

7 APPENDIX

Appendix
Appendix 7.1 - Small Stream Risk Score Assessment

Milford

River: <u>Maggies Burn.</u>		Code:	Date: <u>6/11/2020</u>	Time: <u>12:35</u>
Station no. <u>20503420</u>		Location: <u>Downstream</u>		Grid (6 figure):
Field Chemistry		Stream Order:		Stream flow: Riffle Riffle/Glide <u>Slow flow</u>
DO%	<u>86.5</u>	Modifications: Y/N Canalised-widened-bank erosion-arterial drainage		
DO mg/l		Dominant Types:		
Temp (°C)	<u>10.1</u>	Bedrock		
Conductivity	<u>219</u>	Boulder (>128mm)		
pH	<u>7.31</u>	Cobble (32-128mm)		
Bank width (cm)	<u>100</u>	Gravel (8-32mm)		
Wet width (cm)	<u>100</u>	Fine Gravel (2-8mm)		
Avg Depth (cm)	<u>60cm</u>	Sand (0.25-2mm)		
Staff gauge		Silt (<0.25mm)		
Velocity	Colour	Slope: <u>Low</u> - Medium - High - Very High		Shading: High - <u>Moderate</u> - Low - None
Torrential	None	Geology: Calcareous-Siliceous-Mixed		Cattle access Y: upstream - downstream or N
Fast	Slight	Substratum Condition: Calcareous-Compacted		
<u>Moderate</u>	<u>Moderate</u>	Loose - Normal		
Slow	High	Substratum:		Photo: Y / N
Very slow		Stoney bottom <u>Muddy bottom</u> - Mud over stones		
Clarity	Discharge	Degree of siltation: Clean - Slight - <u>Moderate</u> - <u>Heavy</u>		
Very clear	Flood	Depth of mud: None < 1cm <u>1-5cm</u> > 10cm > 10cm		
Clear	<u>Normal</u>	Litter: None - Present - Moderate - Abundant		
<u>Slightly turbid</u>	Low	Filamentous Algae:		Sewage Fungus:
Highly turbid	Very Low	None - Present - Moderate - Abundant		None - Present - Moderate - Abundant
	Dry	Main land use u/s:		Sample retained:
	Recent Flood	Pasture		Y / N
		Urban		
		Tillage		
		Forestry		
		Other		

General Comments:

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:

- Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling
- Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
- Group 3 = Trichoptera
- Group 4 = G.O.L.D (Gastropoda, Oligochaeta and Diptera)
- Group 5 = *Asellus*

Calculate the total number of taxa and relative abundance of each macroinvertebrate group below. (Abundance = Ab)

