NESS & BEAULY FISHERIES TRUST

River Beauly Catchment

Electro-fishing Results 2016

Waterfall on the Breakachy Burn. Photo N. Barker

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Table of Contents

1 INTRODUCTION

In the summer and autumn of 2016, the Ness and Beauly Fisheries Trust (NBFT) undertook a programme of electro-fishing in the Beauly catchment. In total, 15 surveys were executed: nine fully quantitative and five timed. See **Appendix 1** for a visual representation of site locations and **Appendix 2** for individual site photos.

2 ELECTRO-FISHING METHODOLOGY

2.1 FULLY QUANTITATIVE SURVEYS

Back-pack electro-fishing equipment was utilised during the 2016 season. Fully quantitative surveys were carried out and recorded in accordance with the protocols established by the Scottish Fisheries Co-ordination Centre (SFCC). Where practicable, survey areas were isolated by placing stop nets at the upstream and downstream extent of the length to be fished to prevent fish from evading capture and escaping from the area.

The survey area was fished through in a methodical and thorough manner, with fish being retained in water filled buckets. Captured fish were lightly anaesthetised in order to facilitate species identification and accurate fork length measurements (mm). In most cases, the area was fished through a second and third time in an attempt to remove the majority of fish from the area and to provide a depletion curve for each species. By applying stream dimensions such as wetted width along with numbers of fish captured in successive fishing runs to a statistical formula, an estimate fish density (number of fish/100m^2, the Zippin value) was calculated.

2.2 TIME DELINEATED SURVEYS

Timed surveys involved electro-fishing in an upstream direction in a thorough and methodical manner for a set period of time, usually five or ten minutes. At the end of each time period the number and species of fish was recorded and divided by the number of minutes fished provide a catch per unit of effort value (CPUE).

3 DATA ANALYSIS

In their treatment of fully quantitative survey data, NBFT have historically ranked fish densities under

the classification scheme described by the SFCC. NBFT now have a sizeable data set in terms of fish densities within the Beauly catchment. Analysis of these data has enabled NBFT to produce their own classification scheme based purely on data gathered from past fish surveys in the Beauly district. Fish densities were classified by splitting the results of all fully quantitative surveys since 2006 in to quartiles. The quartiles of a set of values are the three points that enable data sets to be divided in to four groups, in this case: poor, moderate, good and excellent. Fish densities with a value of zero were omitted from analysis and were simply classed as absent. **Table 1** below shows the classification scheme for the Beauly catchment.

Table 1 – Density Classification of Juvenile Salmonids on the Beauly Catchment

Salmon Fry (No/100m^2)	Classification	Salmon Parr (No/100m^2)	Trout Fry (No/100m^2)	Classification	Trout Parr (No/100m^2)
0	Absent	0	0	Absent	0
0.1 – 16	Poor	0.1 - 10	0.1 - 2	Poor	0.1 - 1
16.1 – 52	Moderate	10.1 - 21	2.1 – 8	Moderate	1.1 - 3
52.1 – 89	Good	21.1 - 37	8.1 - 24	Good	3.1 – 9
89.1 – 398	Excellent	37.1 - 58	24.1 - 219	Excellent	9.1 – 60

4 RESULTS

4.1 STRATHFARRAR

4.1.1 Culligran Burn (CULL1)

In 2015, the fully quantitative survey of Site CULL1 revealed the lowest ever recorded salmon fry density (1/100m^2) since surveys began in 2002 (**Figure 1**). Such a result would suggest a relative dearth of spawning activity in the vicinity of the Site in the autumn/winter of 2015. It was heartening to note an increase in salmon fry density to 17/100m^2 in 2016 that would be classed as 'moderate'. Density of salmon parr (1++) was 22/100m^2 and would be classed as 'good'. These results suggest a site-specific issue in 2015 as densities of older year classes were encouraging. However, it should be noted that fry and parr densities are both below the mean densities for the site of 57/100m^2 and 26/100m^2 respectively.

Juvenile trout were present in 2016. The trout fry density of 5/100m^2 is below the mean density of 6/100m^2 and towards the lower end of the historical range for the site and would be classed as 'moderate'. Trout parr (1++) were well represented in 2016 at a density of 8/100m^2 and would be classed as 'excellent'.

Four eels were also captured in 2016 generating a minimum density estimate of 3/100m^2.

When examining year classes from the 2016 survey, **Figure 2** clearly shows the presence of three year classes. 0+ salmon fry are clearly the most abundant year class. Older year classes are dominated by the 1+ cohort. Salmon parr aged 2+ were present in much lower numbers suggesting that the majority of salmon parr of Culligran Burn origin will smolt at two years old.

Figure 1 – Density of Juvenile Salmon and Trout from Site CULL1

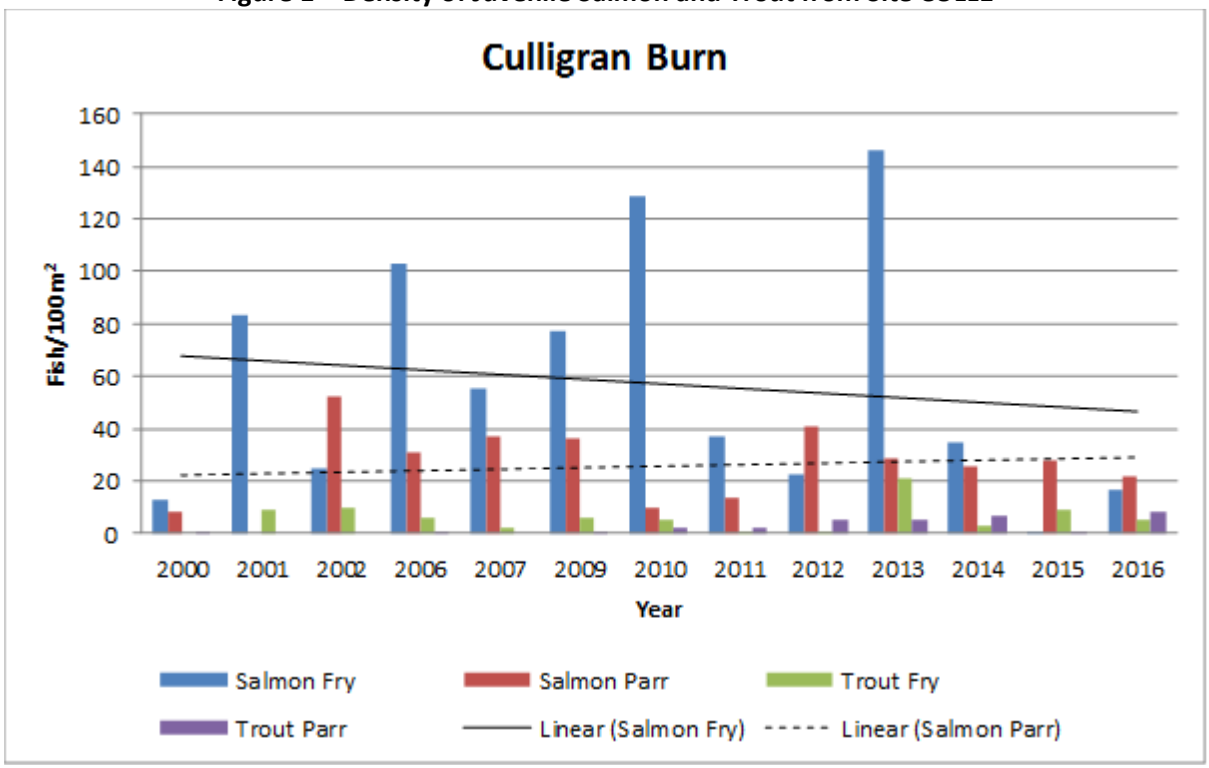
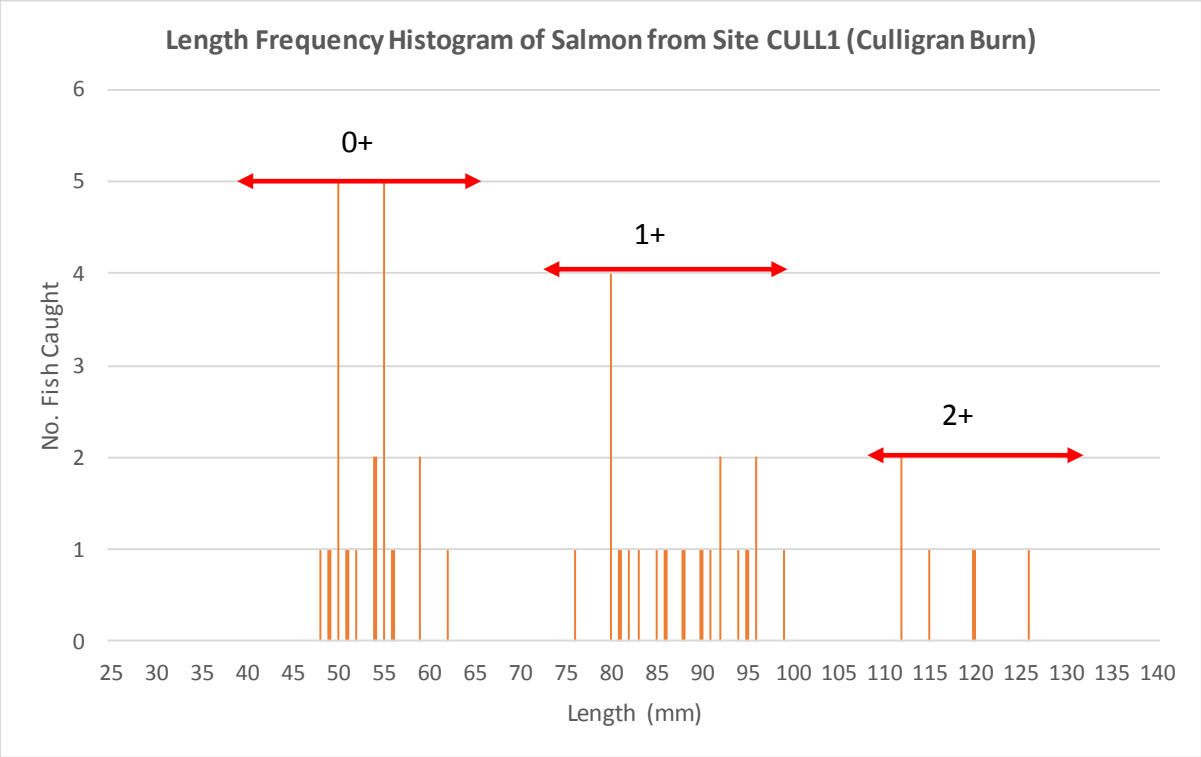


Figure 2 – Length Frequency Histogram of Salmon from Site CULL1



4.1.2 Neaty Burn (NEA1)

The Neaty Burn is heavily impacted by abstraction in its head waters and this is reflected by the continuously low flows experienced during survey. Despite this, the Neaty Burn supports a population of salmon.

The 2016 salmon fry density of 102/100m^2 would be classed as 'excellent' and is the second highest density ever recorded for the Site (**Figure 3**). It should be mentioned that the very low flows experienced in 2016 impacted on the operative's capture efficiency and a number of salmon fry were seen to avoid capture. The reported salmon fry density of 102/100m^2 is therefore likely to be an underestimate of the true numbers present.

Conversely, numbers of salmon parr (1++) were extremely low. The salmon parr density of 1/100m^2 is below the mean density of 6/100m^2 and would be classed as 'poor'. Continuous low flows, coupled with the site's close proximity to the mainstem of the River Farrar may go some way in explaining the continued poor numbers of salmon parr.

Two eels were also captured generating a minimum density estimate of 2/100m^2.

