IFI Consolidated Fish Counter Summary Report

2019

IFI/2017/1-4511

Iascach Intíre Éireann
Inland Fisheries Ireland

Foreword

Since Inland Fisheries Ireland (IFI) came into existence IFI has set about the task of consolidating all counters and counter data under the one branch of the organisation. In addition a substantial effort has been made to continually upgrade the counter network and up skill the operators to ensure IFI operates the best data collection service available.

IFI allocates time each year to plan and look for current trends and future developments which could be incorporated into the fish counter programme. The future development of the counter network is evolving with issues of compatibility, software and availability of hardware all requiring management as the programme looks to secure its long term future. These issues have been incorporated into a risk based assessment plan for the future management of the programme.

The national network of counters operated successfully over the twelve month period. 2019 was a very challenging year for the programme. A five year plan was developed to upgrade infrastructure at a number of sites. Three specific site were identified for 2019, Waterville, the Mulkear and the Maine rivers. All of these projects are progressing. However due to stakeholder engagement they have not progressed within the timeframe IFI had planned.

The supply of hardware used to verify fish came to an abrupt end during the year. IFI had been looking at alternatives and were able to develop a plan to replace older equipment with a new DVR based verification system. A small number of these units are operational and all will be replaced by 2023. The new verification system will allow us to move forward to using high definition cameras and possibly automatic verification in the future.

IFI have developed a policy, governing data collected by its network of counters. The policy sets out the rules regarding the storage, management and sharing of fish counter data. A number of significant challenges lay ahead for the current fish counter programme.

Gregory Forde
Head of Operations

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Introduction

The following report is a brief look at each of the counters operated by IFI. Information for the report has been gathered over the year by staff operating; maintaining and cleaning counters to ensure accurate counts are available. The data gathered annually is put in context when it is compared to data from previous years. When reviewing data in this context it is possible to understand the importance of consistent counts of fish to add to the cumulative dataset for each river year on year. The fish counter programme is focused at counting salmon nationally but a small number of counters are specifically configured to count sea trout. The accuracy of the sea trout counts depend on the size of the fish and the conditions at the time.

During 2019 the number of counters which did not provide continuous counts was insignificant as temporary counters were dispatched to cover the sites during repairs. The national network of counters operated successfully over the twelve month period. New verification hardware has been deployed on two sites and has the potential to reduce the amount of time required in verification. This hardware will also allow us to move to high definition which will give the counters greater accuracy in identifying between small salmon and larger sea trout. One site has suffered some structural degradation which is as a result of the type of construction on this weir. This has resulted in the data from this counter being downgraded to unverified data.

The inclusion of a reporting and maintenance record section on the new web site which automatically contacts those responsible for repairs and the Head of Operations ensures a quick response time. The web site has been further developed to enable the IFI administrators to carry out function which previously had required the programmer. The web site has enabled IFI to achieve consistence practice on all sites by numerous staff uploading the data. IFI have developed a policy, governing data collected by its network of counters. The policy sets out the rules regarding the storage, management and sharing of fish counter data.

1 River Fane

Type : Logie
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

1.1 River site and description

The fish counter is sited at Stephenstown, on the Dundalk to Ardee road. It is a Logie, resistivity, counter with two channels covering the width of the River Fane. The counter is managed by IFI staff from the Dundalk District. The data is downloaded and verified on the computer system which is housed in the Dundalk Salmon Anglers hatchery facility near the weir.

1.2 Operation

The counter worked well during the year with maintenance being carried out regularly. The counter performed well. The connections on the weir were upgraded and sealed. A new camera and cable was laid to replace and existing one which has been damaged over the winter. The counter experiences flooding and cleaning can be difficult with limited access. The counter provided good data for 2019. Additional works to upgrade the facility from a health and safety point of view are taking place. The counter has been visited regularly and was reconfigured and tested twice during the year.

Table 01: Counter data for the R.Fane

Fish Species	Number
Spring salmon	48
Grilse	60
Late Summer Salmon	24
Sea Trout	138

