Granamore Commonage

2019 Ecological Survey

Final Report

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1. Introduction

A baseline habitat condition and ecological survey and habitat management plan was prepared for the Granamore Commonage in 2018[1] and the measures within same underwent screening for Appropriate Assessment[2].

The management prescriptions in the SUAS plan for the commonage set out to address the impacts highlighted in that report so progress is made towards attaining **Favourable status** for the Annex I habitats present on the site – principally **4010 Northern Atlantic Wet Heaths with *Erica tetralix* , 4030 Dry Heath** and **7130 Blanket Bog**.

The major impacts arise from uncontrolled burning, over grazing (possibly historically from sheep but also from deer), historic turf cutting and associated drainage, lack of active shepherding (which would encourage sheep out of favoured areas) changes in timing of grazing on the hill (less sheep grazing in winter & early summer, which is now based around when grass growth is present so sheep favour these areas), recreational access from horse riding resulting in localised peat erosion near the track, and natural exposure and erosion. Self-seeding of Sitka spruce and encroachment of bracken across the commonage are also being addressed.

The extent of habitats present within the commonage and their affinities to either Fossitt (Level 3) or Annex I habitats on the Granamore Commonage were mapped as presented on **Figures 1** and **2** (see **Appendix 1**) and their conservation status was assessed and mapped as shown on **Figure 3** (see **Appendix 1**). A series of management prescriptions were drawn up for the commonage as detailed in **Table 1** and mapped on **Figure 4** (see **Appendix 1**).

2. SUAS Vegetation Management Measures

The proposed management measures for the Granamore commonage under SUAS are as follows:

Year 1 (2019)

1. Clean up all the box shores and drains along the side of the roads coming in from Corragh and bog road from Granamore. Aim is to divert water off the road to prevent further erosion. Consult with NPWS for advice before commencing work.
2. Cut some of the windblows in Area 3. Use some of these cut trees to block up some of the gullies in the peat on the slopes of area 3 (advice on how to block these gullies to be provided by and in consultation with project ecologist).
3. Cut a number of small sections of heather & gorse in area 20 to encourage sheep to graze in this area. Cut sections up to 0.5ha each and up to a total of 2ha in 2019.
4. Block drain along top of turf banks in area 18 (advice to be given by project ecologist).
5. Control burn a section, up to 1ha in size in area 23 to control strong heather and encourage sheep to graze this area. Fire control lines, at least 2-3m wide shall be cut around each section, either by tractor mounted machine or by hand, to ensure these controlled burning areas are contained. Controlled burning may be carried out either in the spring or the autumn so long as it is within the legal burning season and has the approval of NPWS.

[1] Wilson, F. (2019). Ecological Baseline Survey prepared for Granamore Commonage as part of the Commonage Management Plan for SUAS. 8th February 2019. Unpublished report for SUAS EIP.
[2] Wilson, F. (2019). Report for Screening for Appropriate Assessment for a Commonage Management Plan at Granamore, Hollywood, Co. Wicklow in accordance with the requirements of Article 6(3) of the EU Habitats Directive 11th February 2019. Unpublished report for SUAS EIP.

Year 2 (2020)

1. Control burn gorse on the dry banks in area 10. Ensure that the fire does not extend into the surrounding gorse areas.
2. Cut or control burn a further 1ha in area 23, ensuring to leave some areas of tall heather untouched.
3. Cut more of the windblows on the various areas of the commonage.
4. Cut gorse in area 2 (around the mass rock). This will be cut by hand using either saws or brush cutters as the area is surrounded by bracken and due to the rough terrain and rocky nature, burning would be very difficult to control. Professional contractors will be hired in to trial this work to see if it is feasible.
5. Discuss further road repairs with NPWS.

Year 3 (2021)

1. To be reviewed at the end of year 2.

Year 4 (2022)

1. To be reviewed at the end of year 2.

Shepherding

Average time per shepherding: 6 Hours

No of times sheep are to be shepherded: 2-3 Times per week from 1st May to 30th November.

Identified objective of the shepherding;

- Sheep are to be kept from straying off the commonage onto surrounding areas.
- Move off sheep from other commonages.
- Help new sheep on the commonage to settle onto the commonage and not wander too far or just stay around the mass rock or top of the pastures.
- Sheep to be moved off area 3 regularly to reduce grazing pressure there. Move sheep into the taller vegetation regularly to get them to graze these areas.
- Monitor sheep health for signs of tick diseases.
- Count numbers of deer grazing the commonage and areas they are grazing.

Other works to be carried out for entire commonage

Erect 2-3 grazing enclosures on plot 3 to see what effect deer grazing is having on this area.

Use feed buckets to encourage more sheep grazing the commonage in the Jan/Feb and April/May period.

Use the feed buckets to move grazing pressure away from the grass areas to overgrown areas in Jan/Feb period.

Details of sheep stocking rates proposed

Accurate sheep numbers will be obtained in year 1 and over the remaining 3 years, they will be increased gradually up to GLAS stocking rates.

Ecological Assessment

The commonage was surveyed in November 2019 by Faith Wilson to examine and review the implementation of the proposed measures and make any recommendations regarding same. The observations and recommendations from this visit are set out below.

3. 2019 Walkover Survey

The following observations, comments on same and recommendations on the works completed in 2019 are presented.

Works to the box shores and drains along the side of the roads coming in from Corragh and bog road from Granamore

Initial works have been done on the roadway to divert the water from the track in consultation with National Parks and Wildlife Service (NPWS). This work has been done very sensitively and has been well executed.

On the day of my visit there was a considerable amount of surface water continuing to come down the track and I wondered if the installation of a series of water bars along the track – particularly at the shores should be implemented.

Plate 1. Recently cleared shores allowing the water to escape off the track.

Above the old borrow pit (in Area 20) the track is very wet and dominated by rushes particularly in the centre of the track. There is very deep rutting of the track here, which is actually creating a channel for water and exacerbating the situation downslope on the track.

It is understood that the farmers are waiting for the roadway to dry out before they do anymore, and all works will be in consultation with NPWS (they prefer not grading off the roadway if possible following, some investigations by themselves). On the area above the borrow pit, there is no

foundation under most of this and any work needs to be carefully planned and Ann Fitzpatrick, NPWS is working with the farmers on this.

Plate 2. Tyre tracks have created deep channels for water to flow down on the track above the old borrow pit.

Firebreaks/Vegetation Cutting

It appeared as if a number of firebreaks for controlled burning had been created on Granamore commonage as can be seen in the Bing Maps imagery of the commonage as presented on **Figure 1** below. These were created in Area 10 and Area 20 on the slopes of the hillside using a flail behind a tractor but this cutting activity was not intended to be used a firebreaks.

There were no actual firebreaks cut on Granamore. The plan was for some cutting/mulching of vegetation in area 20, particularly areas dominated by gorse. The tractor and mulcher was not able to work in the very rough and stony areas, so he just cut in the areas where he could. The contractor just cut in large circles like he did on the other sites, even though he was supposed to cut small isolated areas (no one from the project team was there to supervise him on the day). He also did some cutting in area 10 as the farmers asked him to, but these are not firebreaks.

Controlled Burning

The areas where burning took place in Area 10 had not been identified in the proposed management works as set out in **Table 1** (see **Appendix 1**). They focused on a small knoll which had gorse present. The plan was to have controlled burning in areas 23 & 24 in 2019 and in area 10 in 2020. Unfortunately, it was so late getting the baseline reports completed and agreement with NPWS that we didn't have time to prepare the necessary firebreaks. With agreement from NPWS, two small areas in area 10 were burned in 2019 and areas 23 & 24 will be done in 2020.

Figure 1. Firebreaks cut on Granamore Commonage (Bing Maps).

Plate 3. Burnt gorse on the knoll in Area 10.

Sheep are congregating in this area post burning with extensive dunging and grazing pressure on the grasses underneath. This has resulted in areas of bare soil and poaching. The sheep need to be shepherded regularly out of this area to reduce browsing pressure on same. Patches of heath rush

(*Juncus squarrosus*) are present and if browsing pressure remains too high this species will begin to dominate as it is unpalatable to sheep.

The burn here would appear to have got out of control and entered the area of adjoining wet heath/blanket bog. Thankfully the ground conditions must have been relatively wet as the *Sphagnum* and other mosses were undamaged and the bryophyte layer is intact but the area is heavily browsed and the sheep need to be moved regularly out of here.

Plate 4. Extensive dunging, bare soil and heavy browsing in the recently burnt area.

As described above it appeared as if areas were prepared for burning in Area 20 however these areas were supposed to be cut/flailed in small patches (not in doughnuts). The areas that have been cut in Area 20 were often located in areas of heather that did not require burning/cutting and were actually of a manageable height for sheep to walk through. These areas should not be burnt/further cut/flailed.

The areas in Area 20, which had been identified by the commonage group members as requiring vegetation control, which was an area dominated by western gorse (*Ulex gallii*), generally remained unmanaged with no obvious significant interventions made as the ground here was too rocky to allow the machine to work in. If these areas are to be managed it will probably need to be done manually (see below).

The locations for future flailing works should probably be supervised and directed by the SUAS project manager more specifically on the ground until everyone understands what is trying to be achieved and resources and effort are not wasted.

Plate 5. Areas of autumn gorse either side of the flailed track.

In some parts of Area 20 as can be seen in **Plate 5** above the flailed track cuts through some of these patches and these small areas could be burnt or the use of buckets in these areas could be considered to encourage sheep out of the favoured areas and to reduce the vigour of the autumn gorse. Small areas within them could also be manually cut with brush cutters if the ground is unsuitable for a machine to work in.