Examination of juvenile salmon year classes (**Figure 4**) shows the presence of two cohorts: 0+ and 2+. 0+ salmon fry are clearly the most dominant whilst 1+ salmon parr were found to be missing.

Figure 3 – Density of Juvenile Salmon and Trout from Site NEA1 (Neaty Burn)

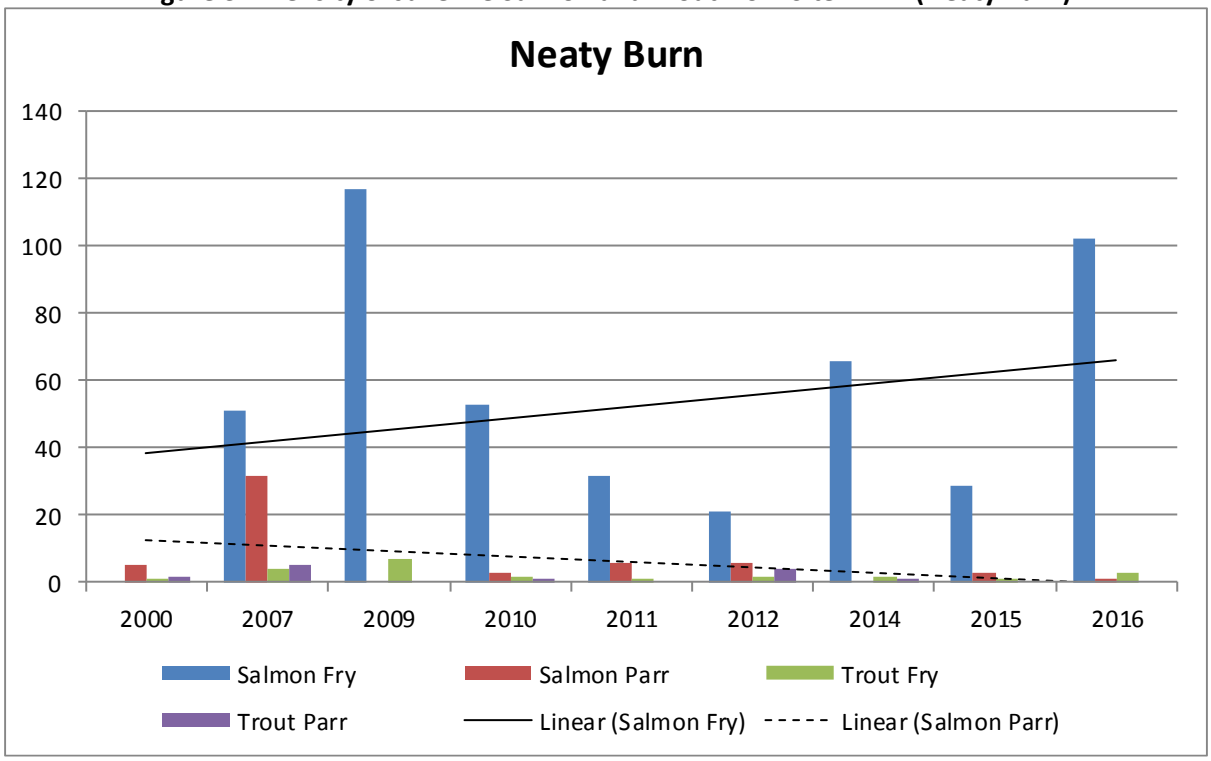
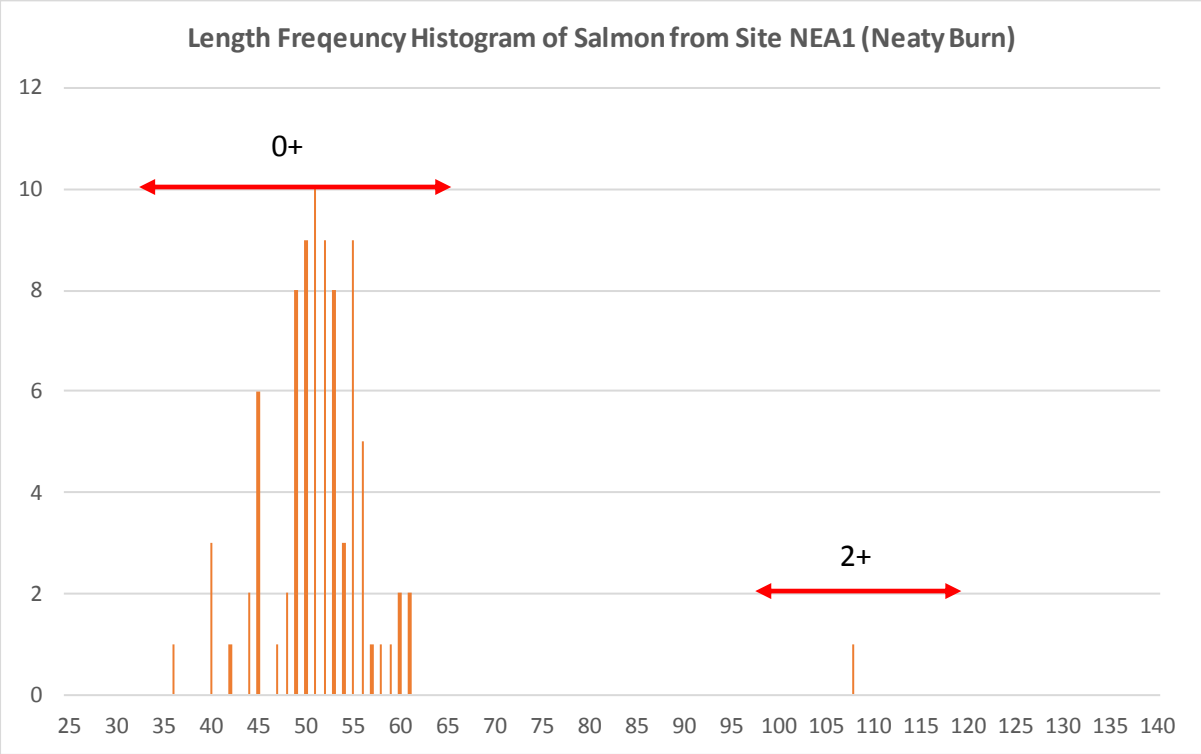


Figure 4 – Length Frequency Histogram of Salmon from Site NEA1 (Neaty Burn)



4.1.3 River Farrar (FAR1)

With the exception of the survey carried out in 2000, density of salmon fry has ranged from 15/100m^2 to 24/100m^2 (**Figure 5**). An increase to 45/100m^2 in 2016 may be indicative of more spawning activity in the winter of 2015. The 2016 salmon fry density would be classed as 'moderate' and is below the mean density of 46/100m^2. The 2016 salmon parr (1++) density of 18/100m^2 was less encouraging and was also below the mean density of 37/100m^2. Salmon parr density would be classed as 'moderate'.

Results from surveys between 2011 and 2016 raise questions in to mainstem habitat utilisation, particularly in respect of 0+ salmon fry. Site FAR1 is the only mainstem core monitoring site downstream of Beannacharan Dam. NBFT intend to increase coverage of the mainstem in 2017 to investigate if there are indeed issues with mainstem habitat utilisation.

No other fish species were captured during the 2016 survey.

Examination of year classes at FAR1 (**Figure 6**) showed the presence of three year classes. 0+ salmon fry are clearly the most abundant whilst older year classes are dominated by 1+ salmon parr. 2+ salmon were recorded in low numbers.

Figure 5 – Density of Juvenile Salmon and Trout from Site FAR1 (River Farrar)

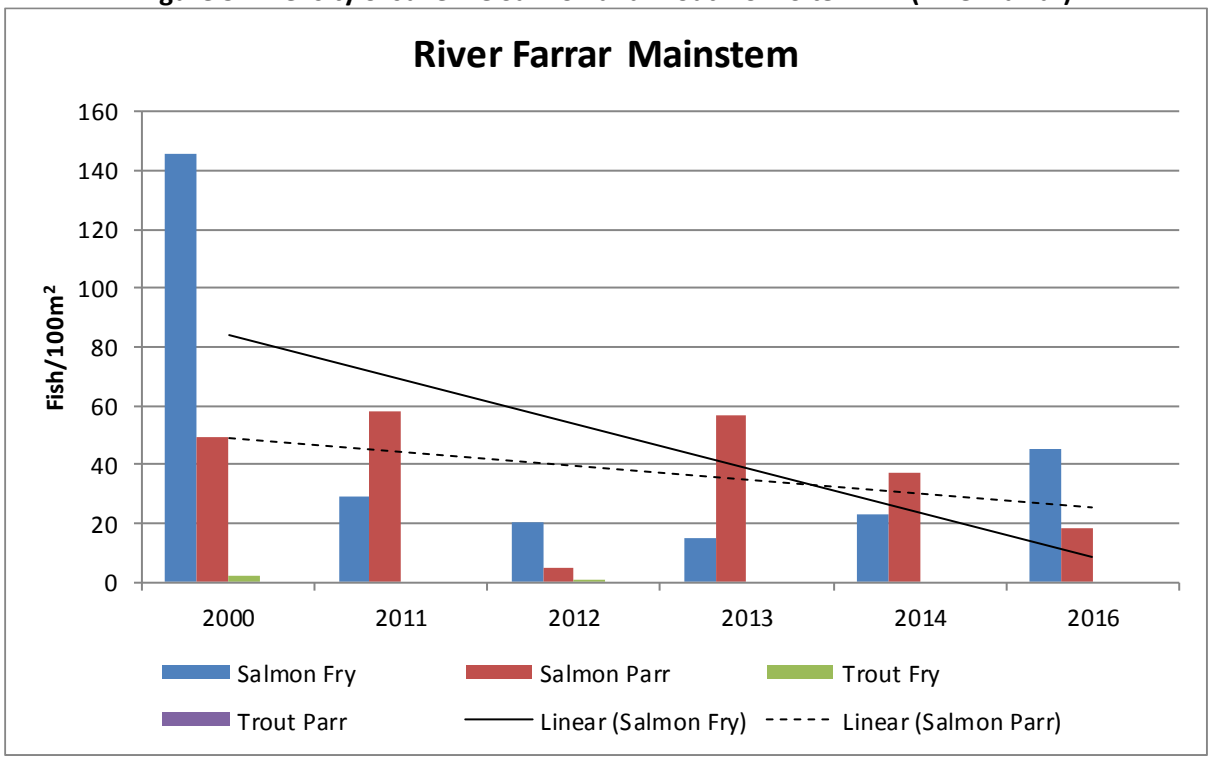
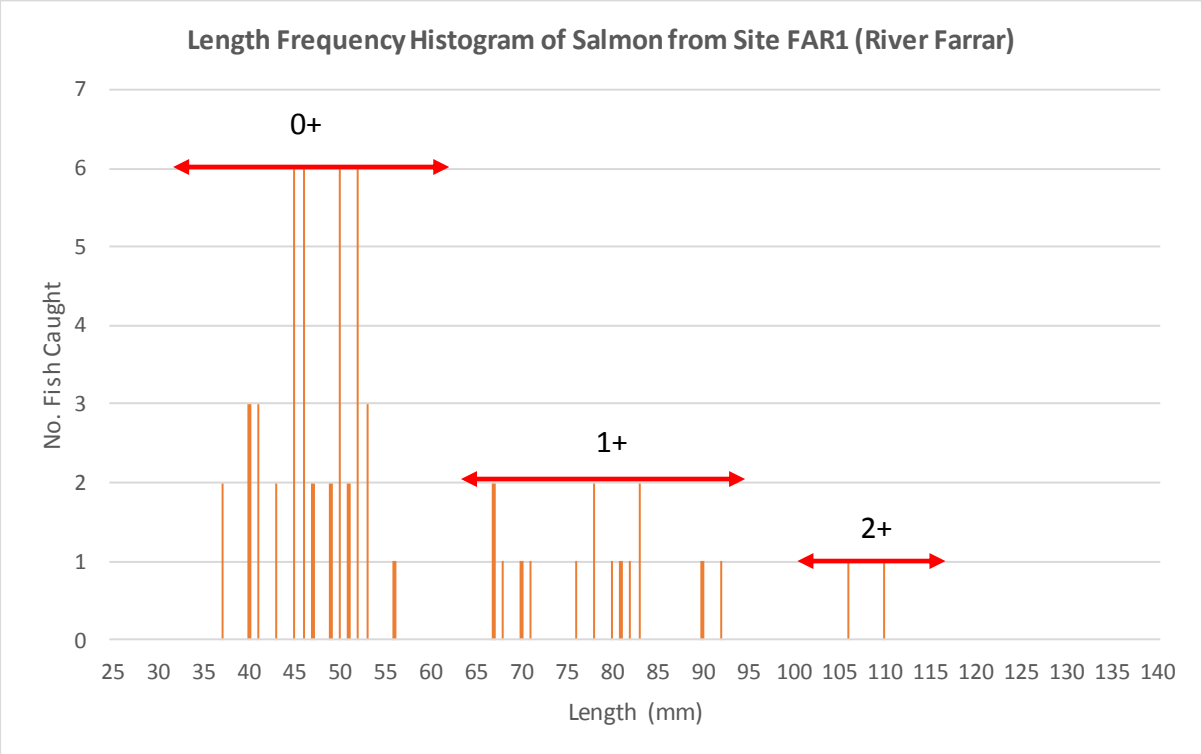