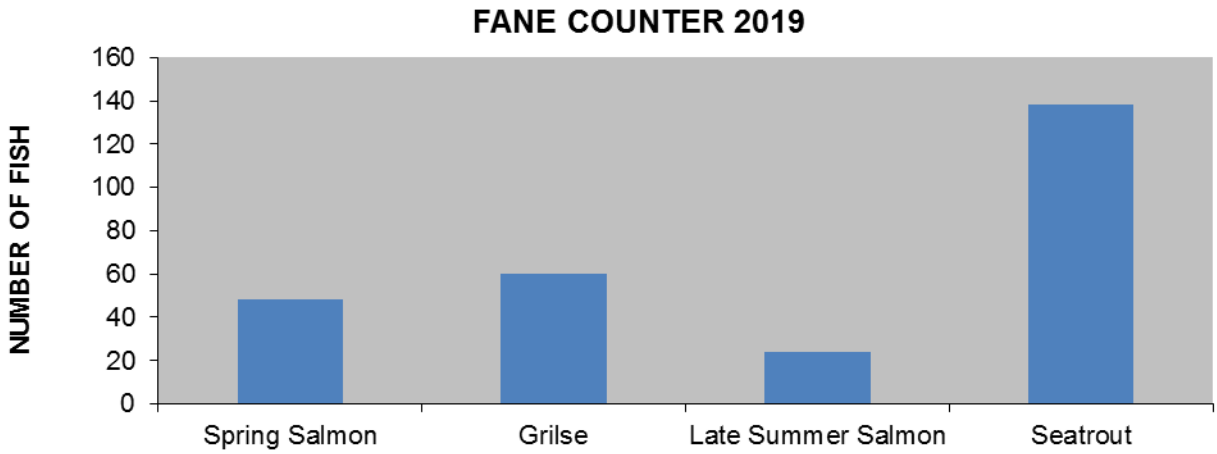
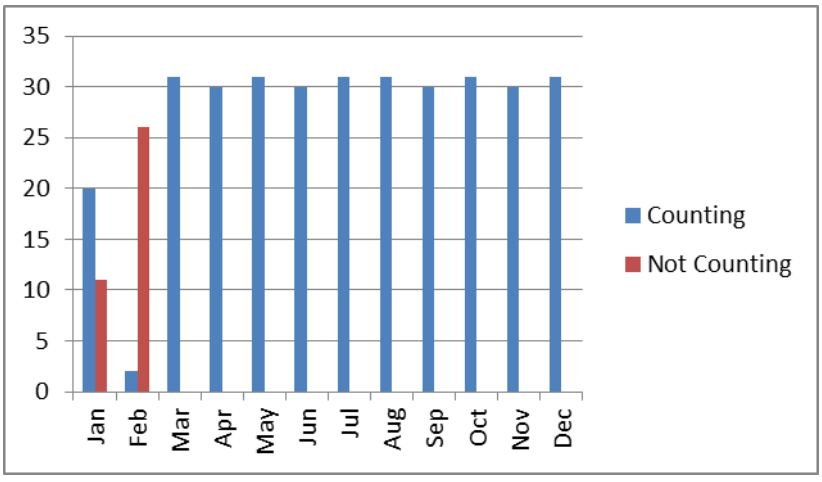


Table 02: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
328	37



2 River Dee

Type : Vaki
Operating: Limited operations
Performance: Good
Verified: Yes

2.1 River site and description

The fish counter is sited at Cappogue, on Drumcar Weir, on the Drumcar to Dunleer road, County Louth. It is a Vaki counter and records the fish as they move up and down through the fish pass on the side of the weir. This counter is a partial counter and the percentage of the fish counted depends on weather and water level. This data is uploaded by IFI staff from the Dundalk District. The data is verified on site using the Winari software.

2.2 Operation

An application for new equipment to the NSAD fund in November 2017 was successful and the equipment has been purchased and delivered to IFI. The installation of the equipment took place in April. However shortly after installation a problem developed with the software. This took some time to repair and during this down time the opportunity arose to install additional protection on the upper end of the fish pass to protect this expensive equipment. The counter is now on site at the Drumcar weir. Staff have been trained on the new equipment.