It would be advisable that if any burning is planned for 2020 it is limited to very small patches within the areas prepared in 2019 that actually require management in Area 20 and that additional areas in Areas 23 and 24 are prepared and either flailed/subject to controlled burning to encourage sheep movement across the northern portion of the commonage.

Lessons should be learned from the experience of burning within the demonstration area on Glasnamullen. The results of this burning was favourable in that not every patch of vegetation within the prepared area had been burnt and some areas of tall standing heather were left which resulted in a nice mosaic of differing vegetation heights and material left to provide seed source for regeneration and ensure stability of the soil.

Sitka spruce removal

Cutting/removal of Sitka spruce from within the commonage will be done in 2020.

Acid grassland condition
The condition of the acid grassland on the slopes in Area 16 was further examined. These are actually in poorer condition than had been previously thought/initially assessed. In many areas the grass has been all but browsed out with the sward dominated by mosses or in other instances by dense mat grass (*Nardus stricta*) which is unpalatable to sheep. Additional surveys conducted during the vegetation growing season will further examine these areas. The ongoing shepherding and movement of stock off the upper portions of the commonage above the track on the Round Hill must be implemented.

Plate 6. Mat grass dominating the sward.

Drain blocking
Drain blocking on the commonage will be completed in 2020.

Erosion gullies
There was no noticeable improvement in the condition of erosion gullies in Area 3. These areas will be tackled in 2020 alongside the Sitka spruce removal.

Plate 7. Drain along northern edge of Area 19 awaits blocking.

4. Appendix 1. Maps and Management Recommendations

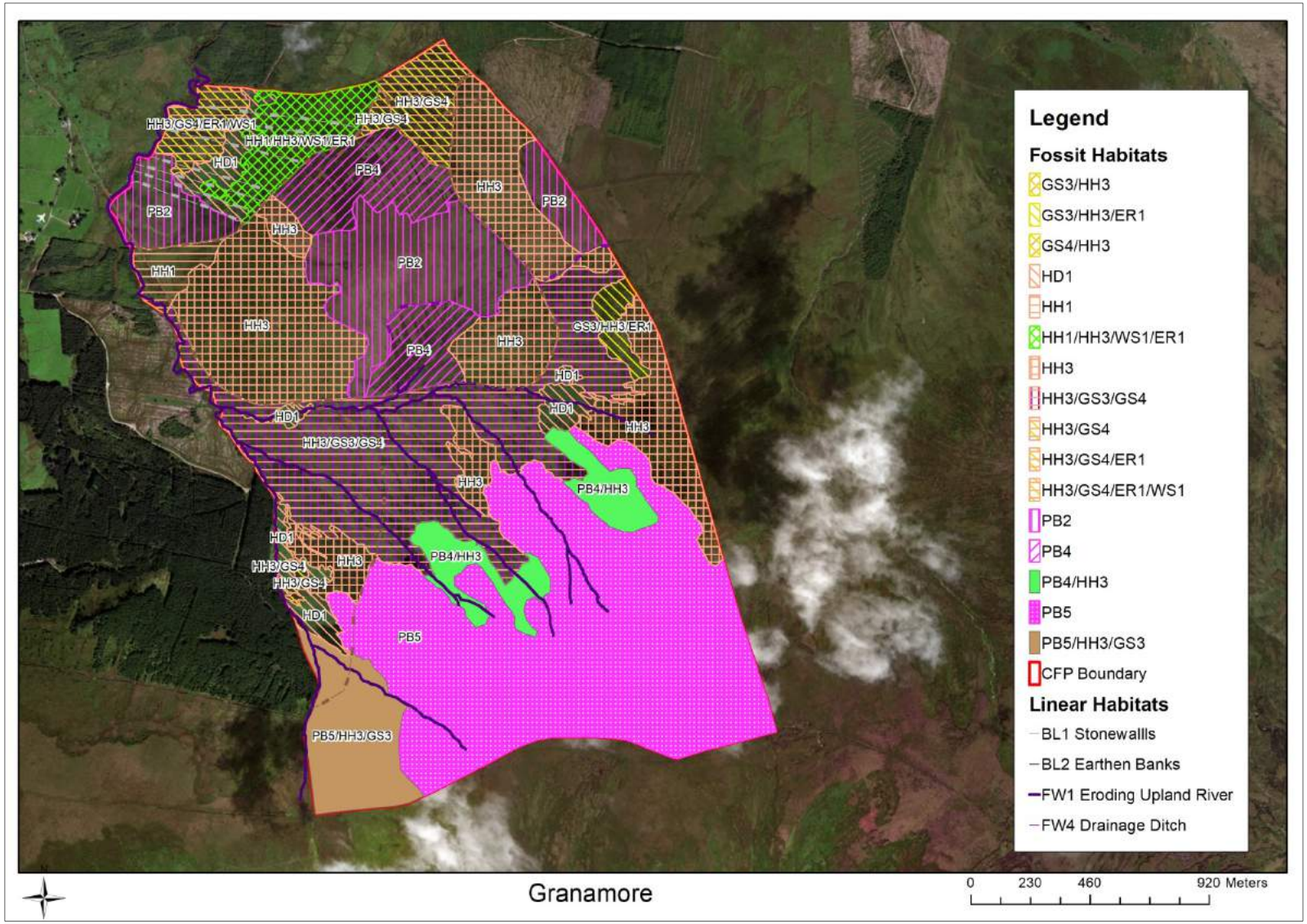


Figure 1. Habitats mapped to Level Three (Fossitt, 2000) within the Granamore commonage.

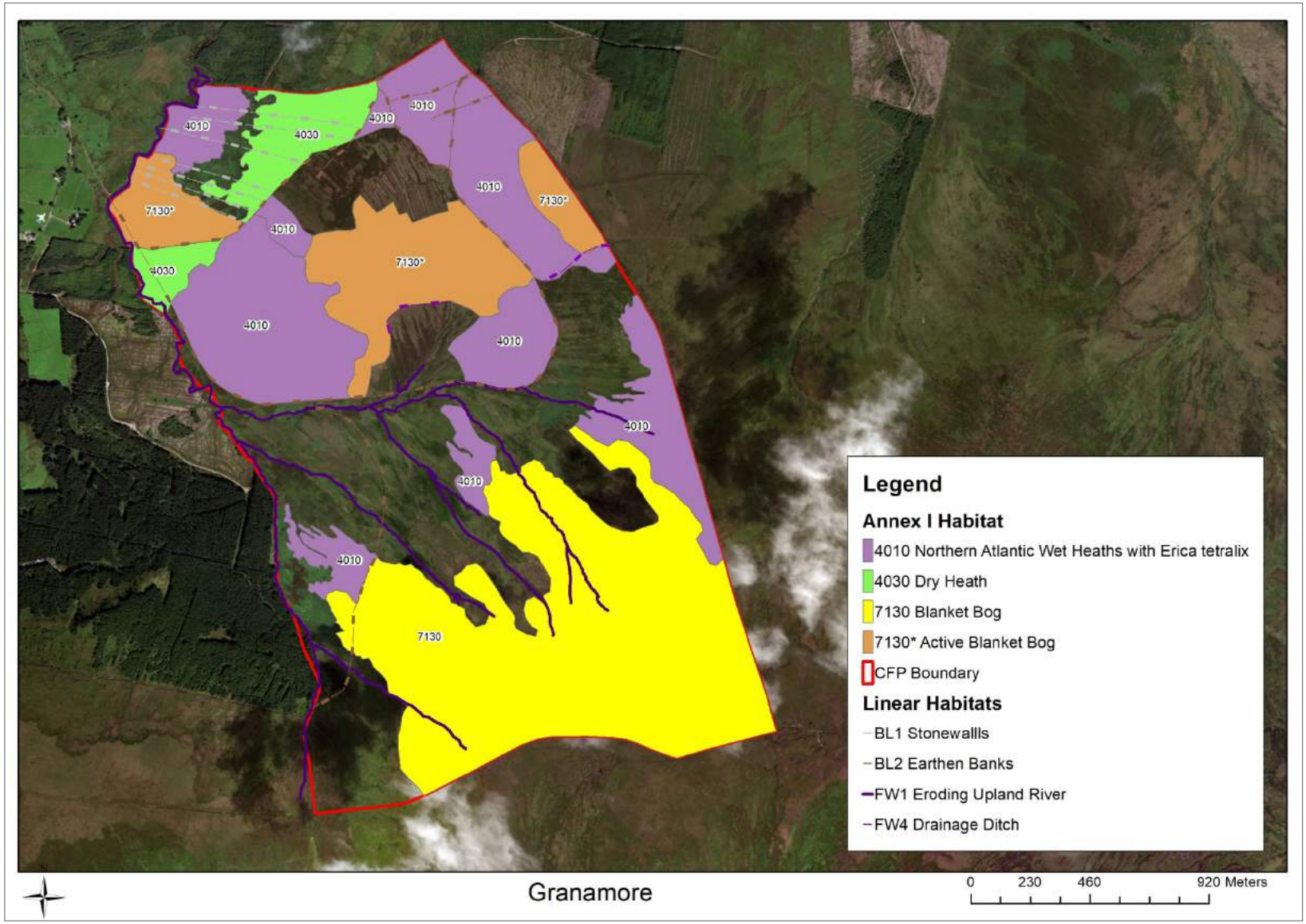


Figure 2. Habitats mapped according to their correspondence with Annex I habitats within the Granamore commonage.