Figure 6 – Length Frequency Histogram of Salmon from Site FAR1



4.2 LOWER RIVER BEAULY CATCHMENT

4.2.1 Bruiach Burn (BRU2)

In 2014, NBFT reported large changes to the instream habitat as Site BRU2 following large winter spates. It is believed that these changes may have impacted on the density of juvenile salmon and trout. Surveys conducted in 2015 and 2016 appear to show that the instream habitat has stabilised.

Between 2015 and 2016, density of salmon fry dropped from 87/100m^2 to 77/100m^2 (**Figure 7**). The 2016 salmon fry density is below the mean density for the site of 101/100m^2 but would still achieve a density classification of 'good'. Numbers of salmon parr (1++) remained static between 2015 and 2016 at a density of 39/100m^2; this is above the mean density of 36/100m^2 and towards the upper end of the historical range of 18/100m^2 and 50/100m^2. The 2016 salmon parr density would be classed as 'excellent'. **Figure 7** would suggest that the long-term data set in respect of juvenile salmon densities is relatively stable.

Following an exceptionally high density of trout fry in 2013, surveys conducted since then appear to

show an overall decline in 0+ trout. The 2016 density of 13/100m^2 is below the mean density of 45/100m^2 and is towards the lower end of the historical range of 4/100m^2 – 184/100m^2. The most recent trout fry density would achieve a density classification of 'good'. Conversely, density of trout parr (1++) had remained stable. The 2016 trout parr density of 7/100m^2 would be classed as 'good'.

A number of eels were also captured during the 2016 survey achieving a minimum density estimate of 7/100m^2.

When examining year classes of juvenile salmon, **Figure 8** shows two cohorts: 0+ and 1+. 2+ salmon parr were found to be absent from the 2016 survey. These results are in line with the 2015 survey where only two individuals aged 2+ were encountered. This would suggest that most fish of Bruiach Burn origin will smolt at two years old.

Figure 7 – Density of Juvenile Salmon and Trout from Site BRU2 (Bruiach Burn)

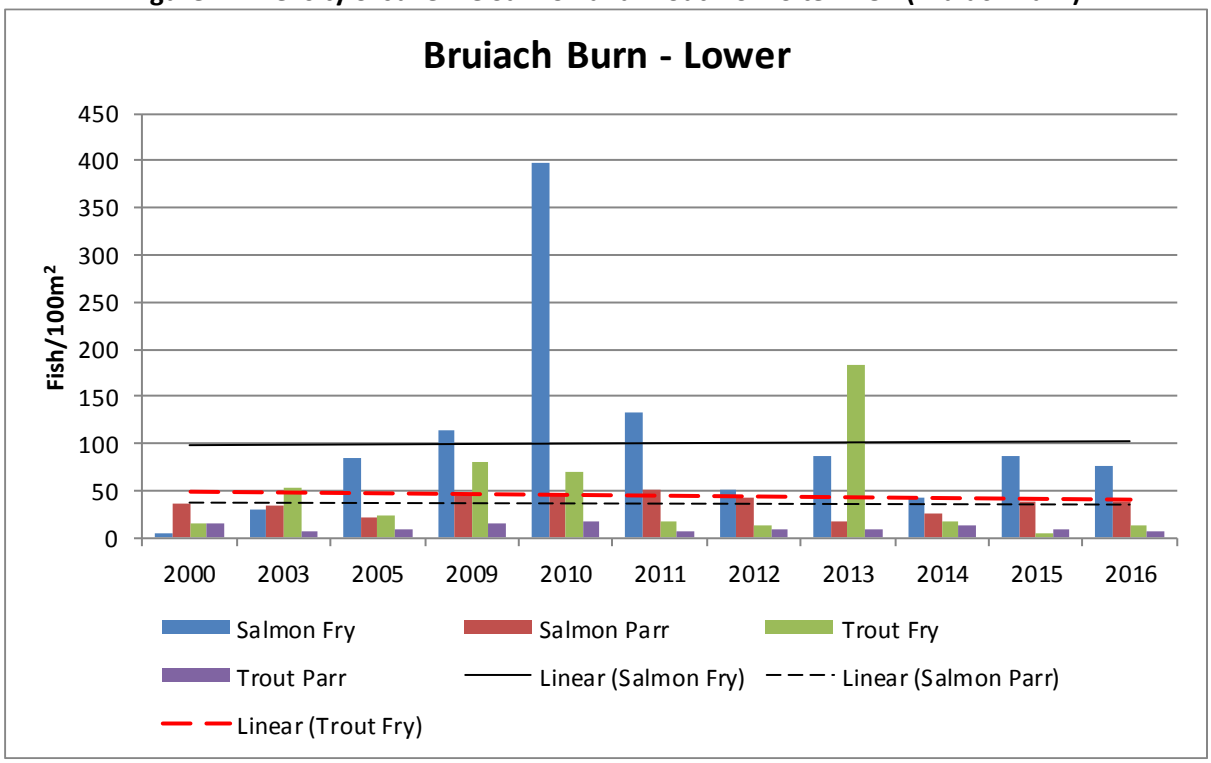
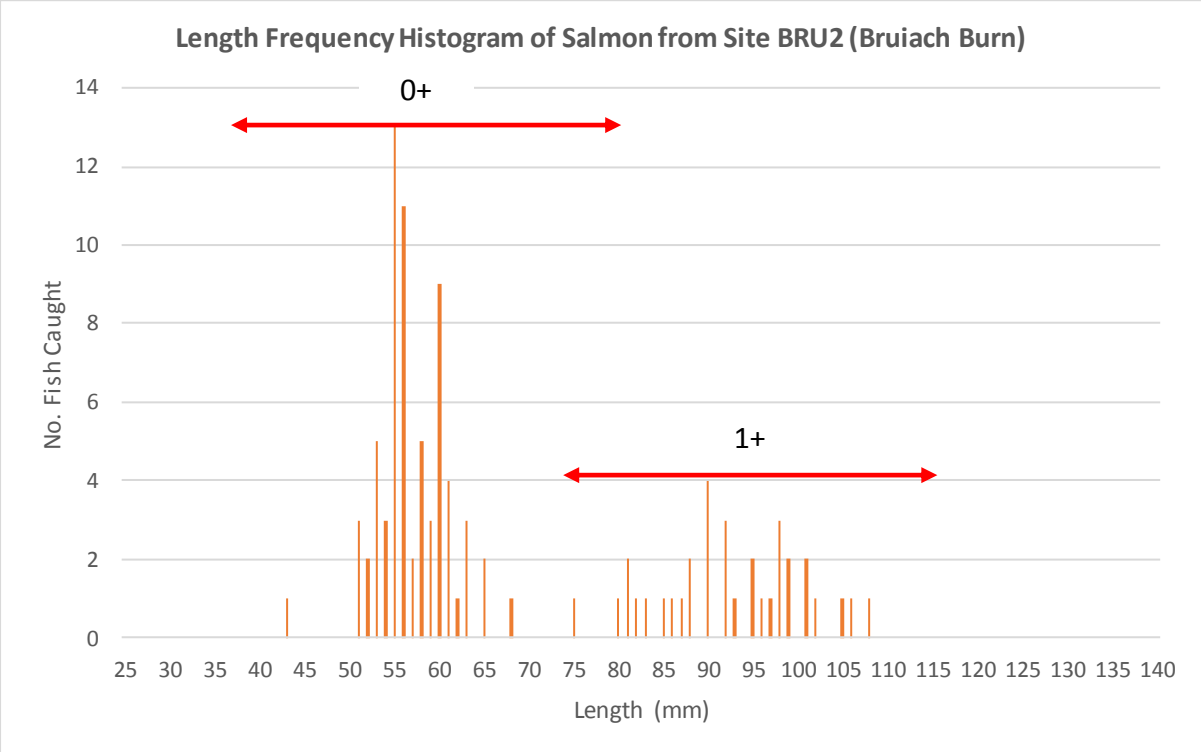


Figure 8 – Length Frequency Histogram of Salmon from Site BRU2 (Bruiach Burn)



4.2.2 Belladrum Burn (BEL2)

Following salmon fry densities of 13/100m^2 in 2014 and 24/100m^2 in 2015 it was heartening to note an increase to 48/100m^2 in 2016 (**Figure 9**). The 2016 salmon fry density is below the average density of 55/100m^2 yet well within the historical range of 0/100m – 114/100m^2.

Density of salmon parr (1++) has remained remarkably consistent between 2014 and 2016. The 2016 salmon parr density was 25/100m^2, marginally lower than the average of 28/100m^2 and would be classed as 'good'.

In terms of trout fry, it would appear numbers have dropped since the exceptionally high density of 218/100m^2 observed in 2013. The 2016 trout fry density was 43/100m^2 which is below the average density of 53/100m^2 and would be classed as 'excellent'. Similarly, the trout parr (1++) density was recorded as 9/100m^2 which is below the mean density of 12/100m^2 yet would still be classed as 'excellent'.

Two eels were also captured during the 2016 survey generating minimum density estimate of 2/100m^2.

Examination of year class in strength in salmon in 2016 revealed three cohorts: 0+, 1+ and 2+ (**Figure 10**). 0+ salmon fry were clearly the most abundant whilst older year classes were dominated by 1+ parr. The 2+ cohort comprised of two individual fish suggesting that most fish of Belladrum Burn origin will smolt at two years old. These results are in line with those of the 2015 electro-fishing surveys and the results of the adult scale sampling programme where only a small proportion of the catch from the Lower Beauly consisted of two-year-old smolts.