Table 03: Counter data for the R. Dee

Fish Species	Number
Spring salmon	64
Grilse	03
Late Summer Salmon	0
Sea Trout	0

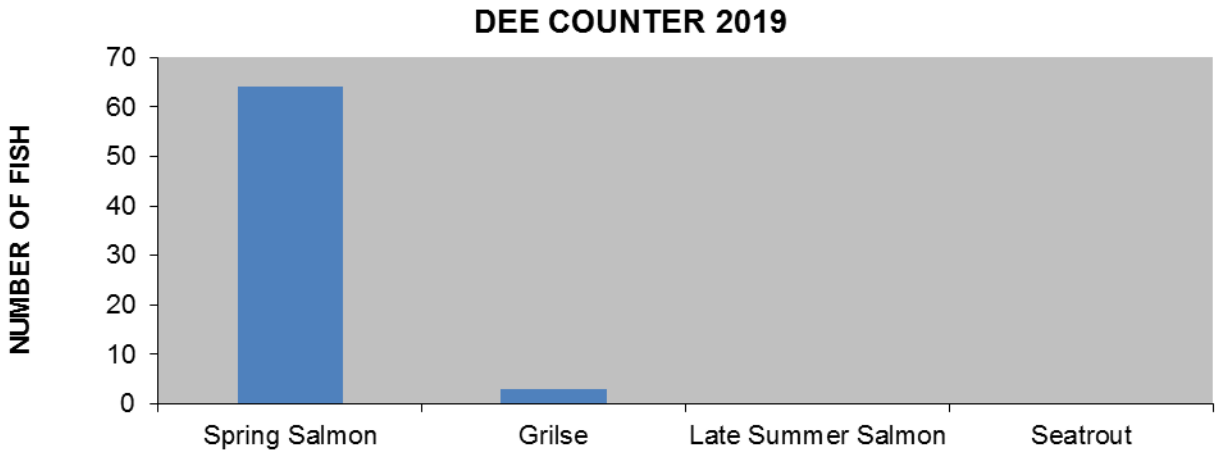
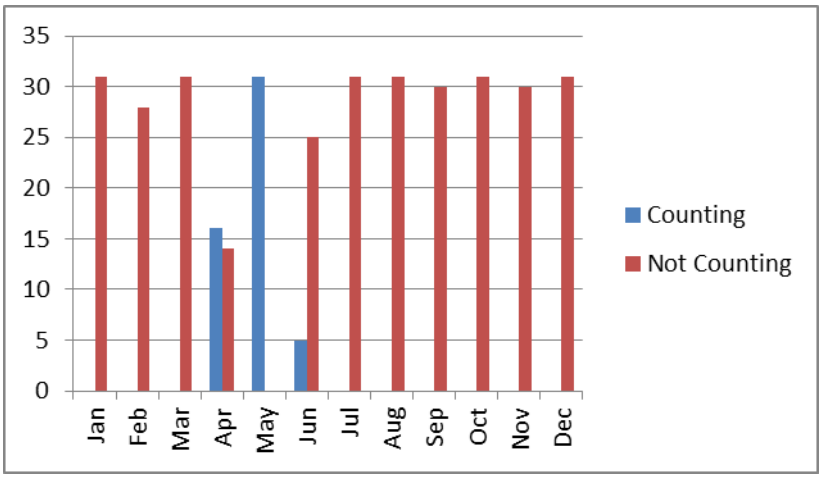
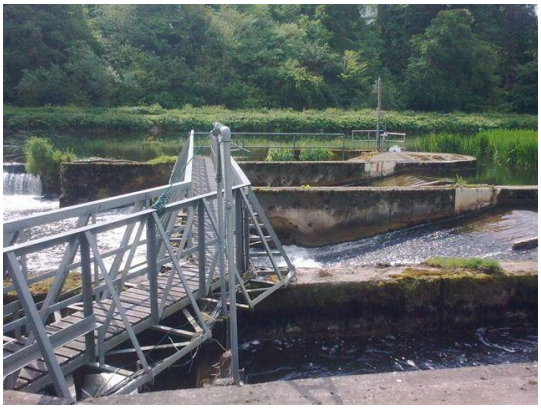


Table 04: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
52	313



3 Boyne Counter



Counter type: Logie and Vaki
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

3.1 River site and description

The Fish counters at Blackcastle in Navan, Co. Meath consist of 6 different channels which count fish travelling up and down the River Boyne system. These are made up of 4 crumps which record fish as they pass over the weir and two Vaki counters that count fish as they pass through two tunnels on either side of the crump weirs. The counters account for approximately 20% of the total width of the channel at Blackcastle. The weir at Blackcastle makes up the remaining 80%.

3.2 Operation

The counters give an accurate total of the fish that travel through them; the amount of fish that cross up and down across Blackcastle Weir is unknown. This counter provides a partial count but counts a high percentage of the run of fish. The connections to the electrodes from the counter have been upgraded using a resin filled waterproof box. This will eliminate any events being caused by damp connections. All the counters on this site worked well for the period and provided accurate data. This site will benefit from an upgrade to the hardware due to its configuration.

Table 05: Counter data for the R. Boyne

Fish Species	Number
Spring salmon	318
Grilse	670
Late Summer Salmon	586
Sea Trout	0

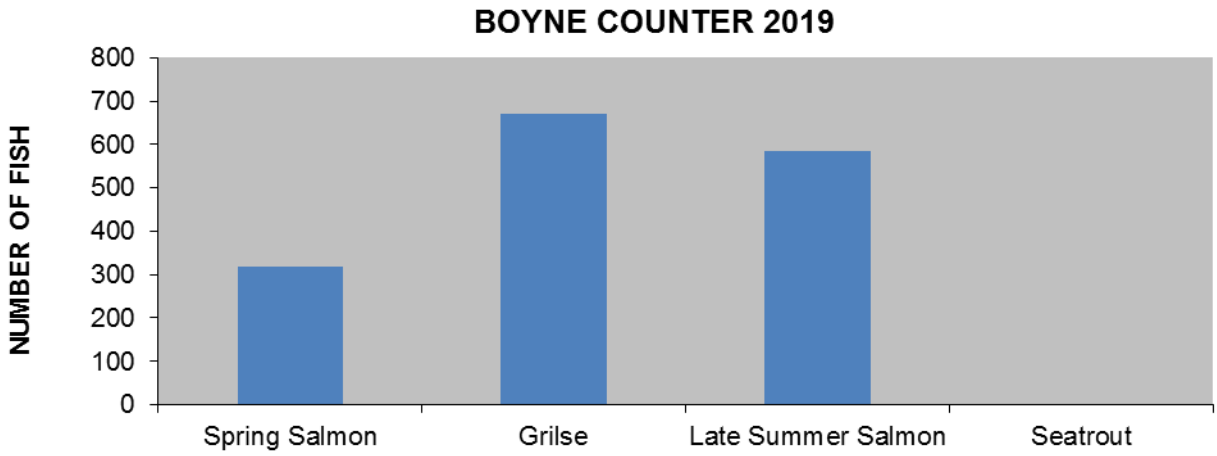
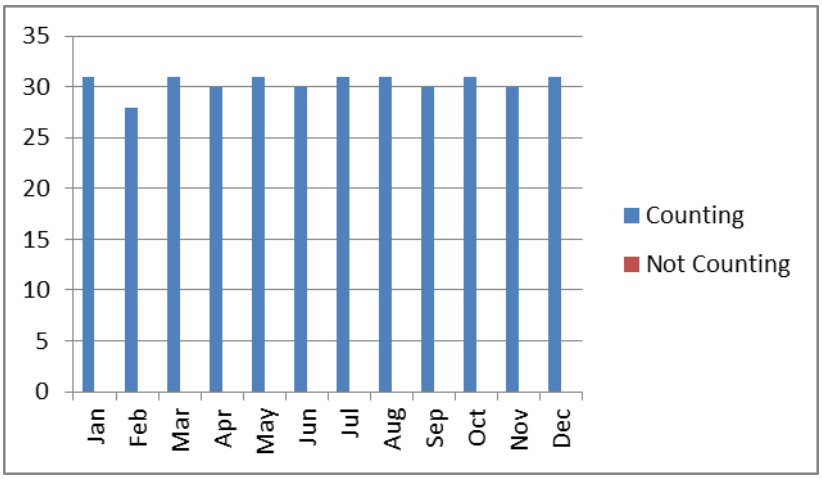