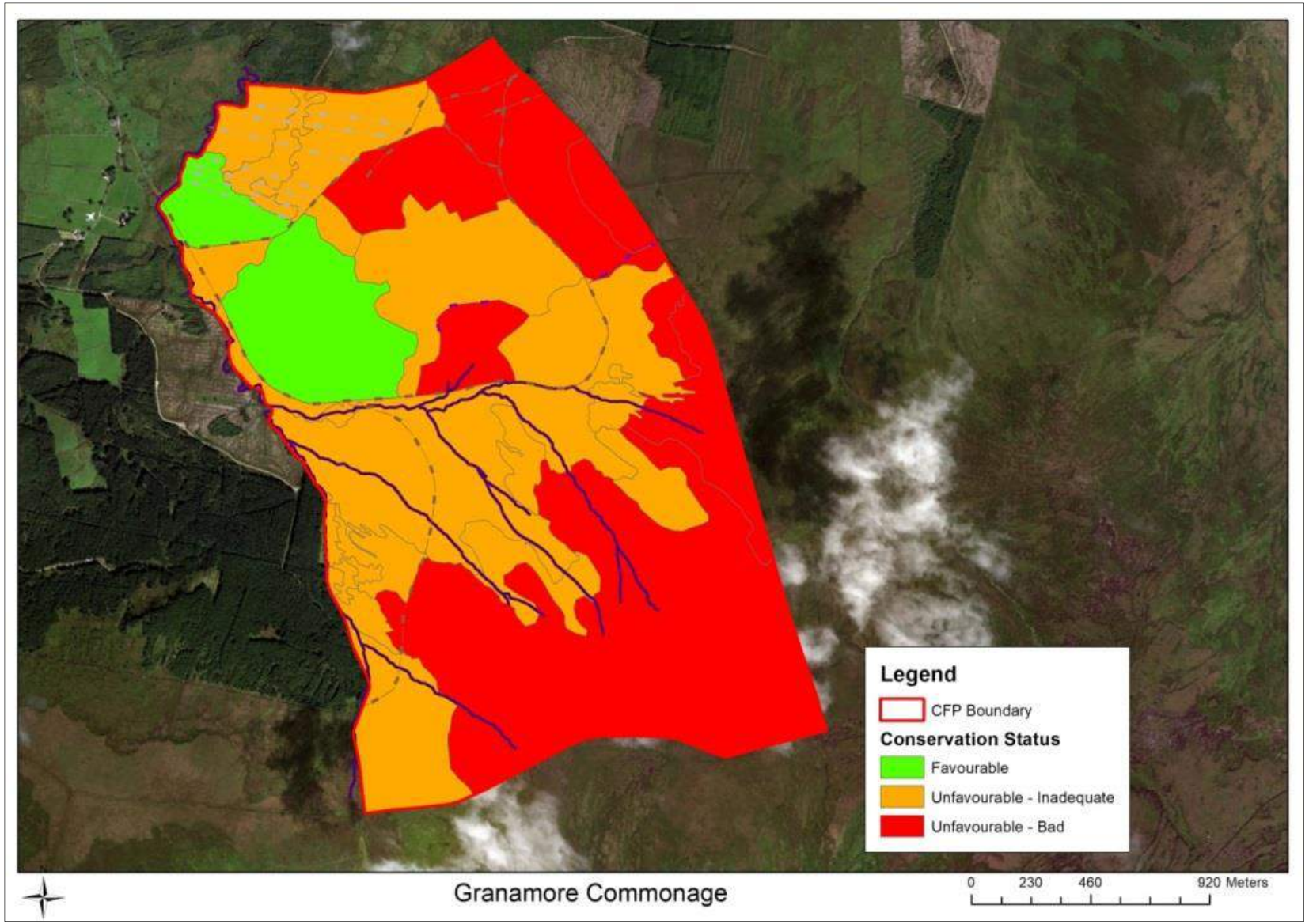


Figure 3. Habitat Condition Assessment for Granamore Commonage.

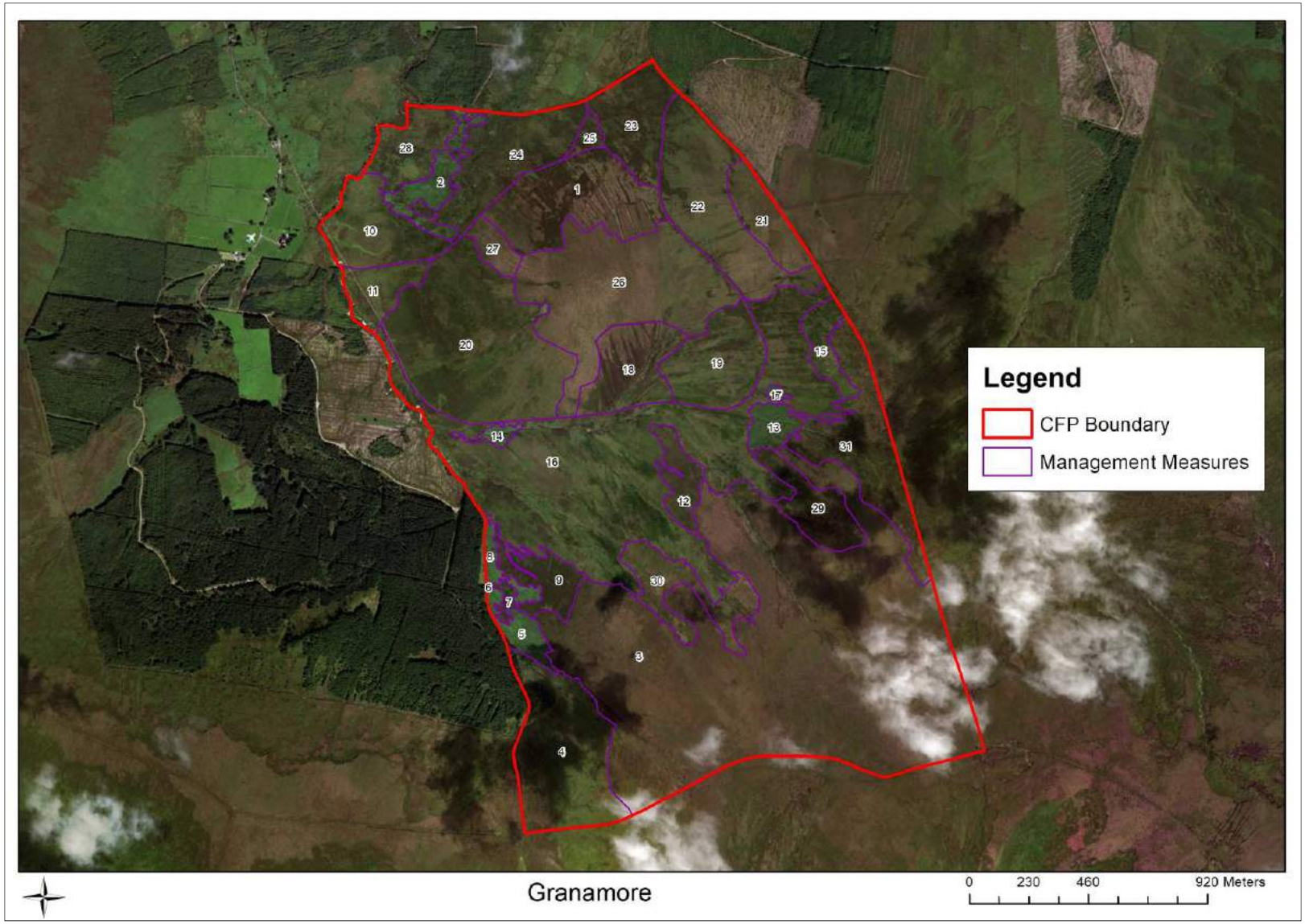


Figure 4. Management measures for Granamore.

Table 1. Habitats present on Granamore Commonage and Management Recommendations.

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
1			PB4	Cutover Bog	175048	17.50	Unfavourable - Bad	Avoid grazing this area so it can naturally revegetate.
2			HD1	Dense Bracken	54425	5.44	Unfavourable - Inadequate	Control bracken.
3	7130 (I'm not 100% sure on how to classify this as it is so damaged)	Blanket Bog	PB5 FW1	Eroding Blanket Bog Eroding Upland Watercourse	1245790	124.58	Unfavourable - Bad	This area was extremely badly burnt in 2001 and again in March 2003 which has resulted in the loss of vegetation on the ridge and drying out of the peat which is cracking in several locations. Erosion of this area is very severe in places as a result of a number of likely factors including uncontrolled burning, high deer numbers, natural erosion and exposure. Atmospheric ammonia/nitrogen enriching the peats in this area and contributing to a potential impact on water quality. A number of watercourses now rise on the ridge and have eroded out deep gullies in the peat – they previously rose from springs on the lower slopes (not the ridge). Restoration of the ridge vegetation is required. Destocking and exclusion of grazing is recommended. Erection of deer exclosures to assess deer browsing pressures. Provide grouse flight diverters on fencing if

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
								erected to reduce collision risk. Consider establishing protective woodland along the watercourse.
4			PB5/HH3/GS3 FW1	Eroding Blanket Bog/Wet Heath/Dry Acid Grassland Eroding Upland Watercourse	208217	20.82	Unfavourable - Inadequate	Control and remove regenerating spruce. Destocking and exclusion of grazing is recommended. Erection of deer exclosures to assess deer browsing pressures. Protect watercourse through establishment of gully woodland.
5			HD1 FW1	Dense Bracken Eroding Upland Watercourse	31815	3.18	Unfavourable - Inadequate	Destocking and exclusion of grazing is recommended. Erection of deer exclosures to assess deer browsing pressures. Provide grouse flight diverters on fencing if erected to reduce collision risk. Control bracken. Protect watercourse through establishment of gully woodland.
6			HH3/GS4 FW1	Wet Heath/Wet Grassland Eroding Upland Watercourse	101	0.01	Unfavourable - Inadequate	Control bracken to prevent invading heath. Protect watercourse through establishment of gully woodland.
7			HH3/GS4 FW1	Wet Heath/Wet Grassland Eroding Upland Watercourse	8583	0.86	Unfavourable - Inadequate	Destocking and exclusion of grazing is recommended. Protect watercourse through establishment of gully woodland.