Figure 9 – Density of Juvenile Salmon and Trout from Site BEL2 (Belladrum Burn)

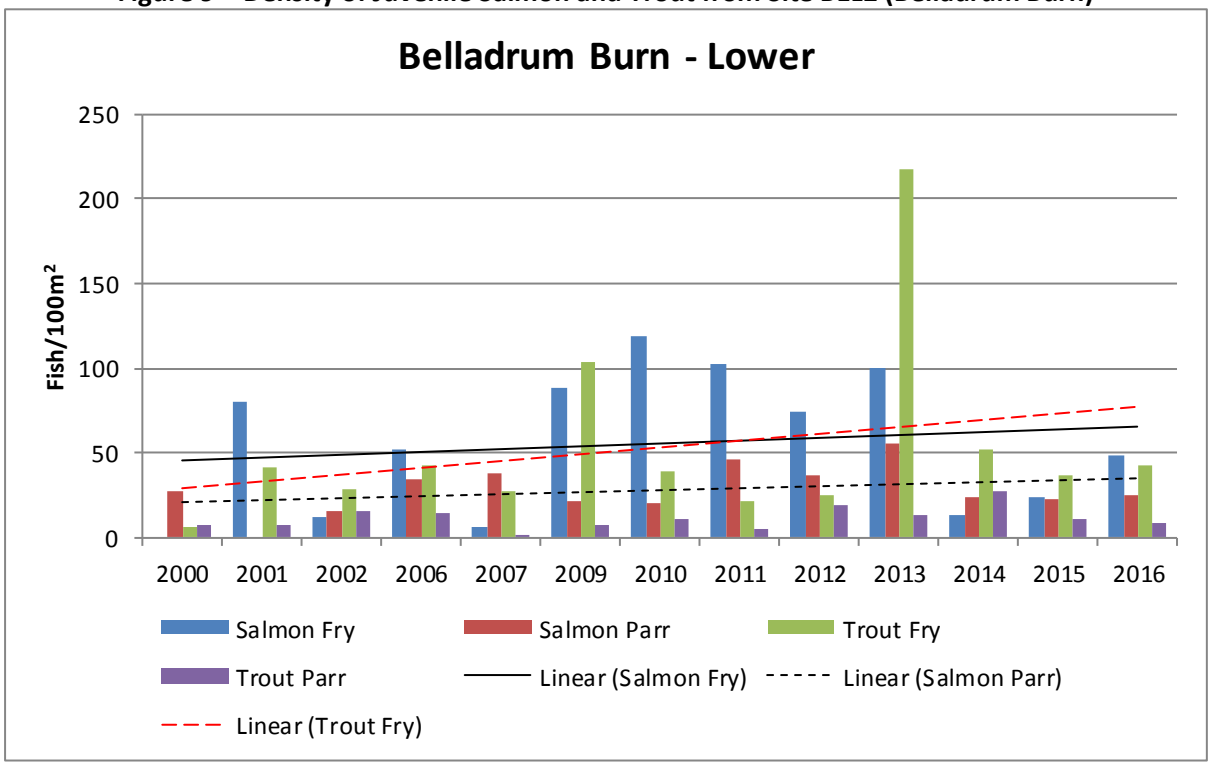
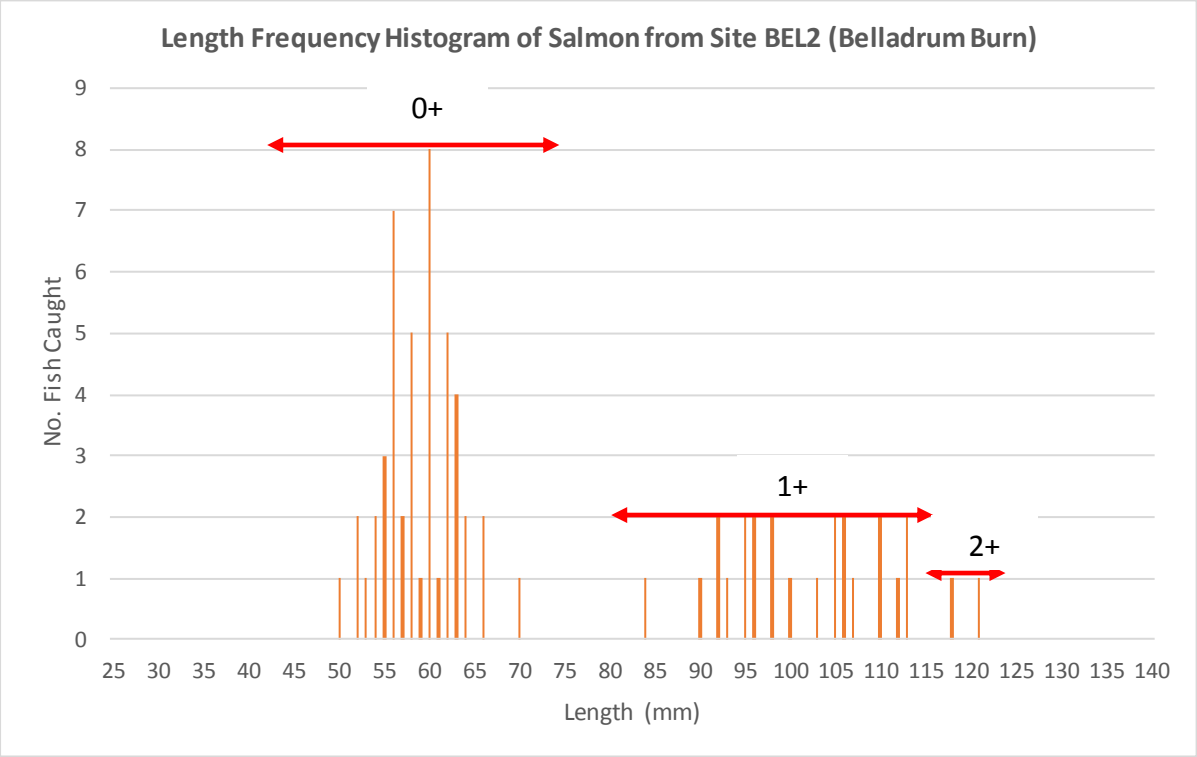


Figure 10 – Length Frequency Histogram of Salmon from Site BEL2 (Belladrum Burn)



4.2.3 Culburnie Burn (CULB1)

Results from the quantitative survey of Site CULB1 in 2016 suggest a degree salmon spawning success in the vicinity of the site in the winter of 2015 (**Figure 11**). This is on the back of poor/absent densities between 2012 and 2015. The 2016 salmon fry density of 78/100m^2 would be classed as 'good'.

Salmon parr (1++) density in 2016 was 28/100m^2. This figure is above the mean density of 25/100m^2 and well within the boundaries of the historical range of 7/100m^2 to 48/100m^2. The 2016 salmon parr density would be classed as 'good'.

In terms of trout fry density, the 2016 result is in stark contrast to results gained between 2000 and 2015. The most recent trout fry density was 6/100m^2: the lowest on record and would be classed as 'moderate'. Given the relatively encouraging trout fry densities from the neighbouring burns of the Bruiach and Belladrum, this raises questions over the most recent result. Spawning observations carried out on the Culburnie and Black Burns during the autumn of 2016 showed sea trout spawning

in earnest on the 1st of November whilst salmon redds were not observed until 21st November. It is therefore possible that the existing sea trout redds (assuming there were some) in the vicinity of Site CULB1 were 'over cut' by salmon.

Figure 11 – Density of Juvenile Salmon and Trout from Site CULB1 (Culburnie Burn)

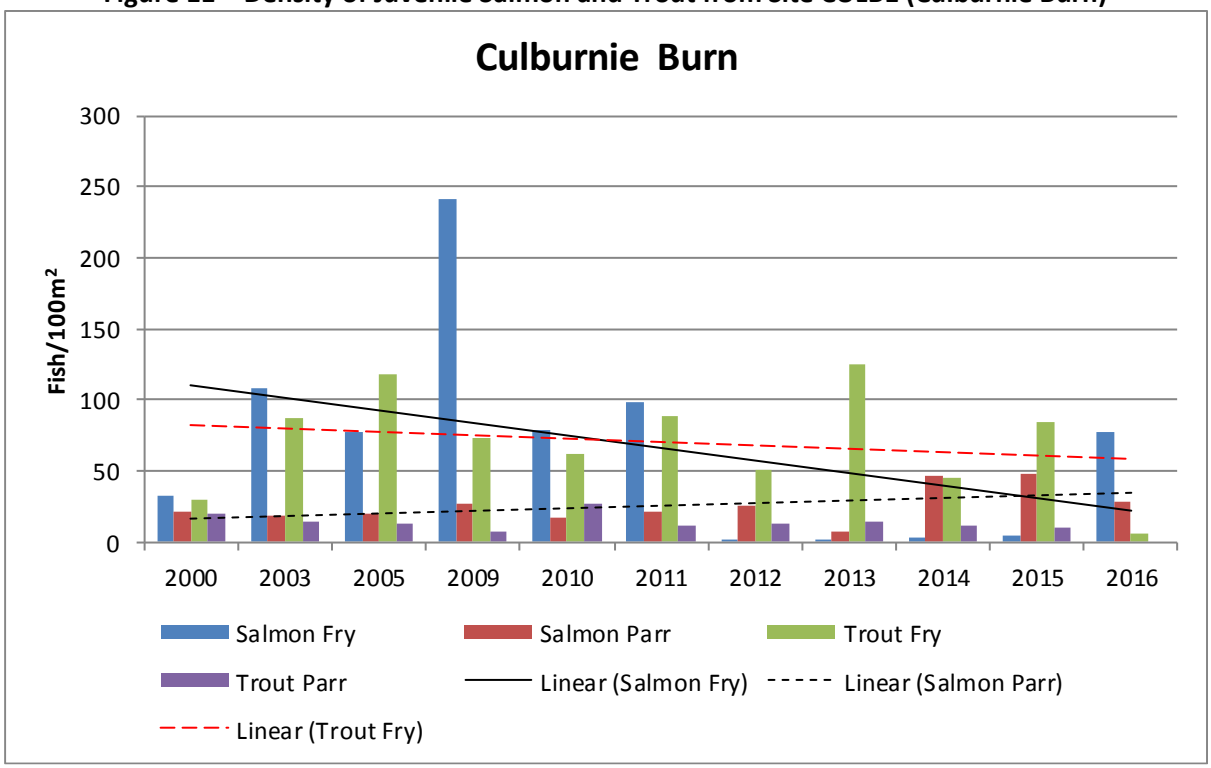
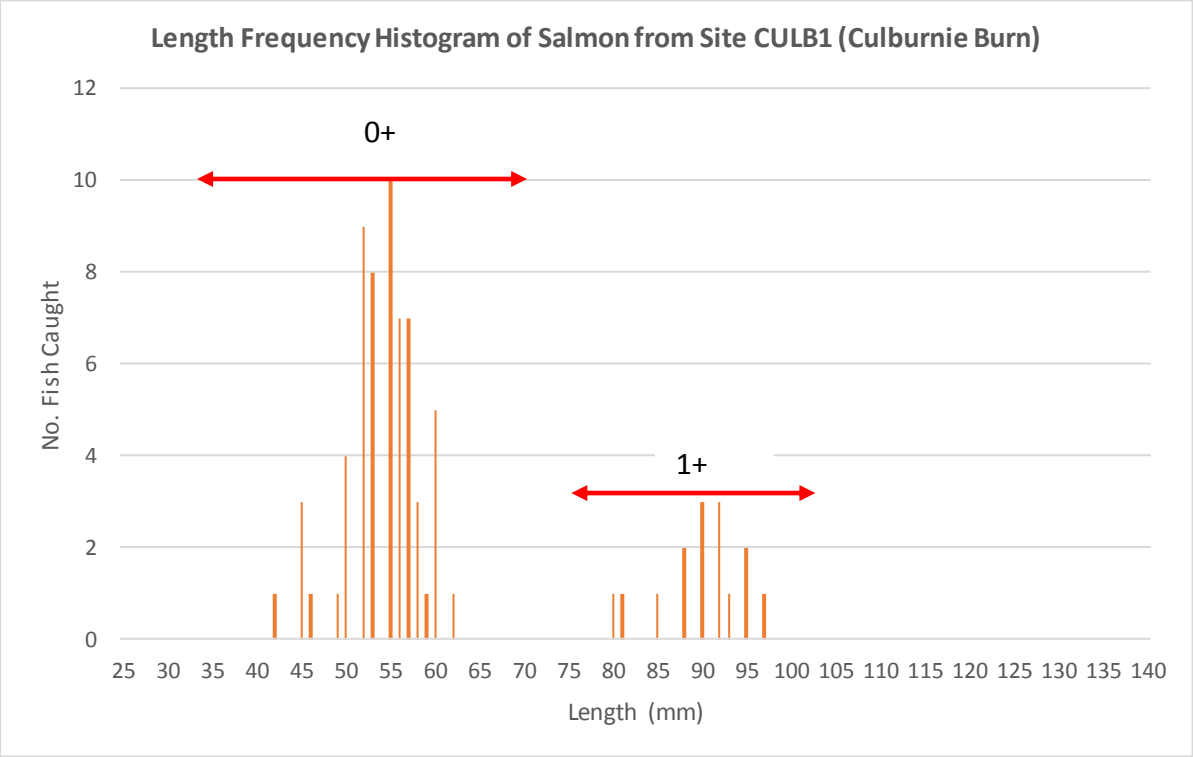


Figure 12 – Length Frequency Histogram of Salmon from Site CULB1 (Cuburnie Burn)



4.2.4 Culburnie Burn (Sites CUL5/TIMED, CUL6/TIMED, CUL7/TIMED, CUL8/TIMED, CUL9/TIMED)

Time delineated surveys have been conducted upstream of the former bridge since it was eased in 2014. Principally, this has been to gauge the level of re-colonisation of salmonids following easement.