Table 06: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



4 Slaney Counter

Counter Type: Logie
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

4.0 River site and description

The system used on the Slaney is a Logie fish counter in conjunction with a tube fish pass that counts salmon and sea trout which enter the tube on their return to the river from the sea. An underwater surveillance camera is used to verify the fish count recorded on the counter. The site of the counter at Clohamon weir is approximately 30 miles from where the Slaney enters the sea through Wexford Harbour. The counter is a partial counter as fish can traverse the weir in flood conditions.

4.1 Operation

The counter is both efficient and accurate in terms of the fish that actually move upstream or downstream through the tube, but an unknown proportion of the run by-passes the counter at other points on the weir. The in stream structure housing the counter was severely damaged in flooding in January 2016. The counter was recommissioned in December 2016 and significant works were carried out to make this a more efficient counting site. This site has operated well for 2019.

Table 07: Counter data for the R. Slaney

Fish Species	Number
Spring salmon	212
Grilse	187
Late Summer Salmon	180
Sea Trout	434

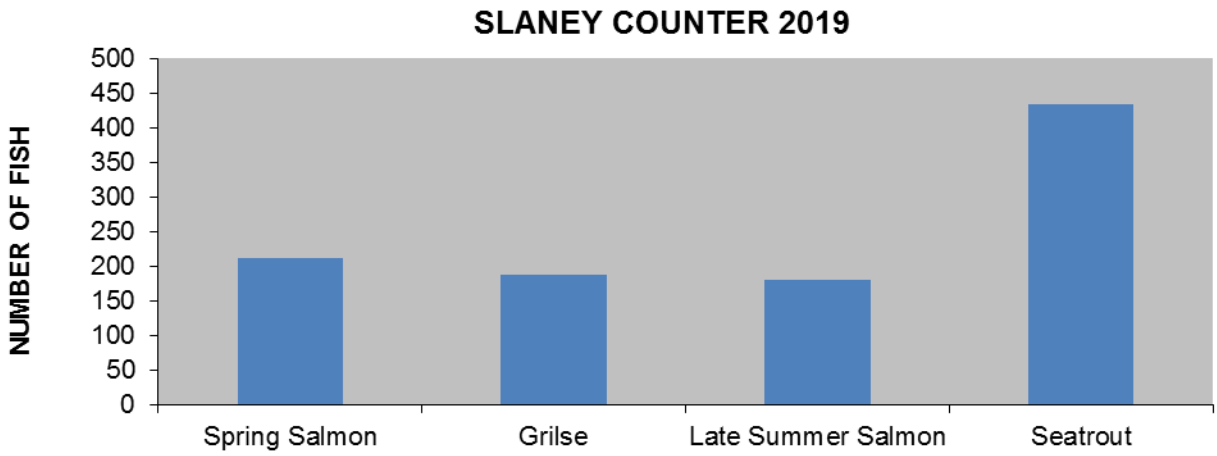
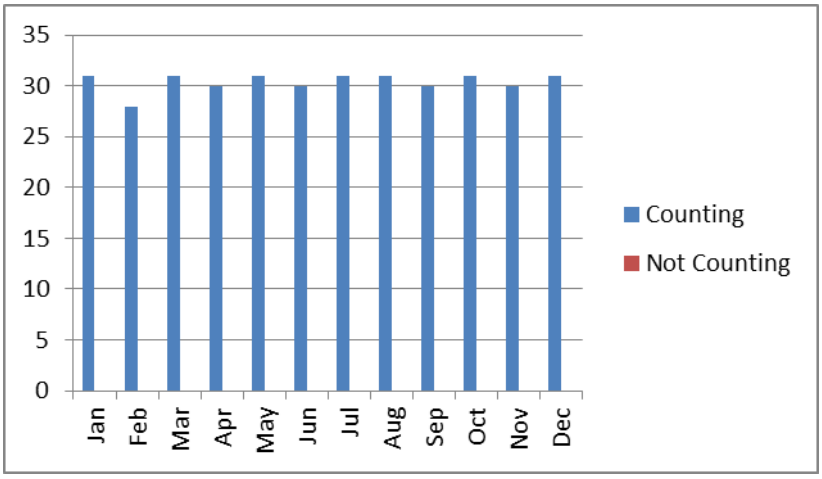