Relative Abundance

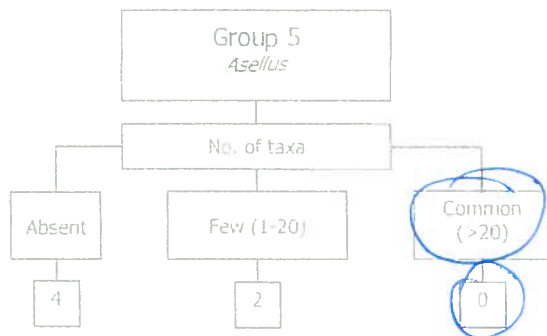
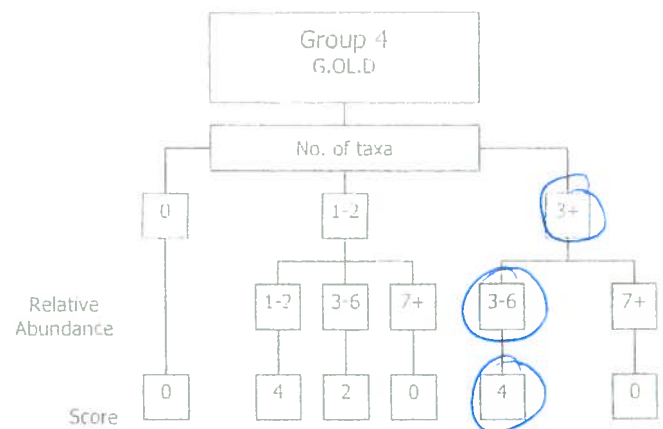
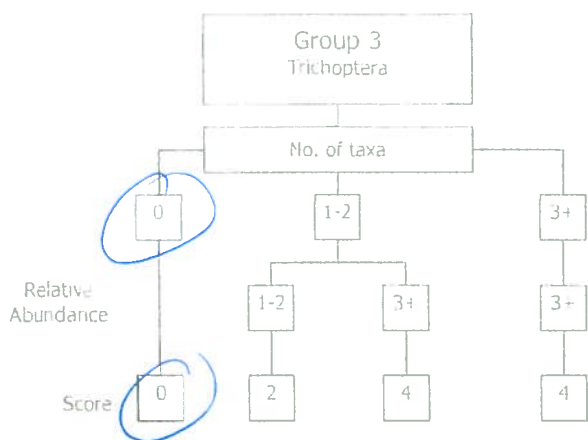
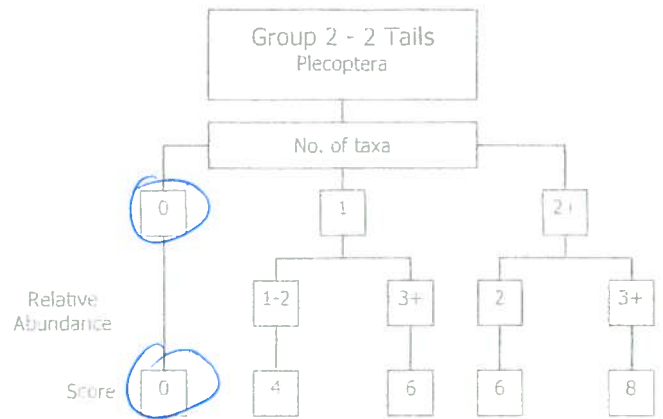
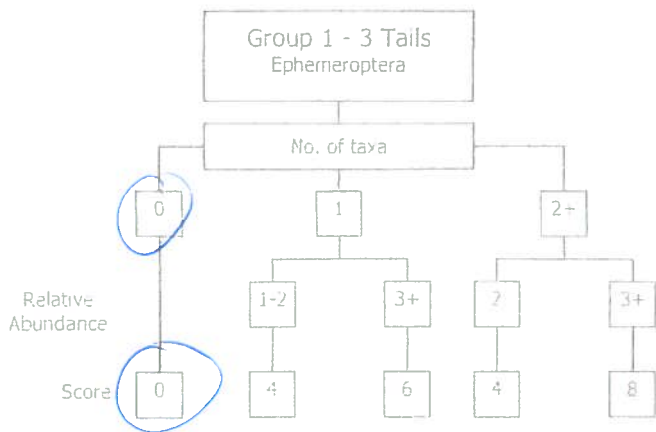
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

Ephemeroptera:	<i>Ecdyonurus</i> Ab	Plecoptera:	<i>Leuctra</i> Ab
	<i>Rhythrogena</i> Ab		<i>Isoptera</i> Ab
	<i>Heptagenia</i> Ab		<i>Protonemura</i> Ab
	<i>Ephemerella</i> Ab		<i>Amphinemura</i> Ab
	<i>Caenis</i> Ab		<i>Perla</i> Ab
	<i>Paraleptophlebia</i> Ab		<i>Dinocras</i> Ab
	<i>Ephemera danica</i> Ab		Other Plecop Ab
	Other Ephem Ab		Other Plecop Ab
Total no. of taxa	0	Total no. of Taxa	0
Total Relative Abundance	0	Total Relative Abundance	0
Trichoptera:	Hydropsychidae Ab	G.O.L.D:	<i>Lymnaea</i> (G) Ab
	Polycentropodidae Ab		<i>Potamopyrgus</i> (G) Ab
	<i>Rhyacophila</i> Ab		<i>Planorbis</i> (G) Ab
	Philopotamidae Ab		<i>Ancylus</i> (G) Ab
	Limnephilidae Ab		<i>Physa</i> (G) Ab
	Sericostomatidae Ab		<i>Lumbriculus</i> (Ol) Ab
	Glossosomatidae Ab		<i>Eiseniella</i> (Ol) Ab
	Lepidostomatidae Ab		50-100 <i>Tubificidae</i> (Ol) Ab
	Other Trichoptera Ab		
Total no. of Taxa	0	Total no. of Taxa	3
Total Relative Abundance	0	Total Relative Abundance	6
		Chironomidae (D) Ab	<i>Asellus:</i>
		<i>Chironomus</i> (D) Ab	Absent
		Simuliidae (D) Ab	Few/Low
		2 11 <i>Dicranota</i> (D) Ab	Common/
		1 Tipulidae (D) Ab	Numerous
		Ceratopogonidae (D) Ab	✓
		Other GOLD Ab	