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
8			HD1	Dense Bracken	19933	1.99	Unfavourable - Inadequate	Control bracken. Destocking and exclusion of grazing is recommended. Protect watercourse through establishment of gully woodland.
9	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3	Wet Heath	56010	5.60	Unfavourable - Inadequate	There is some cracking in the peat here and the upper slopes are at risk of slippage. No burning or vegetation control should be proposed for this area as a result. Trespass from cattle was noted here. Destocking and exclusion of grazing is recommended.
10	7130*	Active Blanket Bog	PB2	Upland Blanket Bog	104934	10.49	Favourable	Monitor grazing pressure and sheep movements to ensure no decline.
11	4030	Dry Heath	HH1	Dry Heath	52330	5.23	Favourable	This area was burnt in December 1999 and again in March 2011, which would explain why it is now dominated by dry heath as opposed to wet heath. Consultation will be required with NPWS regarding any burning proposals here. My recommendation would be that no action is required in this area. Monitor grazing pressure and sheep movements to ensure no decline.
12	4010	Northern Atlantic Wet	HH3	Wet Heath	43772	4.38	Unfavourable - Inadequate	Monitor grazing pressure and sheep movements to ensure no further

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
		Heaths with *Erica tetralix*	FW1	Eroding Upland Watercourse				decline of wet heath. Destocking and exclusion of grazing is recommended. Consider establishing protective woodland along the watercourse.
13			HD1 FW1	Dense Bracken Eroding Upland Watercourse	30221	3.02	Unfavourable - Inadequate	This area was burnt in March 2003 which would have allowed the bracken to take hold. Control bracken. Destocking and exclusion of grazing is recommended. Consider establishing protective woodland along the watercourse.
14			HD1	Dense Bracken	10346	1.03	Unfavourable - Inadequate	The adjoining area (16) was burnt in March 2011 and this area may also have been burnt. This would have allowed the bracken to take hold in the general area. Control bracken. Destocking and exclusion of grazing is recommended.
15			GS3/HH3/ER1	Dry Grassland/Wet Heath/Exposed Rock	38503	3.85	Unfavourable - Bad	This area was badly burnt in 2001 and has still not yet recovered. No further burning in this area. Shepherd livestock out of here to allow it to recover. Destocking and exclusion of grazing

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
								is recommended.
16			HH3/GS3/GS4 FW1	Wet Heath/Dry Acid Grassland/Wet Grassland Eroding Upland Watercourse	682910	68.29	Unfavourable - Inadequate	This area was partially badly burnt in the eastern part of the slope in 2001 and has still not yet recovered. The upper slopes of the eastern part of this area (near area 29) were again burnt in March 2003. Part of the area was also burnt again in March 2011. This would have allowed the bracken to take hold in the general area. No further burning in this area. Grazing would appear to be altering wet heath to wet grassland/dry acid grassland. Shepherd livestock out of here to reduce pressure. Remove seeding Sitka spruce. Destocking and exclusion of grazing is recommended. Consider establishing protective woodland along the watercourse.
17			HD1	Dense Bracken	3450	0.35	Unfavourable - Inadequate	Control bracken.
18			PB4	Cutover Bog	99705	9.97	Unfavourable - Bad	Block drain along northern boundary of old cutover at regular intervals. Fence if required to ensure that animals do not get stuck in drain. Provide grouse flight diverters on

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
								fencing if erected to reduce collision risk.
19	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3	Wet Heath	113523	11.35	Unfavourable - Inadequate	Hydrologically at risk from old adjoining cutover - monitor grazing pressure and shepherd accordingly.
20	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3	Wet Heath	338684	33.87	Favourable	This area was previously burnt in March 2011 which may account for the regeneration of gorse in one area. Consultation will be required with NPWS regarding any burning/flailing proposals here. In general the burn must not have been too intense in this area as it was in good condition. This area has been subject to a landslide in the past.
21			PB2	Upland Blanket Bog	62430	6.24	Unfavourable - Bad	This area was badly burnt in 2001 and has still not yet recovered. The lower (northern) slopes of this area appeared to have escaped the burn. Shepherd livestock out of here to reduce pressure and allow vegetation to continue to recover.
22	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3	Wet Heath	193403	19.34	Unfavourable - Bad	This area was badly burnt in 2001 and has still not yet recovered. The lower (northern) slopes of this area appeared to have escaped the burn. A more recent burn was also noted

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
								(this is undocumented by NPWS) which extends down to the track. Shepherd livestock out of here to reduce pressure and allow vegetation to continue to recover. Block linear drains on these slopes at appropriate intervals to restore hydrology. Remove seeding spruce.
23	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3/GS4	Wet Heath/Wet Grassland	95841	9.58	Unfavourable - Bad	Bad erosion in the vicinity of the track. Some minor works by hand may be allowed by NPWS to divert the water away from these areas and prevent further peat erosion. Reseeding of bare peats with heather seed/brash recommended. Remove seeding spruce.
24	4030		HH1/HH3/WS1/ER1	Dry Heath/Wet Heath/Scrub/Exposed Rock	145580	14.56	Unfavourable - Inadequate	Scrub clearance of gorse in this area will need to be discussed with NPWS.
25	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3/GS4	Wet Heath/Wet Grassland	12858	1.29	Unfavourable - Inadequate	Erosion in the vicinity of the track. Some minor works by hand may be allowed by NPWS to divert the water away from these areas and prevent further peat erosion.
26	7130*	Active Blanket Bog	PB2	Upland Blanket Bog	306297	30.63	Unfavourable - Inadequate	The bog surface has been damaged here by a quad. No further quad/scrambler access to the entire commonage should be allowed – on other commonages this has been

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
								controlled through locked gates. In general the bog is in good condition but the hydrological impacts of the cutover areas need to be considered.
27	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3	Wet Heath	25612	2.56	Unfavourable - Inadequate	Monitor condition and sheep grazing impacts.
28	4010	Northern Atlantic Wet Heaths with *Erica tetralix*	HH3/GS4/ER1/WS1	Wet Heath/Wet Grassland/Exposed Rock/Scrub	70876	7.09	Unfavourable - Inadequate	Some control of gorse in these lower areas was suggested by the group. Consultation will be required with NPWS regarding any clearing of scrub/burning proposals here.
29			PB4/HH3	Cutover Bog/Wet Heath	69252	6.93	Unfavourable - Inadequate	This area was badly burnt in 2001. This area was further damaged by an uncontrolled fire in March 2003 and has not yet recovered. The area was also the site of former peat cutting (now ceased) and this poses a risk to the stability of the areas of deeper peats on the slopes. Destocking and exclusion of grazing is recommended.
30			PB4/HH3 FW1	Cutover Bog/Wet Heath Eroding upland watercourse	88011	8.80	Unfavourable - Inadequate	The area was also the site of former peat cutting (now ceased) and this poses a risk to the stability of the areas of deeper peats on the slopes. Destocking and exclusion of grazing is recommended. Consider establishing protective woodland along the watercourse.
31	4010	Northern Atlantic Wet	HH3	Wet Heath	162076	16.21	Unfavourable - Bad	This area was extremely badly burnt in 2001 and again in March 2003 and

Id	Annex I Code	Annex I Description	Fossitt Code	Habitat	Area (m)	Area (Ha)	Conservation Status	Management Measure
		Heaths with *Erica tetralix*						has still not yet recovered. The area was also the site of former peat cutting (now ceased) which has removed a significant depth of peat exposing the rocks below. There is potential significant erosion/landslide risk in this area as a result. Destocking and exclusion of grazing is recommended.

5. Water Quality

Water samples were taken from five sampling locations in the headwater streams, which rise within the commonage on the slopes of White Moss Mountain with a further two samples taken below the confluence of these streams in the Douglas River as shown on **Figure 5** below. These are all unnamed in the EPA datasets with the exception of the stream, which forms the western boundary of the commonage, which is mapped as Douglas River. From west to east the remaining three streams are known locally/mapped on the 6" series as Roundhill Brook, unnamed and Leogh Brook/Tromawn. are all tributaries of the Douglas River (IE_EA_09D020200),

The water samples were assessed by Carl Dixon and in general the headwater streams (GR2, GR3, GR4 and GR5) were assessed as a stream 'At Risk' of not achieving 'Good' water quality status. The exception was GR1, which was assessed as 'Indeterminate' – where the stream is at risk of not achieving 'Good' water quality status. The two sampling locations downstream of here on the Douglas River (GR6 and GR7) were assessed as a stream 'Probably Not at Risk' of not achieving 'Good' water quality status. Given the level of recent clearfelling activity in the area this seems surprising.