Table 08: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



5 Kerry Blackwater

Type : Logie
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

5.1 River site and description

The Kerry blackwater counter is located one hundred meters upstream of the estuary. It is a Logie restivity counter which operates over three channels and gives a total count for the river. The river is currently open for angling on a catch and release basis. The river is sixteen miles long with one small lake and is considered a spate river.

5.2 Operation

The counter operated well during the year. The site has been checked regularly and the system assessed due to the low numbers of fish being recorded crossing the weir. The existing camera is working well. It's mounted out of the river to ensure it operates throughout the season without damage from flooding. The counter is providing accurate results for the river system. The wiring to the counter has been re-covered following flooding.

Table 09: Counter data for the Kerry Blackwater River

Fish Species	Number
Spring salmon	44
Grilse	387
Late Summer Salmon	43
Sea Trout	33

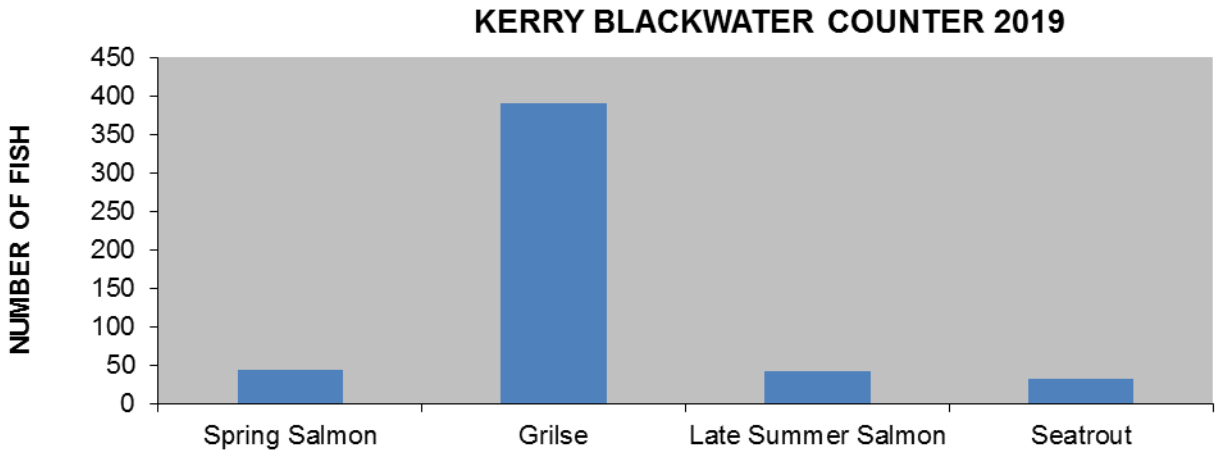
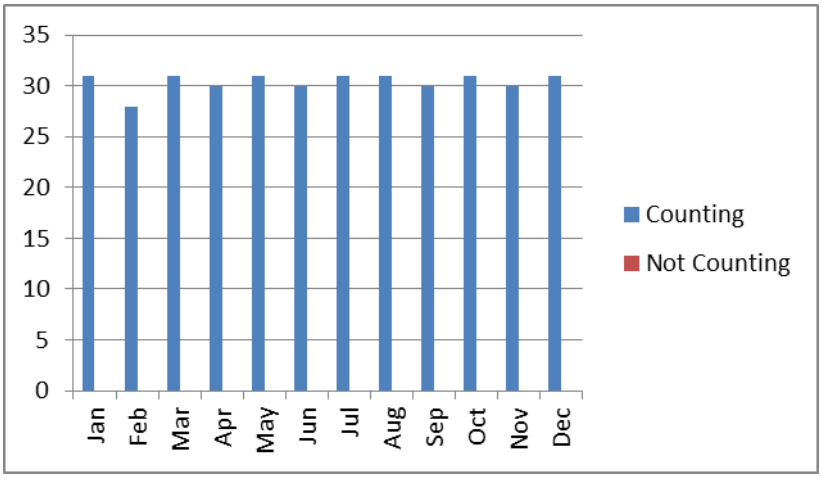


Table 10: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



6 Waterville

Type : Logie
Operating: Jan –Dec 2019
Performance: Good
Verified: Yes

6.1 River site and description

The Waterville counter is located upstream of the estuary in the estate grounds of Waterville house. The counter is a logie restivity counter which operates four counting crumps giving a total count for the river system. The electrodes are spaced primarily for counting sea trout. The data to date has been verified by CCTV camera.