NOTE: *Asellus* must be recorded as absent if none are found

NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from *each macroinvertebrate group* calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 2

- a) Index Score Group 1: 0
- b) Index Score Group 2: 0
- c) Index Score Group 3: 0
- d) Index Score Group 4: 4
- e) Index Score Group 5: 0

Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS) sum (a+b+c+d+e) **4**

Average Index Score (AIS) TIS/5 (5 for 5 groups) **0.8**

SSR Score (AIS x 2) **1.6**

Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25 Probably not at risk

> 6.5 – 7.25 Indeterminate Stream may be at risk

< 6.5 Stream at risk

Surveyor (signed): B. Gault Name (print): BERNADETTE GAULT Date: 6 / 11 / 2020

Milford

River: Maggie's Burn		Code:	Date: 6/11/2020	Time: 12:05
Station no.: 202503419		Location: Upstream		Grid (6 figure):
Field Chemistry		Stream Order:		Stream flow: Riffle Riffle/Glide Slow flow
DO%	95.9	Modifications: Y/N Canalised-widened-bank erosion-arterial drainage		
DO mg/l		Dominant Types: Bedrock Boulder (>128mm) Cobble (32-128mm) Gravel (8-32mm) Fine Gravel (2-8mm) Sand (0.25-2mm) Silt (<0.25mm)		
Temp (°C)	10.1°C	Slope: Low - Medium - High - Very High		
Conductivity	206	Geology: Calcareous Siliceous Mixed		
pH	7.30	Substratum Condition: Calcareous-Compacted Loose - Normal		
Bank width (cm)	200	Substratum: Stoney bottom-Muddy bottom Mud over stones		
Wet width (cm)	200	Degree of siltation: Clean-Slight-Moderate-Heavy		
Avg Depth (cm)	30	Depth of mud: None < 1cm, 1-5cm, 5-10cm, >10cm		
Staff gauge		Litter: None - Present - Moderate - Abundant		
Velocity	Colour	Filamentous Algae: None - Present - Moderate - Abundant		Shading: High - Moderate - Low - None
Torrential	None	Main land use u/s: Pasture Bog Forestry		Cattle access Y: upstream - downstream or N
Fast	Slight	Urban		Photo: Y / N
Moderate	Moderate	Tillage		
Slow	High	Other		
Very slow		Sample retained: Y / N		
Clarity	Discharge			
Very clear	Flood			Sewage Fungus: None - Present - Moderate - Abundant
Clear	Normal			Sampled in Minutes: Pond net x 10 Stone wash x 10 Weed sweep x 10
Slightly turbid	Low			
Highly turbid	Very Low			
	Dry			
	Recent Flood			

General Comments:

Macroinvertebrate Composition

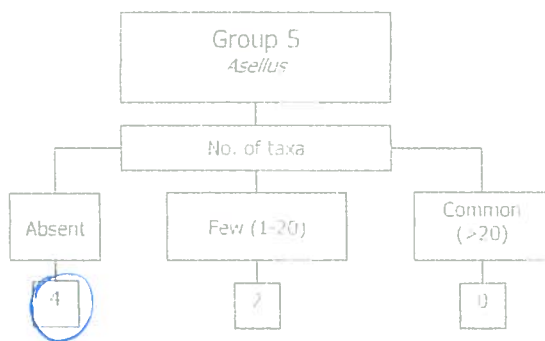
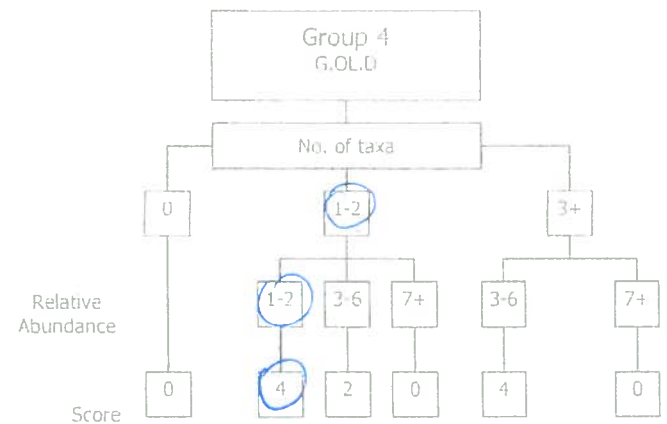
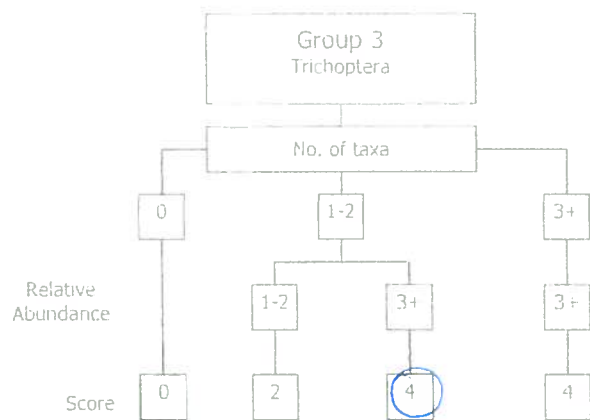
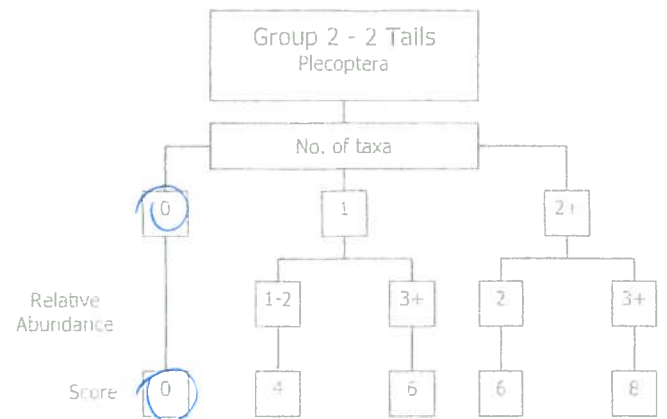
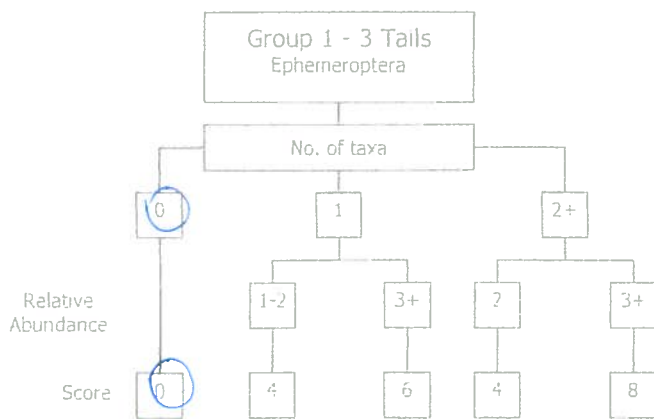
The macroinvertebrates are divided into the following 5 specific groups:
 Group 1 = Ephemeroptera (3-tails) - note that tails may be damaged during sampling
 Group 2 = Plecoptera (2-tails) - note that tails may be damaged during sampling
 Group 3 = Trichoptera
 Group 4 = G.O.L.D (Gastropoda, Oligochaeta and Diptera)
 Group 5 = Asellus
 Calculate the total number of taxa and relative abundance of each macroinvertebrate group below: (Abundance = Ab)