The information provided in **Table 2** would suggest that no salmon have spawned upstream of the former barrier to migration since its easement. Whilst the average density of salmon parr does not appear to have increased, their presence in 80% of sites in 2016 as opposed to 40% in 2015 would indicate their distribution has spread. Whether this is an artefact of more salmon parr ascending the former structure between 2015 and 2016 remains to be seen.

In terms of juvenile trout, average CPUE of fry increased from 1.4 in 2015 to 1.8 in 2016. This may suggest a greater number of spawning sea trout between 2015 and 2016. Numbers of trout parr between 2015 and 2016 were seen to have decreased. Mean density of both juvenile salmon and trout were not significantly different between 2015 and 2016 (T-test, $p>0.05$).

Table 2 – Results of Time delineated Surveys Conducted Upstream of the Former Bridge Apron in 2015/2016

2015

Site	Salmon Fry/Minute	Salmon Parr/Minute	Trout Fry/Minute	Trout Parr/Minute
CUL5/TIMED	0	0	0	14
CUL6/TIMED	0	0	3.8	0.2
CUL7/TIMED	0	0.3	0.5	0.3
CUL8/TIMED	0	0	0.8	1.7
CUL9/TIMED	0	0.1	2	0.8
MEAN	0	0.1	1.4	3.4

2016

Site	Salmon Fry/Minute	Salmon Parr/Minute	Trout Fry/Minute	Trout Parr/Minute
CUL5/TIMED	0	0.3	0.3	12
CUL6/TIMED	0	0	4.1	0.4
CUL7/TIMED	0	0.1	1.1	0.3
CUL8/TIMED	0	0.2	1.2	2
CUL9/TIMED	0	0.1	2.5	1
MEAN	0	0.1	1.8	3.1

4.3 MIDDLE RIVER BEAULY CATCHMENT

4.3.1 Breakachy Burn

Being the only sizeable tributary of the Middle River Beauly catchment, the Breakachy Burn is an important nursery area for juvenile salmonids. The 2016 salmon fry density of 180/100m^2 is the lowest value since 2012 (**Figure 13**) and would achieve a density classification of 'excellent'. It is above the mean density of 156/100m^2 and well within the historical range of 43/100m^2 – 321/100m^2.

Density of salmon parr (1++) was less encouraging at 15/100m^2 achieving a density classification of 'moderate'. The 2016 salmon parr density is below the mean value of 21/100m^2. This is an interesting result given the high fry numbers in 2015. Spawning observations carried out on the lower 350m of the Breakachy Burn in 2015 and 2016 revealed low numbers of redds suggesting the fry captured in the following year/years are the result of a low number of spawning adults.

Examination of year class strength of juvenile salmon from the 2016 survey (**Figure 14**) show the presence of three cohorts: 0+, 1+ and 2+. 0+ salmon fry are clearly the most abundant whilst older year classes are dominated by 1+ salmon parr. A single salmon parr aged 2+ was also captured. These results are very much in line with results of the 2015 survey.

In terms of juvenile trout, the 2016 trout fry density of 12/100m^2 is the highest value since 2013 and would be classed as 'good'. This is above the mean density of 10/100m^2 and a mid-point in the historical range of 0/100m^2 to 28/100m^2. Trout parr (1++) were seen to be absent in 2016.

A number of eels were also captured in 2016 generating a minimum density estimate of 9/100m^2.

Figure 13 – Density of Juvenile Salmon and Trout from Site BRE1 (Breakachy Burn)

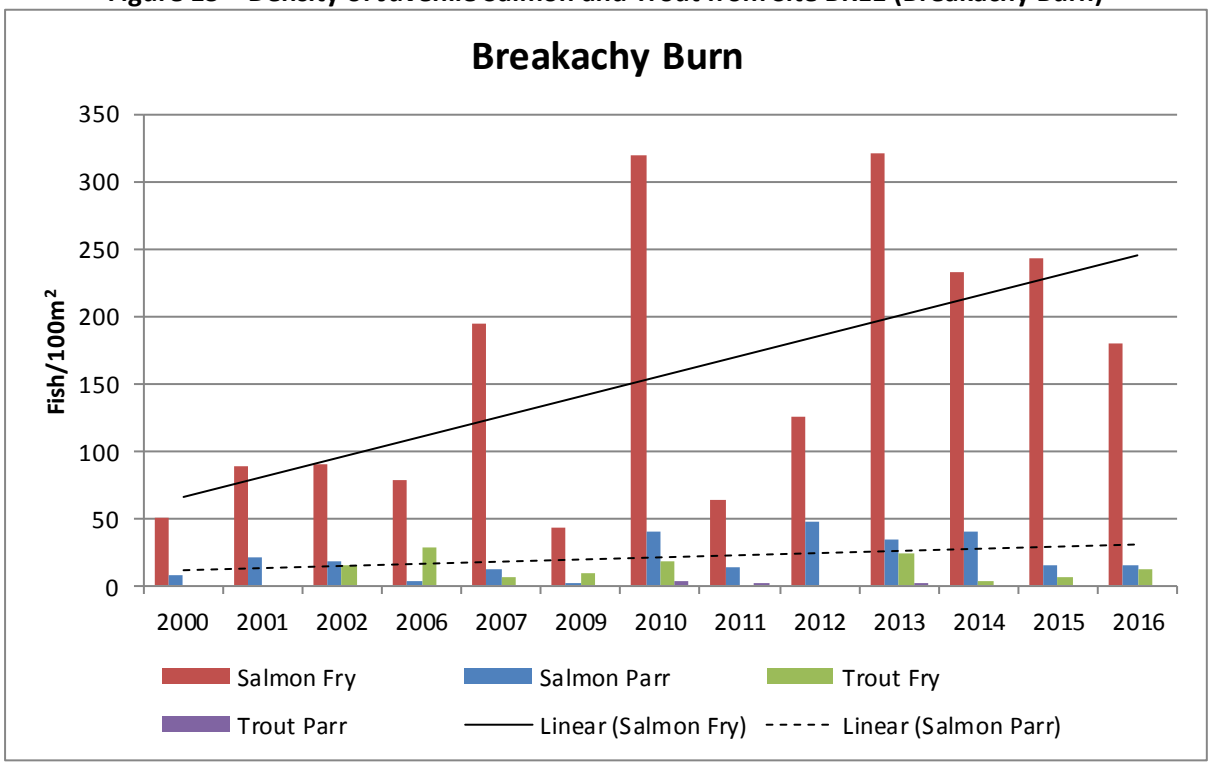
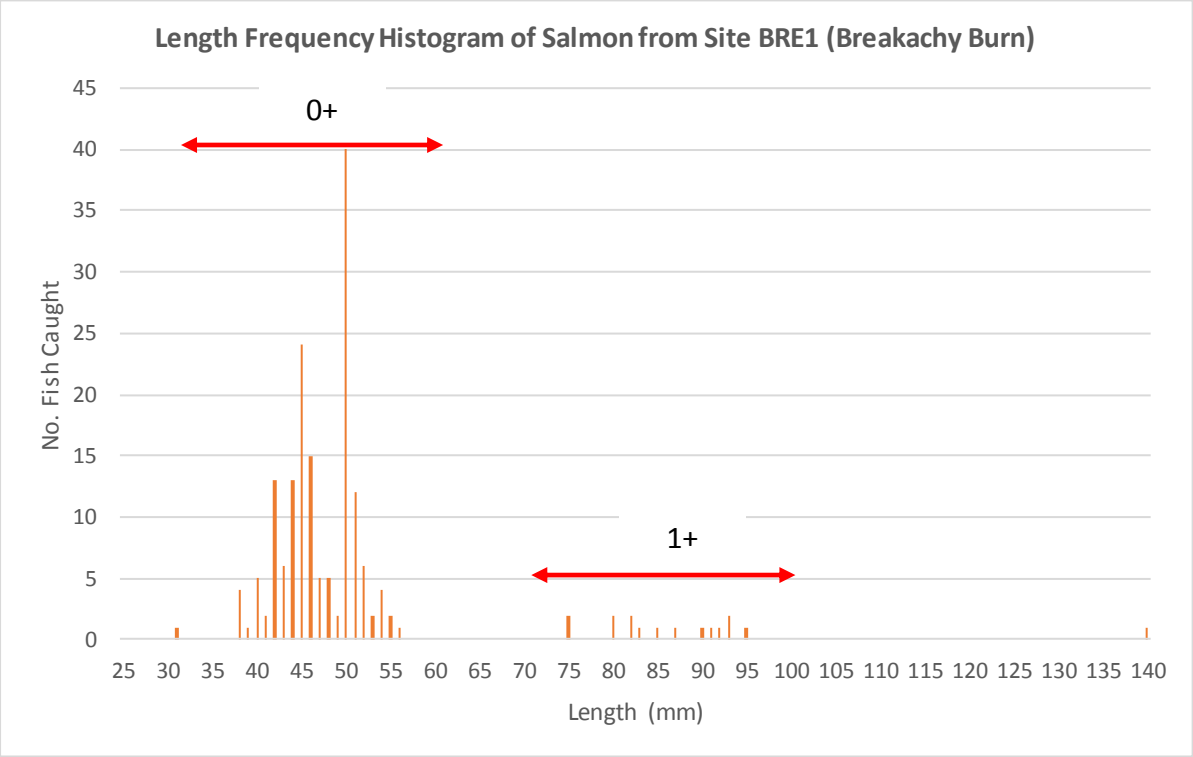


Figure 14 – Length Frequency Histogram of Salmon from Site BRE1 (Breakachy Burn)



4.4 UPPER RIVER BEAULY CATCHMENT

4.4.1 Eskadale Burn

The 2016 salmon fry density of 10/100m^2 (**Figure 15**) suggests a dearth in spawning activity of salmon in the winter of 2015. The most recent salmon fry density would be classed as 'poor', is below the mean density of 28/100m^2 and at the lower end of the historical range of 0/100m^2 – 105/100m^2.

Density of salmon parr (1++) was 24/100m^2 in 2016 and would achieve a density classification of 'good'. However, it should be mentioned that this is the lowest result since 2009 and below the mean density of 31/100m^2.