6.2 Operation

The counter has operated well over the course of the year. An additional pool camera has been installed by IFI to accommodate Waterville House. The connections to the counter have been replaced to upgrade the quality of data being collected. The computer which operates the Geovision surveillance camera has also been replaced. The crumps on this site require extensive works in the long term. The counter does not count very small sea trout.

Table 11: Counter data for Waterville

Fish Species	Number
Spring salmon	188
Grilse	380
Late Summer Salmon	261
Sea Trout	1414

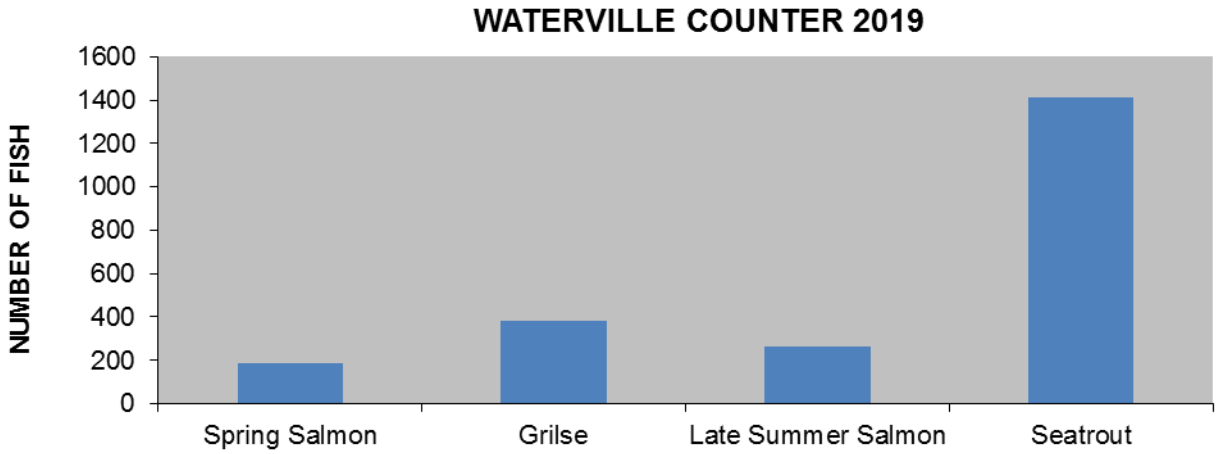
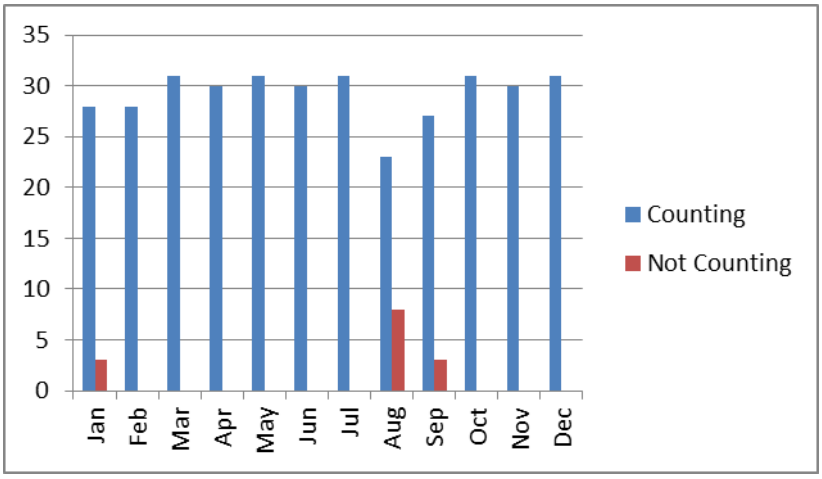


Table 12: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
351	14



7 River Maine

Type : Logie
Operating: Jan–Dec 2019
Performance: Good
Verified: No

7.1 River site and description

The fish counter on the Maine is a logie restivity counter operating four channels which span the river giving a total count. The counter weir is located upstream of "Marshell's bridge" and was commissioned in late 2009. The counter site is six miles from the sea but only half a mile upstream of the intertidal zone.

7.2 Operation

The counter has operated well for the 2019 season as a result of the completion of upgrades to the connections. The counter was checked and reconfigured a number of times during the year to ensure the best count possible was available. Significant debris crossing and getting lodged on the weir has caused an increase in the number of events being recorded. The construction of the weir, which has precast crumps, has significant background noise which affects the accuracy of the counter. The data from this weir has been downgraded to unverified due to the level of background noise on the weir. Upgrades to the weir are planned for 2020.