The Small Streams Risk Score (SSRS) is a biological risk assessment system for identifying rivers that are definitely 'at risk' of failing to achieve the 'good' water quality status goals of the Water Framework Directive (WFD). It was developed by the Environmental Protection Agency (EPA) in association with the Western River Basin District (WRBD) in 2006. The main aim of the SSRS is to support the programme of measures for the WFD which has its main objective to achieve 'good' water quality status in all water bodies by 2020.

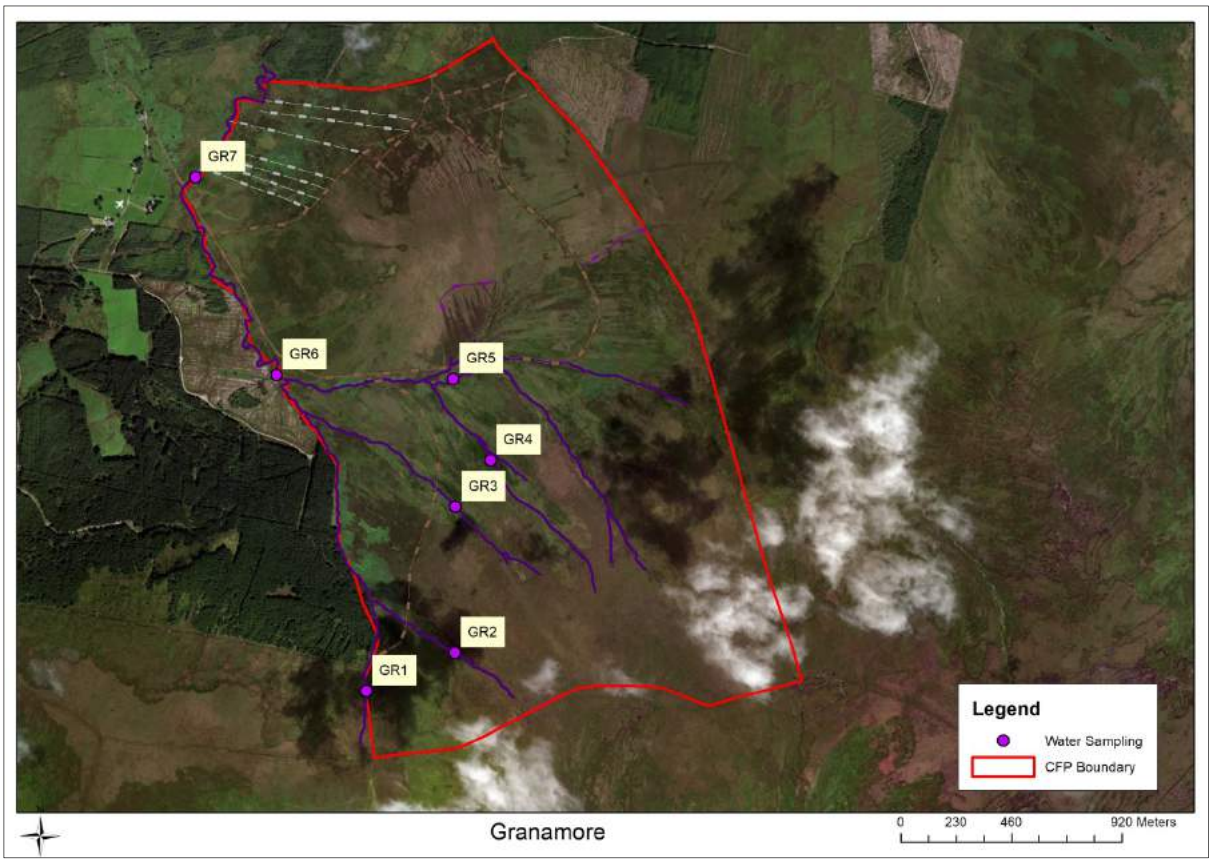


Figure 5. Water quality sample locations at Granamore.

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR1	Headwater stream of Douglas River in Granamore commonage – upstream of forestry	1st order	S 98976 97975
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: Y	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	**Bedrock**	Low	Calcareous
Widened	**Boulder (>128mm)**	Medium	**Siliceous**
Bank erosion - localised	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	**Very high**	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	**Clean**	None
Loose	Muddy bottom	Slight	**<1cm - peat**
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	**Forestry**
	Abundant		Tillage
			Urban
			Other

Plate 1. Photographic record of sampling location – GR1.

GR1

River:	Code:	Date:	Time:
Station no.	Location:		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	
Velocity	**Colour**
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	
Clarity	**Discharge**
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None <1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Filamentous Algae:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture, Urban
Bog, Tillage
Forestry, Other

Sample retained: Y / N

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus:
None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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:	
Ecdyonurus Ab		*Leuctra* Ab	1
Rhithrogena Ab		*Isoperla* Ab	1
Heptagenia Ab		*Protonemura* Ab	2
Ephemerella Ab		*Amphinemura* Ab	2
Caenis Ab		*Perla* Ab	
Baetis rhodani Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Biecop Ab	
Other Epham Ab		Other Biecop Ab	
Total no. of taxa	Total Relative Abundance	Total no. of Taxa: 4	Total Relative Abundance: 6

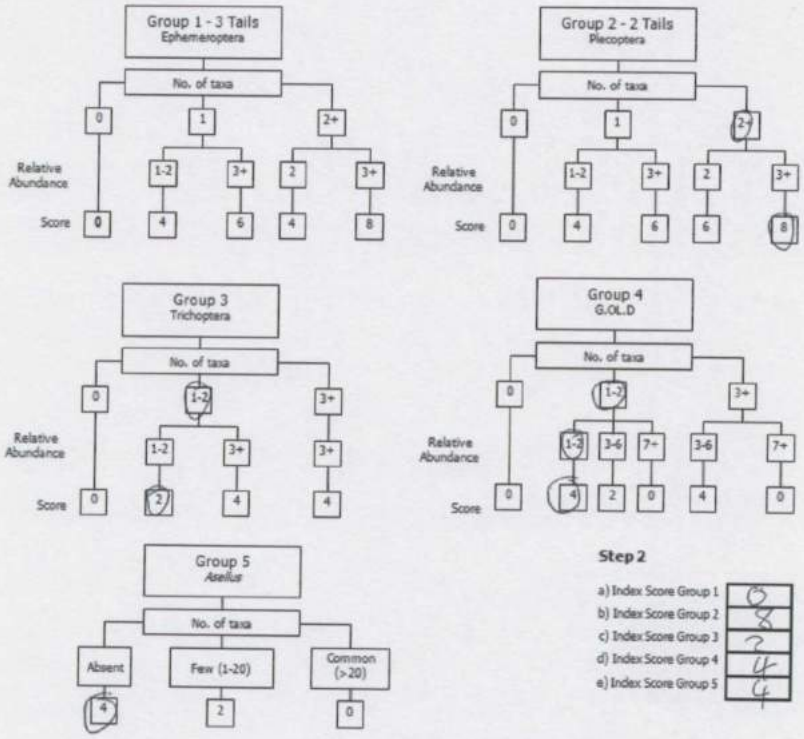
Trichoptera:		G.O.L.D:			
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab	
Polycentropodidae Ab		*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab	
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab	
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab	
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab	
Sericostomatidae Ab		*Lumbriculus* (Oli) Ab		Ceratopogonidae (D) Ab	
Glossosomatidae Ab		*Eiseniella* (Oli) Ab		Other GOLD Ab	
Leptoceridae Ab		Tubificidae (Oli) Ab			
Other Trichoptera Ab					
Total no. of Taxa: 1	Total Relative Abundance: 1	Total no. of Taxa	Total Relative Abundance		

Asellus: Absent 0; Few (1-20); Common (>20)

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	8
b) Index Score Group 2	8
c) Index Score Group 3	2
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)	Average Index Score (AIS) TIS/5 (5 for 5 groups)	SSR Score (AIS x 2)
18	3.6	7.2

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): _____ Name (print): Carl Dixon Date: ____/____/____

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River – unnamed tributary	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR2	Granamore Commonage -tributary stream of Douglas river	1st order	S 99345 98133
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: Y	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	**Bedrock**	Low	Calcareous
Widened	**Boulder (>128mm)**	Medium	**Siliceous**
Bank erosion - localised	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	**Very high**	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	Clean	**None**
Loose	Muddy bottom	**Slight**	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	Forestry
	Abundant		Tillage
			Urban
			Other

Plate 1. Photographic record of sampling location – GR2.