Density of trout fry was 12/100m^2 in 2016. This result would be classed as 'good' but is marginally lower than the long term average density of 13/100m^2. Older year classes were recorded as absent in 2016. Over the last three years, bankside fish cover has become sparser as a result of high flows during the winter period. Bankside cover is a key habitat parameter for trout and this could well

explain the distinct lack of trout parr in recent years.

Eels were present in 2016 and generated a minimum density estimate of 3/100m^2.

Examination of juvenile salmon year class strength (**Figure 16**) shows two year classes to be present: 0+ and 1+. 1+ salmon parr are the most abundant cohort whilst 2+ parr were found to be absent. These results are in line with previous findings and suggest that most salmon of Eskadale Burn origin will smolt at two years old.

Figure 15 – Density of Juvenile Salmon and Trout from Site ESK1 (Eskadale Burn)

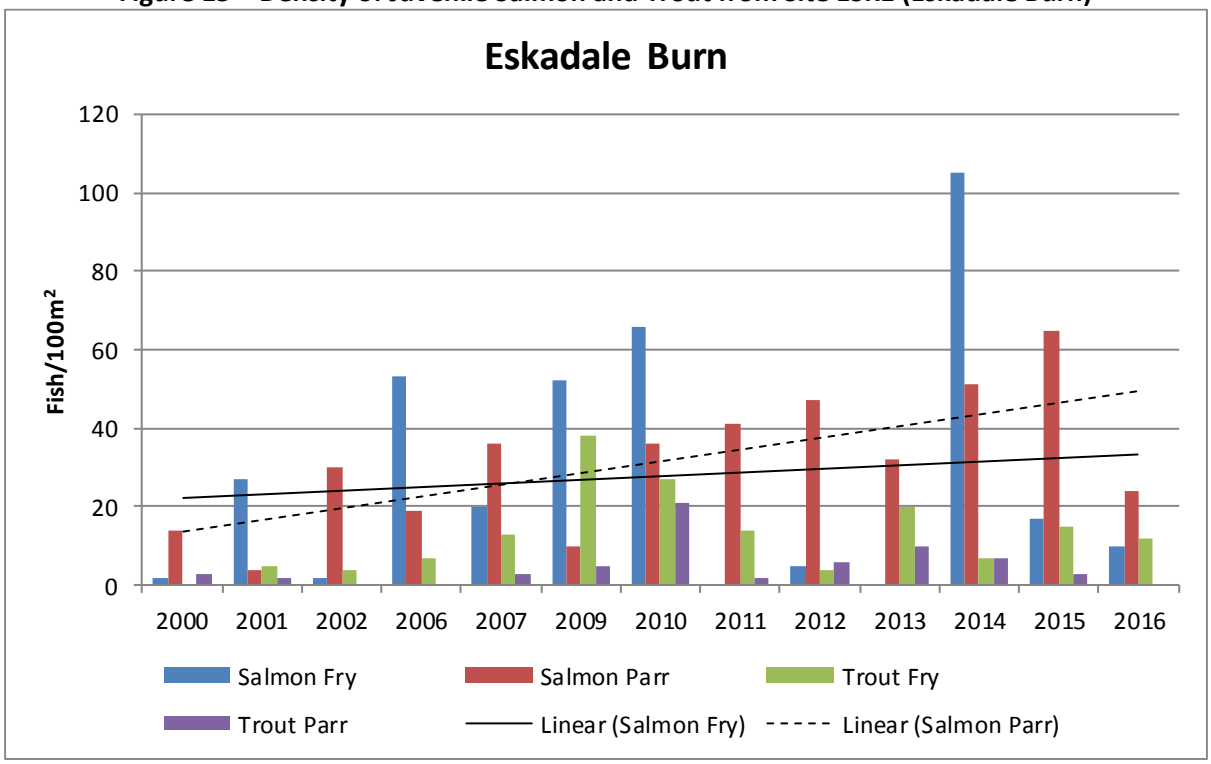
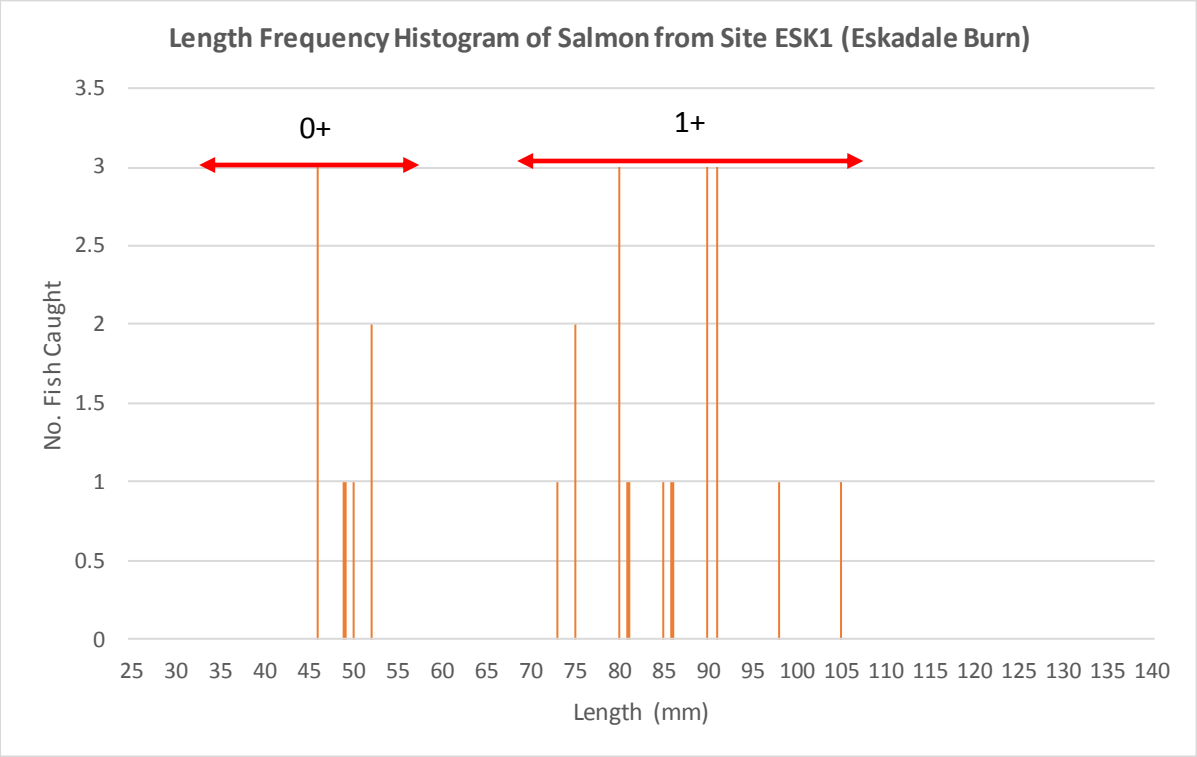


Figure 16 – Length Frequency Histogram of Salmon from Site ESK1 (Eskadale Burn)



4.5 RIVER GLASS CATCHMENT

4.5.1 Abhainn Deabhag

The upper reaches of the River Glass (known as Abhainn Deabhag) is a productive nursery and spawning area for salmon. The 2016 salmon fry density of 51/100m^2 (**Figure 17**) is the lowest result since 2013 and below the mean density of 73/100m^2 and would achieve a density classification of 'moderate'. However, it should be noted that the 2016 survey was carried out during a period of extremely low flows and a number of fry evaded capture throughout the survey. It is most likely that the reported density is an underestimate of the true numbers present.

The salmon parr (1++) density of 38/100m^2 was more encouraging and would be classed as 'excellent'. The 2016 result is above the mean density of 37/100m^2 but slightly lower than the 2015 density of 48/100m^2.

Density of trout remains stable in low numbers. Continued low trout counts are most certainly an

artefact of site selection that specifically targets salmon habitat.

When looking at year classes of juvenile salmon caught in 2016 (**Figure 18**), three cohorts were seen to be present: 0+, 1+ and 2+. Young of the year (0+) were clearly the most abundant whilst older year classes were dominated by 1+ parr. 2+ parr were present in lower numbers although it should be noted that the exact 'breakpoint' between 1+ and 2+ was not clear in 2016. The data presented in **Figure 18** should therefore be treated with a degree of caution. What can be said with certainty is that the upper River Glass will produce salmon that smolt at three years old.

Two eels were also captured in 2016 generating a minimum density estimate of 2/100m$^{2.}$

Figure 17 – Density of Juvenile Salmon and Trout from Site AD3 (Abhainn Deabhag)

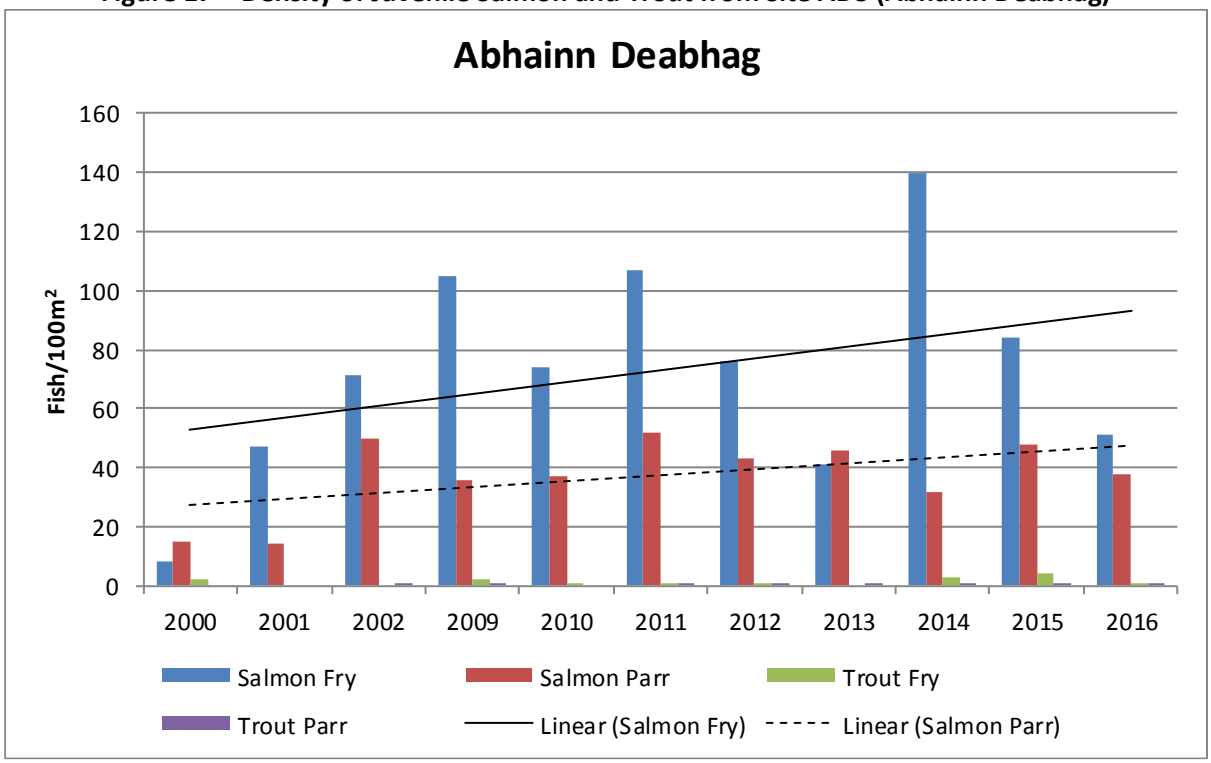
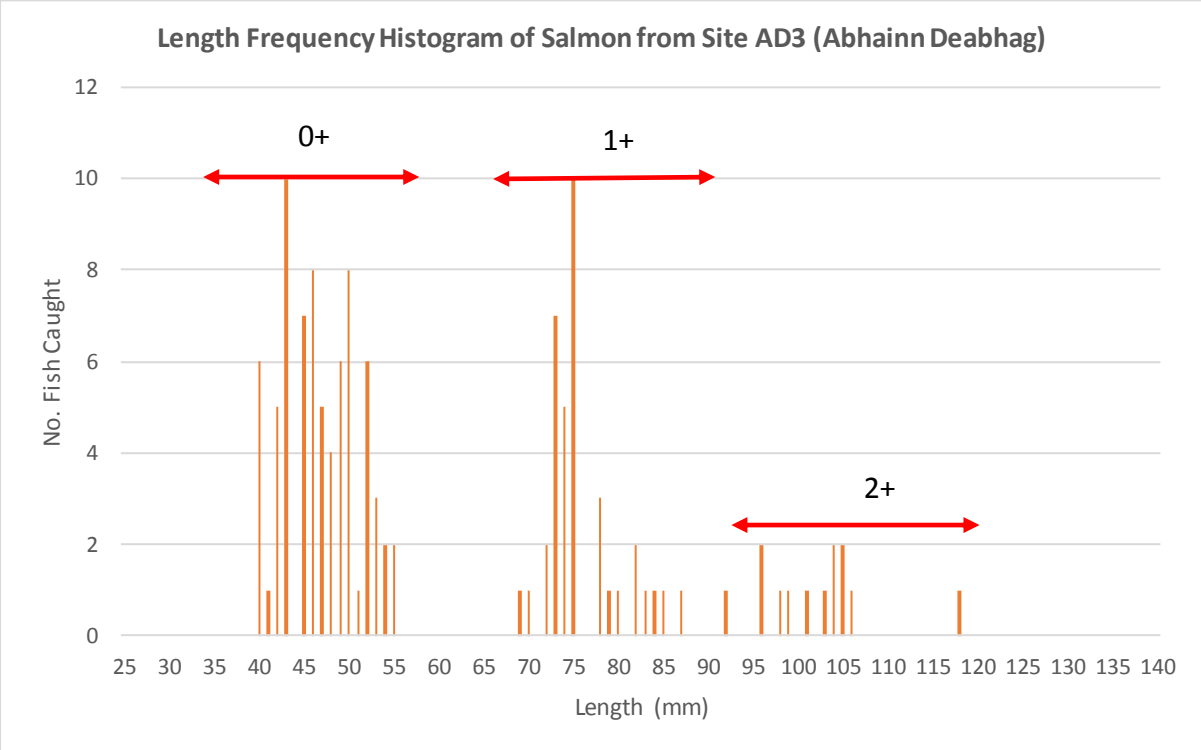