Table 13: Counter data for the Maine River

Fish Species	Number
Spring salmon	413
Grilse	413
Late Summer Salmon	180
Sea Trout	322

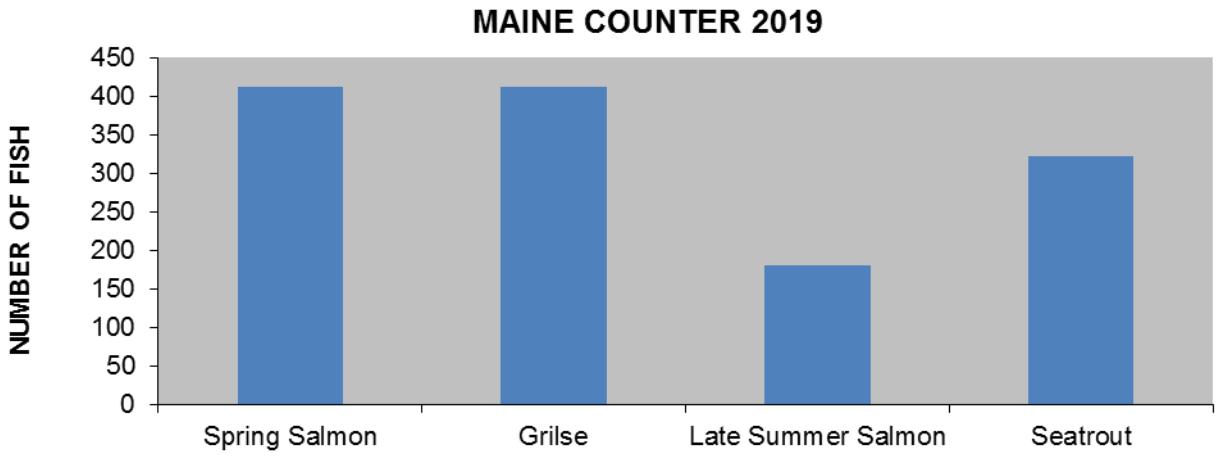
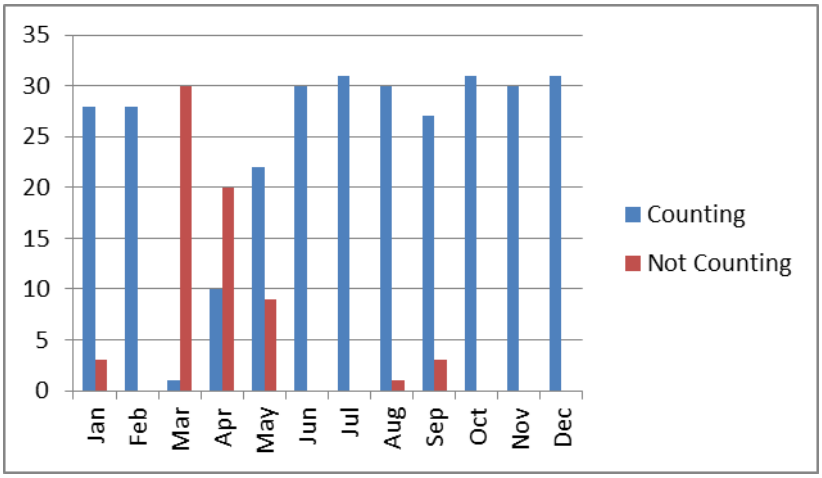


Table 14: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
269	96



8 Feale River

Counter type: Logie
Operating: Jan-Dec 2019
Performance: V. Good
Verified: Yes

8.1 River site and description

The River Feale rises in the Mullaghareirk Mountains in County Cork and meanders approximately 74 kilometres before joining with the Galey and Bricks Rivers becoming the Cashen River. The River Feale counter is located approximately 5 kilometres downstream of Listowel Town in the townland of Scartleigh at the Kerry County Council water abstraction plant. The River Feale is above its conservation limit and is therefore open for angling.

8.2 Operation

The counter is a one channel counter operated on a crump which was installed to assist fish over the large weir. The counter operated well over the course of the summer. This counter provides consistent accurate data. A new camera was installed early in the summer. A small number of fish have been seen by-passing the counter by going over the weir in high water conditions. The counter needs attention in the coming years to ensure it continues to provide accurate information. This counter is set up to count salmon.

Table 15: Counter data for the Feale River

Fish Species	Number
Spring salmon	2638
Grilse	2242
Late Summer Salmon	239
Sea Trout	121