Relative Abundance	
1-5	1
6-20	2
21-50	3
51-100	4
101+	5

Ephemeroptera:		Plecoptera:	
<i>Ecdyonurus</i> Ab	_____	<i>Leuctra</i> Ab	_____
<i>Rhythrogena</i> Ab	_____	<i>Isoperla</i> Ab	_____
<i>Heptagenia</i> Ab	_____	<i>Protonemura</i> Ab	_____
<i>Ephemerella</i> Ab	_____	<i>Aniphinemura</i> Ab	_____
<i>Caenis</i> Ab	_____	<i>Perla</i> Ab	_____
<i>Paraleptophlebia</i> Ab	_____	<i>Dinocras</i> Ab	_____
<i>Ephemerella danica</i> Ab	_____	Other Plecop Ab	_____
Other Ephem Ab	_____	Other Plecop Ab	_____
Total no. of taxa 0	Total Relative Abundance 0	Total no. of Taxa 0	Total Relative Abundance 0
Trichoptera:	G.O.L.D:	Chironomidae (D) Ab	Asellus
Hydropsychidae Ab	<i>Limnaza</i> (G) Ab	<i>Chironomus</i> (D) Ab	Absent ✓
Polycentropodidae Ab	<i>Potamopyrgus</i> (G) Ab	<i>Simuliidae</i> (D) Ab	1 Few/Low
<i>Rhyacophila</i> Ab	<i>Planorbis</i> (G) Ab	<i>Dicranota</i> (D) Ab	1 Common/Numerous
<i>Philopotamidae</i> Ab	<i>Ancylus</i> (G) Ab	<i>Tipulidae</i> (D) Ab	
<i>Limnephilidae</i> Ab	<i>Physa</i> (G) Ab	<i>Ceratopogonidae</i> (D) Ab	
<i>Sencostomatidae</i> Ab	<i>Lumbriculus</i> (Ol) Ab	Other GOLD Ab	
60 <i>Glossosomatidae</i> Ab	<i>Eiseniella</i> (Ol) Ab		NOTE: Asellus must be recorded as absent if none are found
<i>Lepidostomatidae</i> Ab	<i>Tubificidae</i> (Ol) Ab		
Other Trichoptera Ab			
Total no. of Taxa 1	Total Relative Abundance 4	Total no. of Taxa 2	Total Relative Abundance 2

NOTE *Baetis* is an Ephemeropteran and is the most commonly occurring invertebrate genus in streams in Ireland. It is vital that *Baetis* is not counted in SSRS. See Appendix B for more details on how to identify *Baetis*.

Step 1. Calculate the Index Score by circling the appropriate box representing the total number of taxa and the total abundance calculated from *each macroinvertebrate group* calculated from page 1 of the recording sheet and enter in to the boxes in Step 2.



Step 2

a) Index Score Group 1	0
b) Index Score Group 2	0
c) Index Score Group 3	4
d) Index Score Group 4	4
e) Index Score Group 5	4

Step 3. Calculate the Total Index Score, the Average Index Score and the SSR Score using the boxes below

Total Index Score (TIS) sum (a+b+c+d+e) **12**

Average Index Score (AIS) TIS/5 (5 for 5 groups) **2.4**

SSR Score (AIS x 2) **4.8**

Step 4. Assess the stream by comparing the final SSR score with the categories below and tick the appropriate box

> 7.25 Probably not at risk

> 6.5 – 7.25 Indeterminate Stream may be at risk

< 6.5 Stream at risk

Surveyor (signed): B. Gault Name (print): BERNADETTE GAULT Date: 06 / 11 / 2020