Figure 18 – Length Frequency Histogram of Salmon from Site AD3 (Abhainn Deabhag)



5 DISCUSSION AND CONCLUSIONS

Results from Site CULL1 (Culligran Burn) in 2016 suggest low levels of spawning activity in the winter of 2015. However, it should be borne in mind that the long-term data set for salmon fry does show considerable variation between years. Density of older year classes of salmon appears to be much more stable.

Results from the 2016 survey of the Neaty Burn (NEA1) confirm findings from previous years that most salmon parr (1++) may well leave their natal streams at the end of their first-year for the relative sanctuary of the mainstem. This is most likely due to almost year-round low flows due to abstraction in the head waters and the site's close proximity to excellent mainstem habitat. Despite low flows, the lower reaches of the Neaty Burn continue to act as an important spawning ground for salmon as shown by the salmon fry densities.

Results from the mainstem survey of the River Farrar between 2000 and 2016 pose questions over utilisation of instream habitat by juvenile salmon. Density of both salmon and fry and parr appear to be declining. There is therefore a need to increase coverage on the mainstem of the Farrar. To this end, NBFT will repeat their Uisge Misgeach sites (UM5 & UM6) as well as the Farrar mainstem sites identified during the 2009 field work season to investigate whether what is being seen at FAR1 is a site-specific or indeed a mainstem-wide issue.

Long term trends from the Bruiach Burn (BRU2) shows that density of both salmon fry and parr (1++) is stable although it should be mentioned that the 2016 salmon fry density of 77/100m^2 is below the mean value of 101/100m^2. Whilst both trout fry and parr densities were the below the mean values of 45/100m^2 and 11/100m^2 respectively, the 2016 densities would still be classed as 'good'.

The long-term data set from the core monitoring site on the Belladrum Burn (BEL2) suggests an upward trend in juvenile salmon densities. However, like the Bruiach Burn; density of both cohorts is below the mean density between 2000 and 2016. Density of juvenile trout was encouraging in 2016 with fry being classed as 'excellent' and parr as 'good'.

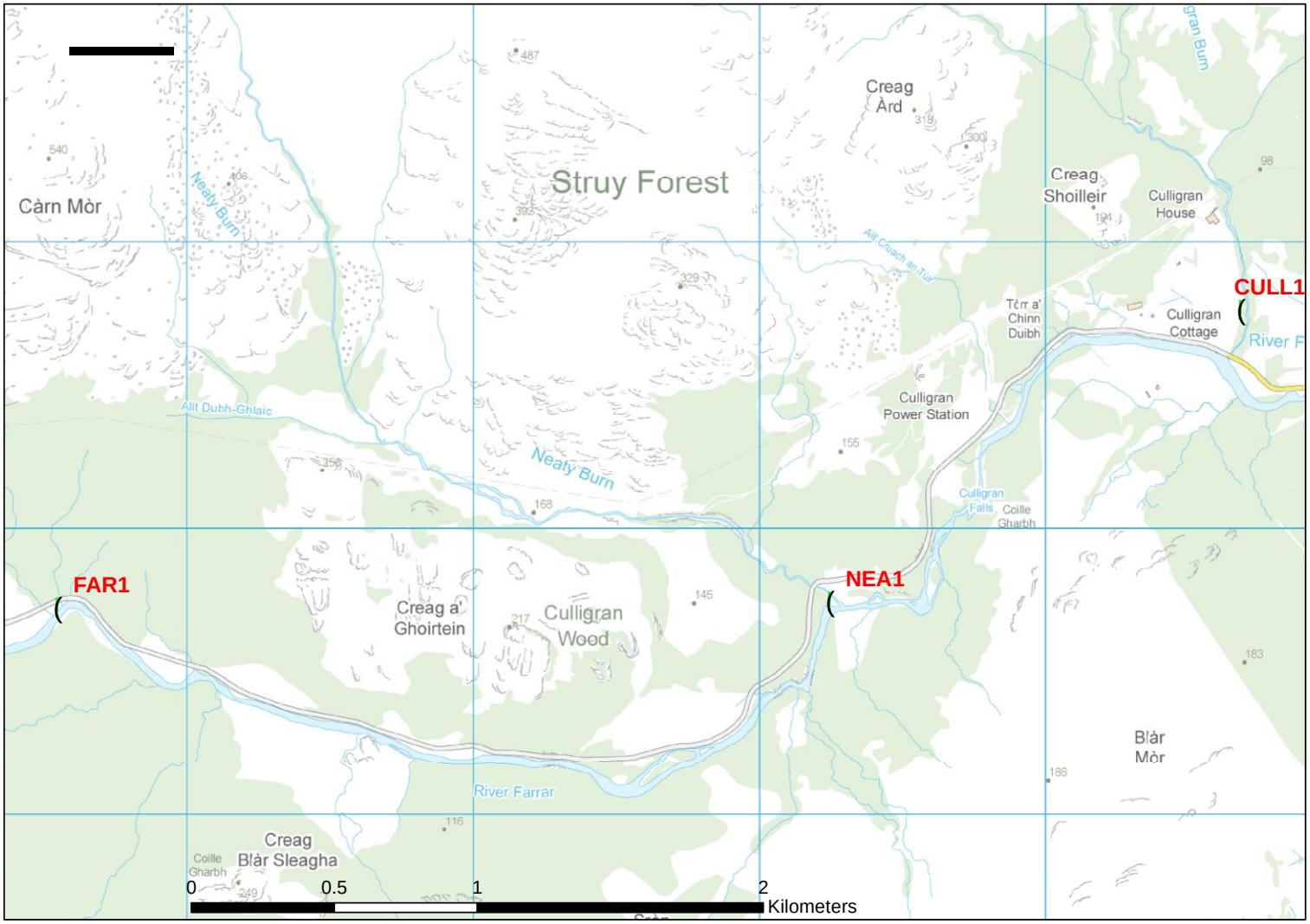
The Breakachy Burn continues to produce 'excellent' densities of salmon fry although the 2016 result is the lowest since 2014. Despite high numbers of fry, density of salmon parr (1++) has been classed

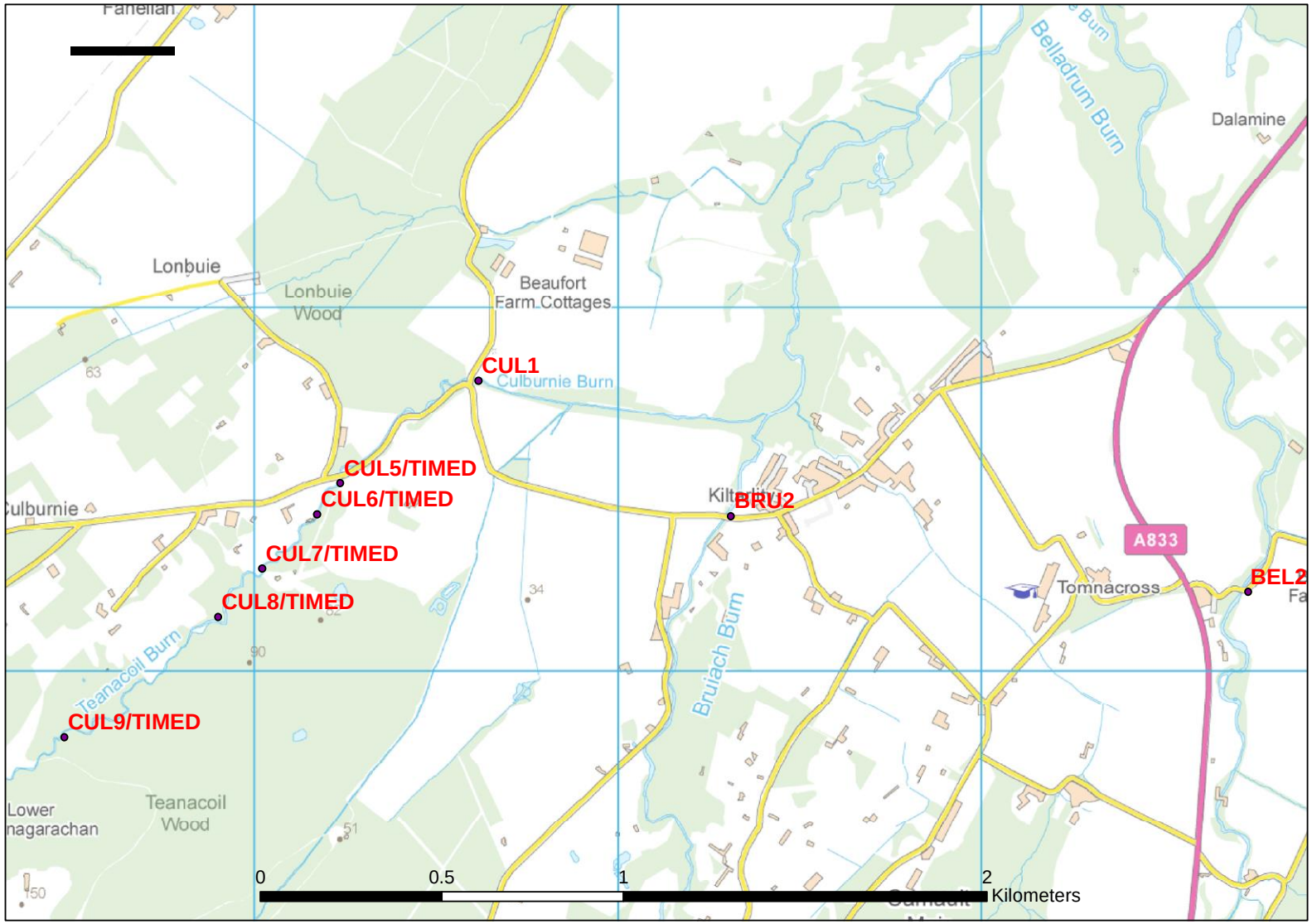
as 'moderate' in 2015 and 2016. To investigate if this is a site-specific issue, we intend to increase coverage of the Breakachy Burn in 2017.