GR2

River:	Code:	Date:	Time:
Station no.	Location:		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg.Depth (cm)	
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	

Clarity	Discharge
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Gobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None <1cm 1-5cm 5-10cm >10m

Litter: None – Present – Moderate - Abundant

Filamentous Algae:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture, Urban, Bog, Tillage, Forestry, Other

Sample retained: Y / N

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus:
None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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.OL.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:	
Ecdyonurus Ab		*Leuctra* Ab	1
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	1
Baetis Ab		*Nemoura* Ab	
Paraleptophlebia Ab		*Diamesa* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa	Total Relative Abundance	Total no. of Taxa	2 Total Relative Abundance 2

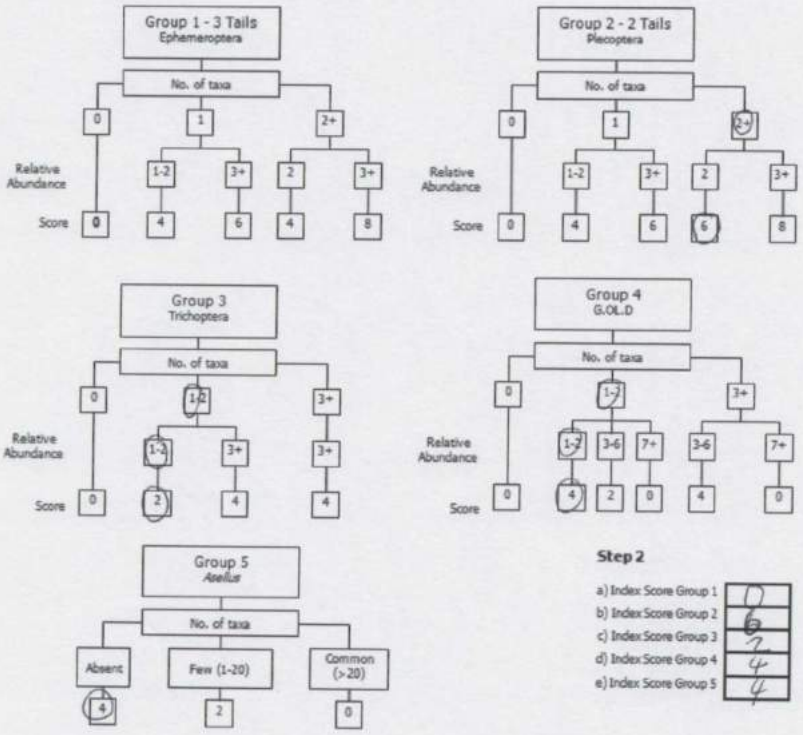
Trichoptera:		G.OL.D:			
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab		*Asellus*
Polycentropodidae Ab		*Anisus* (G) Ab		*Chironomus* (D) Ab		Absent
Rhyacophila Ab		*Bithynia* (G) Ab		Simuliidae (D) Ab		Few (1-20)
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab		Common (>20)
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab		
Sericostomatidae Ab		*Lumbriculus* (O) Ab		Ceratopogonidae (D) Ab		
Glossosomatidae Ab		*Enchytraeus* (O) Ab		Other GOLD Ab		
Leptoceridae Ab		Tubificidae (O) Ab				
Other Trichoptera Ab						
Total no. of Taxa	Total Relative Abundance	Total no. of Taxa		Total Relative Abundance		

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*.

G12

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	6
c) Index Score Group 3	2
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) **16**

Average Index Score (AIS) TIS/5 (5 for 5 groups) **3.2**

SSR Score (AIS x 2) **6.4**

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): _____ Name (print): CAM Date: ___/___/___

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River - unnamed	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR3	Granamore Commonage - tributary stream of Douglas river	1st order	S 99347 98741
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: Y	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	Bedrock	Low	Calcareous
Widened	Boulder (>128mm)	Medium	**Siliceous**
Bank erosion - localised	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	**Very high**	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	Clean	**None**
Loose	Muddy bottom	**Slight**	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	Forestry
	Abundant		Tillage
			Urban
			Other – wet grassland/wet heath

Plate 1. Photographic record of sampling location – GR3.

FR3

River:	Code:	Date:	Time:
Station no.	**Location:**		**Grid (6 figure):**
	Stream Order:		**Stream flow:** Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	

Clarity	Discharge
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None <1cm: 1-5cm: 5-10cm: >10m

Litter: None – Present – Moderate - Abundant

Filamentous Algae:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture, Urban, Bog, Tillage, Forestry, Other

Sample retained: Y / N

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus:
None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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.OL.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

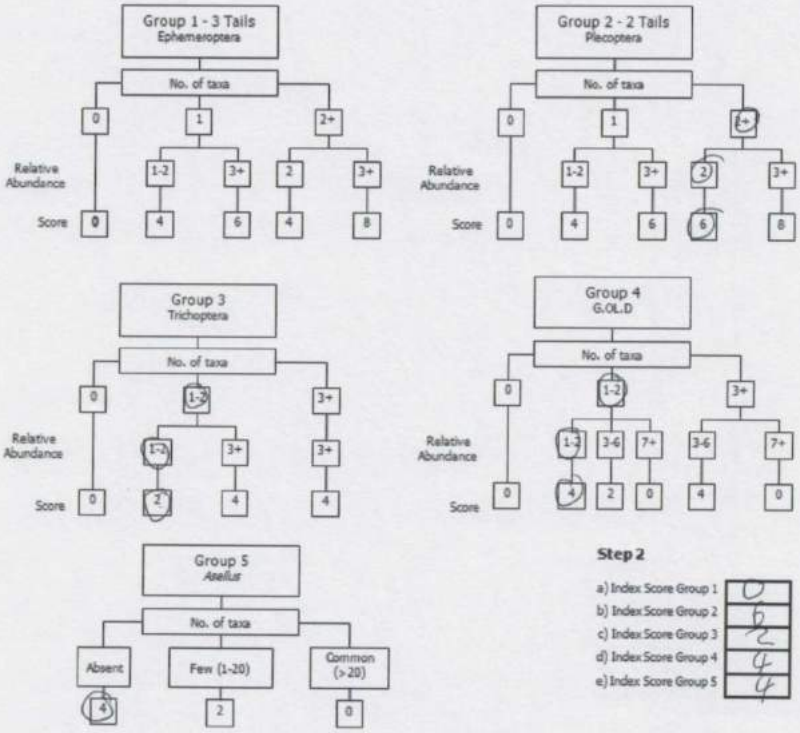
Ephemeroptera:		Plecoptera:	
Ecdyonurus Ab		*Leuctra* Ab	
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	1
Caenis Ab		*Baetis* Ab	
Paraleptophlebia Ab		*Diamesa* Ab	
Ephemera danica Ab		Other Plecop Ab	1
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa: 0	Total Relative Abundance: 0	Total no. of Taxa: 2	Total Relative Abundance: 2

Trichoptera:		G.OL.D:				Asellus:	
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab		Absent	0
Polycentropodidae Ab	1	*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab		Few (1-20)	
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab		Common (>20)	
Philopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab			
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab	1		
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab			
Glossosomatidae Ab		*Eiseniella* (Ol) Ab		Other GOLD Ab		NOTE: *Asellus* must be recorded as absent if none are found	
Lepidostomatidae Ab		Tubificidae (Ol) Ab					
Other Trichoptera Ab							
Total no. of Taxa: 1	Total Relative Abundance: 1	Total no. of Taxa: 1		Total Relative Abundance: 1			

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*.

GN3

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	6
c) Index Score Group 3	2
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) 16

Average Index Score (AIS) TIS/5 (5 for 5 groups) 3.2

SSR Score (AIS x 2) 6.4

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): _____ Name (print): CAM DUN Date: ____/____/____

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River - Leeawn	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR4	Granamore Commonage - tributary stream of Douglas river	1st order	S 99493 98934
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: N	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	Bedrock	Low	Calcareous
Widened	**Boulder (>128mm)**	Medium	**Siliceous**
Bank erosion	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	**Very high**	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	**Clean**	**None**
Loose	Muddy bottom	Slight	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	Forestry
	Abundant		Tillage
			Urban
			Other – wet grassland/wet heath

Plate 1. Photographic record of sampling location – GR4.

G24

River:	Code:	Date:	Time:
Station no.	**Location:**		**Grid (6 figure):**
	Stream Order:		**Stream flow:** Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff Gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	

Clarity	Discharge
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10m

Litter: None – Present – Moderate - Abundant

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Filamentous Algae:
None – Present – Moderate - Abundant

Sewage Fungus:
None – Present – Moderate - Abundant

Main land use u/s:
Pasture — Urban
Bog — Tillage
Forestry — Other

Sample retained: Y / N

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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.OL.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:	
Ecdyonurus Ab		*Leuctra* Ab	1
Rhithrogena Ab		*Isoperla* Ab	
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	1
Caenis Ab		*Perla* Ab	
Baetis rhodani Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	1
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa	0	**Total no. of Taxa**	3
Total Relative Abundance	0	**Total Relative Abundance**	3

Trichoptera:		G.OL.D:			
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab	
Polycentropodidae Ab	1	*Anamopyrgus* (G) Ab		*Chironomus* (D) Ab	
Rhyacophila Ab		*Physella* (G) Ab		Simuliidae (D) Ab	
Philopotamidae Ab		*Ancylus* (G) Ab		Dicranota (D) Ab	
Limnephilidae Ab		*Planorbis* (G) Ab		Tipulidae (D) Ab	
Sericostomatidae Ab		*Lumbriculus* (OI) Ab		Ceratopogonidae (D) Ab	
Glossosomatidae Ab		*Eiseniella* (OI) Ab		Other GOLD Ab	
Leptoceridae Ab		Tubificidae (OI) Ab			
Other Trichoptera Ab					
Total no. of Taxa	1	**Total Relative Abundance**	1	**Total no. of Taxa**	0
Total Relative Abundance	0				

