams less than 5m. wide, every 1m in streams 5 to 15m.

send the data to: Streamkeepers Database

Invertebrate Survey Field Data Sheet

(use a new data sheet for each stream section surveyed) **Module 4**

Stream Name	Date
Stream Segment # Stream Section #	Sampling location
sampler used, mesh size, total area sampled	# of 30cm x 30cm samples

COLUMN A Pollution Tolerance	COLUMN B Number Counted	COLUMN C Number of Taxa	COLUMN D Common Name
CATEGORY 1 **(pollution intolerant)**			Caddisfly Larva (**EPT**)
			Dobsonfly (hellgrammite)
			Gilled Snail
			Mayfly Nymph (**EPT**)
			Riffle Beetle
			Stonefly Nymph (**EPT**)
			Water Penny
Sub-total			
CATEGORY 2 **(somewhat tolerant of pollution)**			Alderfly Larva
			Aquatic Beetle
			Aquatic Sowbug
			Clam, Mussel
			Cranefly Larva
			Crayfish
			Damselfly Larva
			Dragonfly Larva
			Fishfly Larva
			Scud
			Watersnipe Larva
Sub-total			
CATEGORY 3 **(pollution tolerant)**			Aquatic Worm
			Blackfly Larva
			Leech
			Midge Larva (chironomid)
			Planarian
			Pouch and Pond Snails
			True Bug Adult
			Water Mite
Sub-total			
TOTAL			

Invertebrate Survey Interpretation Sheet

(use a new data sheet for each stream section surveyed) **Module 4**

Stream Name	Date
Stream Segment # Stream Section #	Sampling location
sampler used, mesh size, total area sampled	# of 30cm x 30cm samples

A) ABUNDANCE AND DENSITY

ABUNDANCE: total number of organisms from **Column B** =

DENSITY: invertebrate density per square meter

(total # counted) ÷ (# of 30cm x 30cm samples x.09m^2) =

_____ ÷ (_____) = _____

B) PREDOMINANT TAXON

C) WATER QUALITY ASSESSMENTS

POLLUTION TOLERANCE INDEX: use the **total number of broad** taxonomic groups found in each tolerance category, from Field Data Sheet (**Column D**)

POLLUTION TOLERANT INDEX			
Good	**Acceptable**	**Marginal**	**Poor**
>22	22-17	16-11	<11

3 x (# of category 1)
+ 2 x (# of category 2)
+ (# of category 3) =

EPT INDEX: total number of **EPT** taxa from **Column C**, Field Data Sheet

EPT INDEX			
Good	**Acceptable**	**Marginal**	**Poor**
>8	5-8	2-5	0-1

EPT are stonefly, caddisfly and mayfly =

EPT TO TOTAL RATIO: total number of **EPT** organisms from **Column B**, Field Data Sheet divided by the total number of organisms

EPT TO TOTAL RATIO			
Good	**Acceptable**	**Marginal**	**Poor**
0.75 - 1.00	0.5 - 0.75	0.25 - 0.50	0 - 0.25

of **EPT** _____ ÷ total =

Invertebrate Survey Interpretation Sheet

(use a new data sheet for each stream section surveyed) **Module 4**

Stream Name	Date
Stream segment # Stream section #	sampling location
sampler used, mesh size, total area sampled	# of 30cm x 30cm samples

D) DIVERSITY ASSESSMENT

TOTAL NUMBER OF TAXA: from **Column C**, Field Data Sheet

PREDOMINANT TAXON RATIO: divide the **number** of invertebrate in the **predominant taxon** by the **total number of invertebrates** counted:

_____ ÷ _____ = _____
predominant total

PREDOMINANT TAXON RATIO			
Good	**Acceptable**	**Marginal**	**Poor**
0 - 0.40	0.40 - 0.60	0.60 - 0.80	0.80 - 1.0

E) SITE ASSESSMENT RATING:

Assign a rating between 1 and 4 to each index or ratio, then average the results to produce a general site assessment.

SITE ASSESSMENT RATING			
Good	**Acceptable**	**Marginal**	**Poor**
4	3	2	1

General Comments -
Unknown Bugs

SITE ASSESSMENT RATING	
Index or Ratio	**Rating**
Pollution Tolerance Index	
EPT Index	
EPT to Total Ratio	
Predominant Taxon Ratio	
Total	
Average	

see page 13 and 14 of Module 4 for further information

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 W. Hastings Street, Station 321, Vancouver, B.C. V6B 5G3
or fax to (604) 666-0292

Streamside Planting Summary Sheet

(use a new data sheet for each site planted) **Module 7**

Stream Name/Nearest Town:		Date
		Watershed code
Organization Name:		
Contact Name:		Stream Segment #
Crew Names:		
		Phone #

Upstream limit of work (directions, distance to known landmark)
Downstreamstream limit of work (directions, distance to known landmark)

Details of streamside planting
Source of stock (cuttings, nursery, seedlings, seed salvaged plants)
Species planted and number of each species
Additional comments (why the planting was done, etc.)

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,
Suite 400, 555 W. Hastings Street, Station 321, Vancouver, B.C. V6B 5G3
or fax to (604) 666-0292

Stream location and Conditions

(use a new data sheet for each stream segment surveyed) **Module 11**
(see Module 1 for additional information)

Stream Name/Nearest Town:	Date
Watershed code	NTS Map #
Stream segment order	Length surveyed (m)
Organization name	Crew size
Contact name	Phone #

Recent weather contitions	Water turbidity (cm)
Water temperature (^{0}C) *(leave thermometer in water 2 min.)*	Air temperature (^{0}C)
Stream condition (%bankfull)	Photos taken (ys or no)

Upstream boundary of survey (directions, distance to known landmark)
Downstream boundary of survey (directions, distance to known landmark)
IF YOU ARE SAMPLING A SPECIFIC POINT ON THE STREAM, RECORD: ***Specific location of sampling station (directions, distance to known landmark)***

send the data to: Streamkeepers Database, Department of Fisheries and Oceans,

MODULE 11
JUVENILE FISH TRAPPING DATA SHEET

Stream Name/Nearest Town:	Date

Comments

Trap # bait used	location	Time set	Time retrieved	species	Length (mm)