Following a resurgence in salmon fry on the Eskadale Burn in 2014, numbers have dropped away sharply since. This is almost certainly an artefact of less returning adult spawners as the instream habitat (with the exception of some bankside fish cover) has remained stable. Density of salmon parr (1++) has remained more stable although the most recent salmon parr density of 24/100m^2 is below the mean density of 31/100m^2 but would still be classed as 'good'.

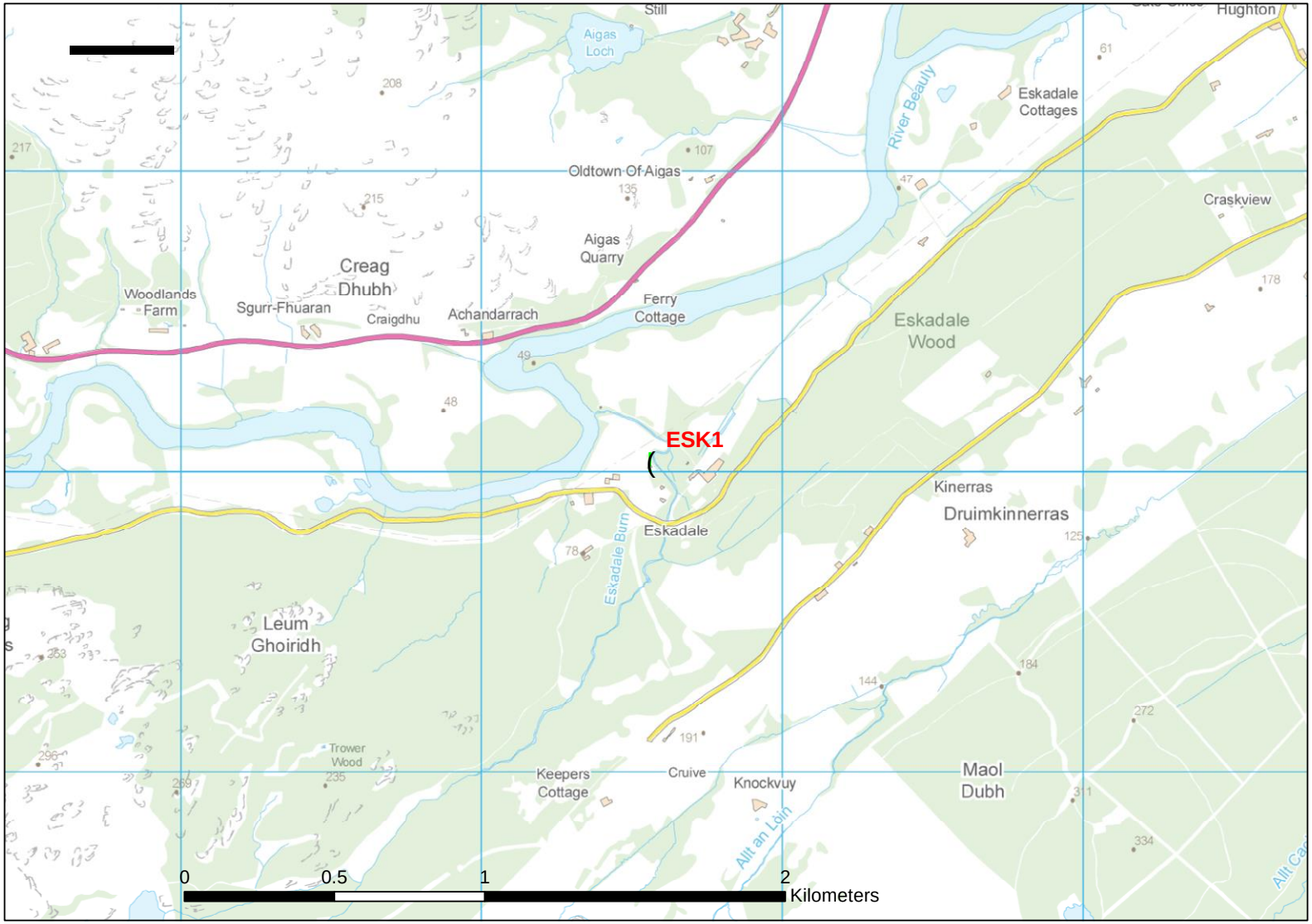
The 2016 survey of the Abhainn Deabhag site showed the lowest salmon fry density since 2014 that would be classed as 'moderate'. This is below the mean density of 73/100m^2. Salmon parr density (1++) appears more stable with the most recent density of 38/100m^2 being classed as 'excellent' and well within the historical range.

APPENDIX - MAPS SHOWING LOCATIONS OF ELECTRO-FISHING SITES




Fanellan
Lonbuie
Lonbuie Wood
Beaufort Farm Cottages
Culburnie Burn
Belladrum Burn
Dalamine
CUL1
CUL5/TIMED
CUL6/TIMED
CUL7/TIMED
CUL8/TIMED
CUL9/TIMED
BRU2
BEL2
A833
Tomnacross
Teanacoil Burn
Bruiach Burn
Lower nagarachan
Teanacoil Wood
0
0.5
1
2
Kilometers


Creag Dhubh
Farley
Drumindorsair Wood
Allt an Airinn
Torgormack
Broallan
Upper Leanassie
Allt nan Tunnag
Breakachy Farm
Breakachy
A831
River Beauly
Kilmo
BRE1
Allt na h-Athain
Allt na Crasgag
Butlers Cottage
Tòrr Mòr
Cnoc Chluaine
Caochan Buidhe
Ruttle Wood
An Druim
Creag a' Pheannsail
Fanellan
0
0.5
1
2
Kilometers


ESK1
Still
Aigas Loch
Hughton
Eskadale Cottages
River Beauly
Oldtown Of Aigas
Craskview
Aigas Quarry
Creag Dhubh
Woodlands Farm
Sgurr-Fhuaran
Craigdhu
Achandarrach
Ferry Cottage
Eskadale Wood
Kinerras
Druimkinnerras
Eskadale
Eskadale Burn
Leum Ghoiridh
Trower Wood
Keepers Cottage
Cruive
Knockvuy
Maol Dubh
Allt an Loin
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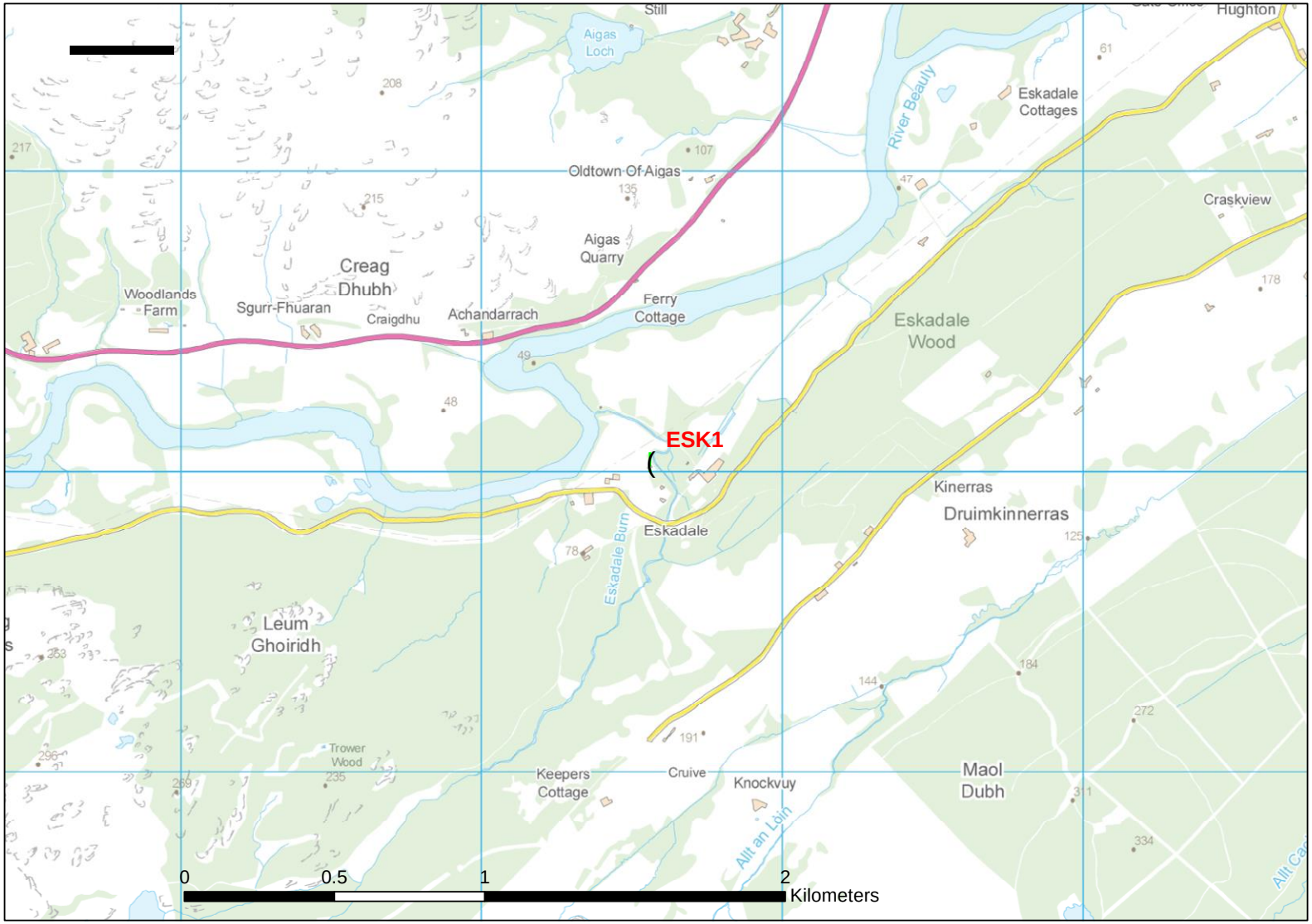
Kilometers


ESK1
Still
Aigas Loch
Hughton
Eskadale Cottages
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Creag Dhubh
Woodlands Farm
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Ferry Cottage
Eskadale Wood
Kinerras
Druimkinnerras
Eskadale
Eskadale Burn
Leum Ghoiridh
Trower Wood
Keepers Cottage
Cruive
Knockvuy
Maol Dubh
Allt an Loin
0
0.5
1
2
Kilometers

APPENDIX 2 – SITE PHOTOGRAPHS

Plate 1 – Culligran Burn – CULL1

Plate 2 – Neatie Burn – NEA1

Plate 3 – River Farrar Main stem

Plate 4 – Bruiach Burn – BRU2

Plate 5 – Belladrum Burn -

Plate 6 – Culburnie Burn – CULB1

Plate 7 – Breakachy Burn – BRE1

Plate 8 – Eskadale Burn – ESK1

Plate 9 – Abhainn Deabhag – AD3