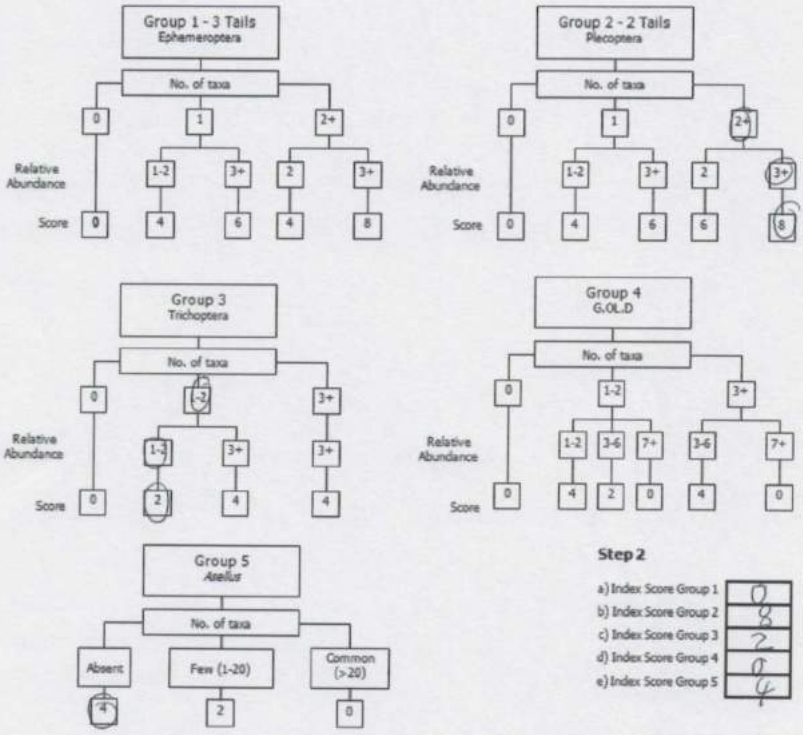
Asellus:	
Absent	0
Few (1-20)	
Common (>20)	

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*.

GR4

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	8
c) Index Score Group 3	2
d) Index Score Group 4	0
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)	Average Index Score (AIS) TIS/5 (5 for 5 groups)	SSR Score (AIS x 2)
14	2.8	5.6

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): _____ Name (print): CARL DUNN Date: ___/___/___

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River - Roundhill Brook	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR5	Granamore Commonage - Roundhill Brook - Tributary stream of Douglas river	2nd order	S 99339 99273
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	**None**	Flood
Fast	**Clear**	Slight	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: N	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	Bedrock	Low	Calcareous
Widened	**Boulder (>128mm)**	**Medium**	**Siliceous**
Bank erosion	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	Very high	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	**Clean**	**None**
Loose	Muddy bottom	Slight	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	Riffle	High
Present	Present	**Riffle/glide**	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	Forestry
	Abundant		Tillage
			Urban
			Other – wet grassland/wet heath

Plate 1. Photographic record of sampling location – GR5.

FN5

River:	Code:	Date:	Time:
Station no.	Location:		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	
Velocity	**Colour**
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	
Clarity	**Discharge**
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum: Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Filamentous Algae: None – Present – Moderate - Abundant

Main land use u/s:
Pasture — Urban
Bog — Tillage
Forestry — Other

Sample retained: Y / N

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus: None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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.OL.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:	
Ecdyonurus Ab		*Leuctra* Ab	1
Rhithrogena Ab		*Isoperla* Ab	1
Heptagenia Ab		*Protonemura* Ab	
Ephemerella Ab		*Amphinemura* Ab	
Caenis Ab		*Perla* Ab	
Baetis rhodani Ab		*Diamesa* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	2
Total no. of taxa	Total Relative Abundance	Total no. of Taxa	2 Total Relative Abundance

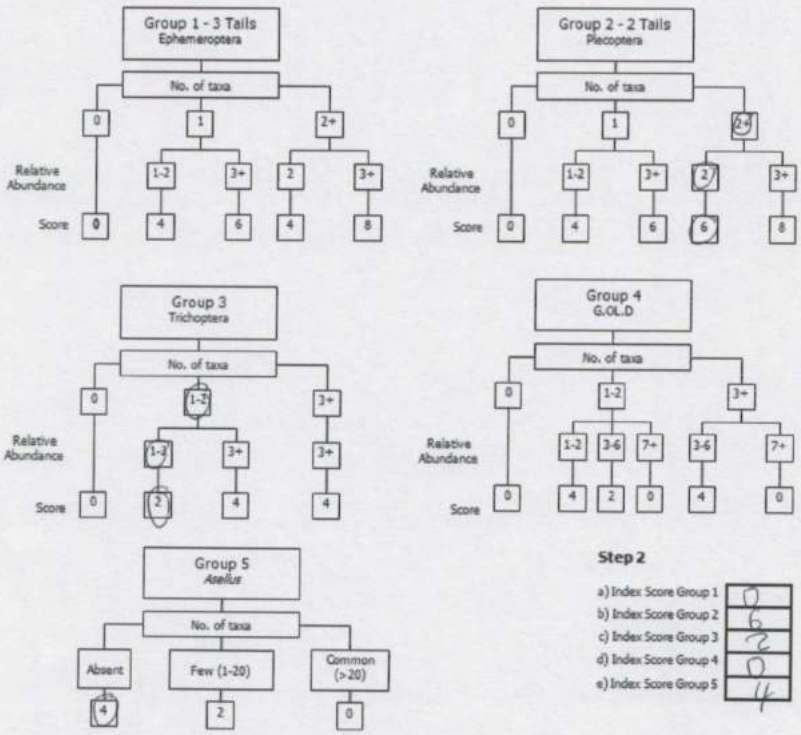
Trichoptera:		G.OL.D:			*Asellus*:	
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab	Absent	0
Polycentropodidae Ab	1	*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab	Few (1-20)	
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab	Common (>20)	
Rhiopotamidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab		
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab		
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab		
Glossosomatidae Ab		*Enchytraeidae* (Ol) Ab		Other GOLD Ab		
Lepidostomatidae Ab		Tubificidae (Ol) Ab				
Other Trichoptera Ab						
Total no. of Taxa	1 Total Relative Abundance 1	Total no. of Taxa	0	Total Relative Abundance 0		

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*.

GRS

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	6
c) Index Score Group 3	2
d) Index Score Group 4	0
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:)	Average Index Score (AIS) TIS/5 (5 for 5 groups)	SSR Score (AIS x 2)
12	2.4	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): _____ Name (print): CAM DUFF Date: ___/___/___

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR6	Granamore Commonage - below the confluence of Roundhill Brook and Douglas river	2nd order	S 98603 99290
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: N	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	Bedrock	Low	Calcareous
Widened	Boulder (>128mm)	**Medium**	**Siliceous**
Bank erosion	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	Very high	
	Fine gravel (2 - 8mm)		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	**Clean**	**None**
Loose	Muddy bottom	Slight	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	Moderate
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		**None**
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	**Forestry – recent clearfell**
	Abundant		Tillage
			Urban
			Other – wet grassland/wet heath

Plate 1. Photographic record of sampling location – GR6.

BR6

River:	Code:	Date:	Time:
Station no.	Location:		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	

Clarity	Discharge
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (>128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum: Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Filamentous Algae: None – Present – Moderate - Abundant

Main land use u/s:
Pasture — Urban
Bog — Tillage
Forestry — Other

Sample retained: Y / N

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Sewage Fungus: None – Present – Moderate - Abundant

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

General Comments:

Macroinvertebrate Composition

The macroinvertebrates are divided into the following 5 specific groups:

- Group 1 = Ephemeroptera (2-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:	
Ecdyonurus Ab	1	*Leuctra* Ab	1
Rhithrogena Ab		*Isoperla* Ab	1
Heptagenia Ab		*Protonemura* Ab	2
Ephemerella Ab		*Amphinemura* Ab	
Caenis Ab		*Perla* Ab	
Baetis/rhodani Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	
Other Ephem Ab		Other Plecop Ab	
Total no. of taxa	1	**Total Relative Abundance**	1
		Total no. of Taxa	3
		Total Relative Abundance	4

Trichoptera:		G.O.L.D:			
Hydropsychidae Ab	1	*Lymnaea* (G) Ab		Chironomidae (D) Ab	
Polycentropodidae Ab	1	*Potamopyrgus* (G) Ab		*Chironomus* (D) Ab	
Rhyacophila Ab	1	*Planorbis* (G) Ab		Simuliidae (D) Ab	
Rhyacophilidae Ab		*Ancylus* (G) Ab		*Dicranota* (D) Ab	
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab	1
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab	
Glossosomatidae Ab		*Eiseniella* (Ol) Ab		Other GOLD Ab	
Leptoceridae Ab		Tubificidae (Ol) Ab			
Other Trichoptera Ab					
Total no. of Taxa	3	**Total Relative Abundance**	3	**Total no. of Taxa**	1
				Total Relative Abundance	1

Asellus	
Absent	0
Few (1-20)	
Common (>20)	

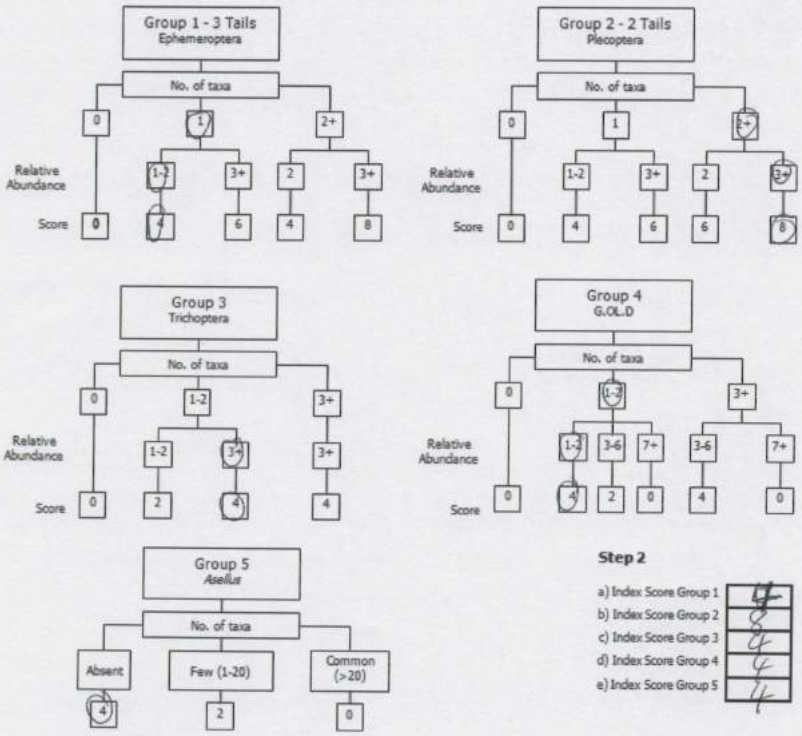
NOTE: *Asellus* must be recorded as absent if none are found

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*.

GA6

clean with moss

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	4
b) Index Score Group 2	8
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) **24**

Average Index Score (AIS) TIS/5 (5 for 5 groups) **4.8**

SSR Score (AIS x 2) **9.6**

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): _____ Name (print): CAM DIXON Date: ____/____/____

SUAS Water Quality Sampling

River:	Code:	Date:	Sample Taken By:
Douglas River	IE_EA_09D020200	19/02/2019	Faith Wilson
Sample Number:	**Location:**	**Stream Order:**	**Grid Reference:**
GR7	Granamore Commonage – Douglas River - below the ford at Cordoo/Corragh	2nd order	S 98265 00112
Velocity:	**Clarity:**	**Colour:**	**Discharge:**
Torrential	Very clear	None	Flood
Fast	**Clear**	**Slight**	**Normal**
Moderate	Slightly turbid	Moderate	Low
Slow	Highly turbid	High	Very low
Very Slow			Dry
			Recent flood
Modifications: Y	**Dominant Types:**	**Slope:**	**Geology:**
Canalised	Bedrock	**Low**	Calcareous
Widened	Boulder (>128mm)	Medium	**Siliceous**
Bank erosion	**Cobble (32 - 128mm)**	High	Mixed
Arterial drainage	**Gravel (8 – 32mm)**	Very high	
Stone ford created upstream	**Fine gravel (2 - 8mm)**		
	Sand (0.25mm – 2mm)		
	Silt (<0.25mm)		
Substratum Condition:	**Substratum:**	**Degree of Siltation:**	**Depth of Mud:**
Compacted	**Stoney bottom**	**Clean**	**None**
Loose	Muddy bottom	Slight	<1cm
Normal	Mud over stones	Moderate	1-5cm
		Heavy	5-10cm
			>10cm
Litter:	**Filamentous Algae:**	**Stream Flow:**	**Shading:**
None	**None**	**Riffle**	High
Present	Present	Riffle/glide	**Moderate**
Moderate	Moderate	Slow flow	Low
Abundant	Abundant		None
Stock Access:	**Sewage Fungus:**	**Sample Type (Mins):**	**Main Land Use Adjacent/Upstream:**
Yes - from the adjoining commonage	**None**	**Kick sample - 3**	Pasture
	Present	Stone washing	**Bog**
	Moderate	Weed sweep	**Forestry – recent clearfell**
	Abundant		Tillage
			Urban
			Other – wet grassland/wet heath

Plate 1. Photographic record of sampling location – GR7.

GR7

River:	Code:	Date:	Time:
Station no.	Location:		Grid (6 figure):
	Stream Order:		Stream flow: Riffle / Riffle/Glide / Slow flow

Field Chemistry	
DO%	
DO mg/l	
Temp (°C)	
Conductivity	
pH	
Bank width (cm)	
Wet width (cm)	
Avg Depth (cm)	
Staff gauge	

Velocity	Colour
Torrential	None
Fast	Slight
Moderate	Moderate
Slow	High
Very slow	

Clarity	Discharge
Very clear	Flood
Clear	Normal
Slightly turbid	Low
Highly turbid	Very Low
	Dry
	Recent Flood

Modifications: Y/N Canalised-widened-bank erosion-arterial drainage

Dominant Types:
Bedrock
Boulder (> 128mm)
Cobble (32-128mm)
Gravel (8-32mm)
Fine Gravel (2-8mm)
Sand (0.25-2mm)
Silt (<0.25mm)

Slope: Low – Medium – High – Very High

Geology: Calcareous-Siliceous-Mixed

Substratum Condition: Calcareous-Compacted-Loose - Normal

Substratum:
Stoney bottom-Muddy bottom-Mud over stones

Degree of siltation: Clean-Slight-Moderate-Heavy

Depth of mud: None: <1cm: 1-5cm: 5-10cm: >10cm

Litter: None – Present – Moderate - Abundant

Shading: High – Moderate – Low - None

Cattle access Y: upstream – downstream or N

Photo: Y / N

Filamentous Algae: None – Present – Moderate - Abundant

Sewage Fungus: None – Present – Moderate - Abundant

Main land use u/s:
Pasture
Bog
Forestry
Urban
Tillage
Other

Sample retained: Y / N

Sampled in Minutes:
Pond net x
Stone wash x
Weed sweep x

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.OL.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:	
Ecdyonurus Ab		*Leuctra* Ab	2
Rhithrogena Ab		*Isoperla* Ab	1
Heptagenia Ab		*Protonemura* Ab	1
Ephemerella Ab		*Amphinemura* Ab	
Cloeon Ab		*Nemoura* Ab	
Baetis rhodani Ab		*Dinocras* Ab	
Ephemera danica Ab		Other Plecop Ab	1
Other Ephem. Ab		Other Plecop Ab	
Total no. of taxa	Total Relative Abundance	Total no. of Taxa	4 Total Relative Abundance 5

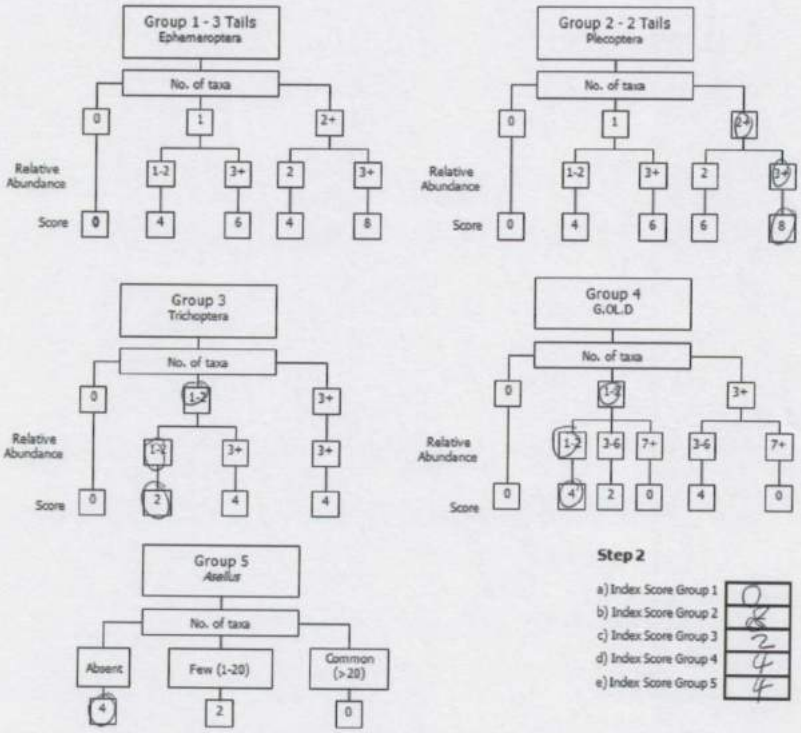
Trichoptera:		G.OL.D:			
Hydropsychidae Ab		*Lymnaea* (G) Ab		Chironomidae (D) Ab	*Asellus*:
Polycentropodidae Ab	1	*Anisus/planorbis* (G) Ab		*Chironomus* (D) Ab	Absent 0
Rhyacophila Ab		*Planorbis* (G) Ab		Simuliidae (D) Ab	Few (1-20)
Philopotamidae Ab	1	*Ancylus* (G) Ab		*Dicranota* (D) Ab	Common (>20)
Limnephilidae Ab		*Physa* (G) Ab		Tipulidae (D) Ab	1
Sericostomatidae Ab		*Lumbriculus* (Ol) Ab		Ceratopogonidae (D) Ab	
Glossosomatidae Ab		*Eiseniella* (Ol) Ab		Other GOLD Ab	
Lepidostomatidae Ab		Tubificidae (Ol) Ab			
Other Trichoptera Ab					
Total no. of Taxa	2 Total Relative Abundance 2	Total no. of Taxa	1	Total Relative Abundance	1

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*.

FR7

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	8
c) Index Score Group 3	2
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) 18

Average Index Score (AIS) TIS/5 (5 for 5 groups) 3.6

SSR Score (AIS x 2) 7.2

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

> 7.25	> 6.5 – 7.25	<6.5
Probably not at risk	Indeterminate Stream may be at risk	Stream at risk
☐	☐	☐

Surveyor (signed): _____ Name (print): Cam/ Dillon Date: ___/___/___