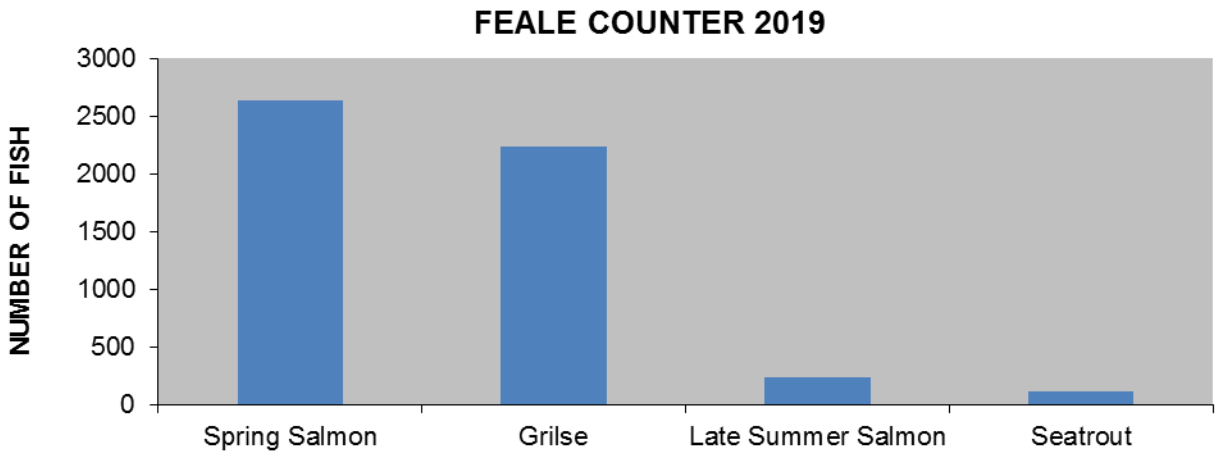
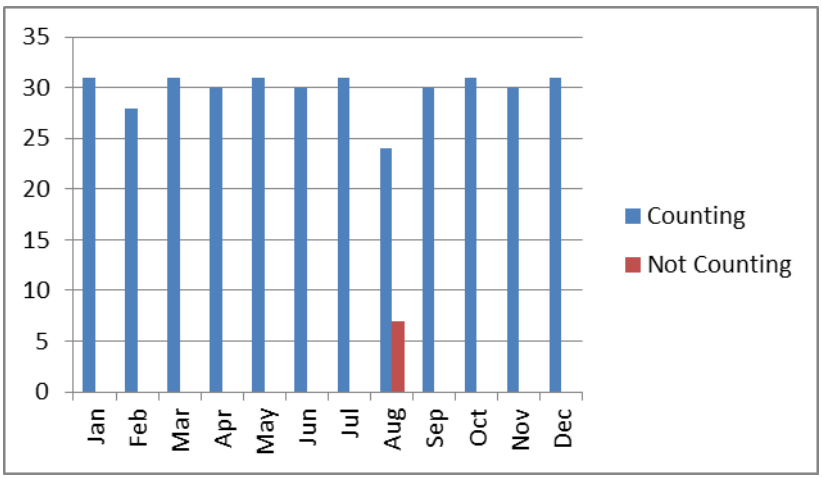


Table 16: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
358	07



9 Maigue River

Counter type: Logie
Operation Period: Jan – Dec 2019
Performance: Good
Verified: No

9.1 River site and description

The River Maigue rises at the base of the Ballyhoura and Slievenamuck Mountains in the Galtee Mountain range in south County Limerick. It drains a large catchment area of 1,009km2 extending from Ballylanders and Kilfinnane in the Southeast, flowing Northwest through the villages of Croom and Adare then turning north into the Shannon estuary at the Ferry Bridge, not far from Kildimo village. The River Maigue catchment area is characterised predominantly by rich pasture land and forms part of the renowned 'Golden Vale' agricultural area.

9.2 Operation

The Maigue counter is a ten channel counter. The counter was completed on March 2013 and is a re-engineered crescent shaped weir. The site uses three counters to count all ten channels and therefore requires a greater amount of time to maintain and verify. In 2019 the counter was operational and worked well. The counting weir requires work after each winter to connections and electrodes due to significant debris and velocity of water during flood events.

Table 17: Counter data for the Maigue River

Fish Species	Number
Spring salmon	432
Grilse	291
Late Summer Salmon	393
Sea Trout	0

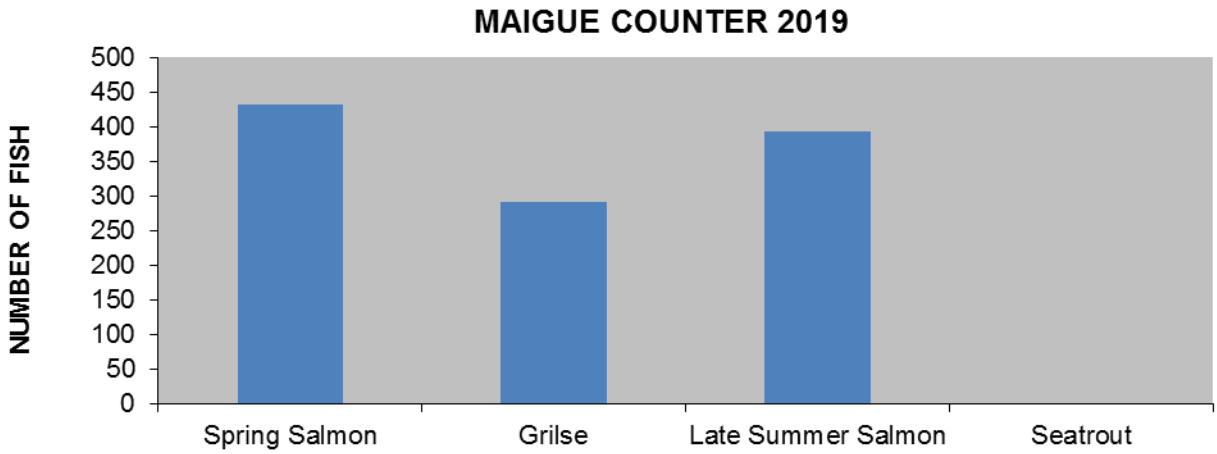
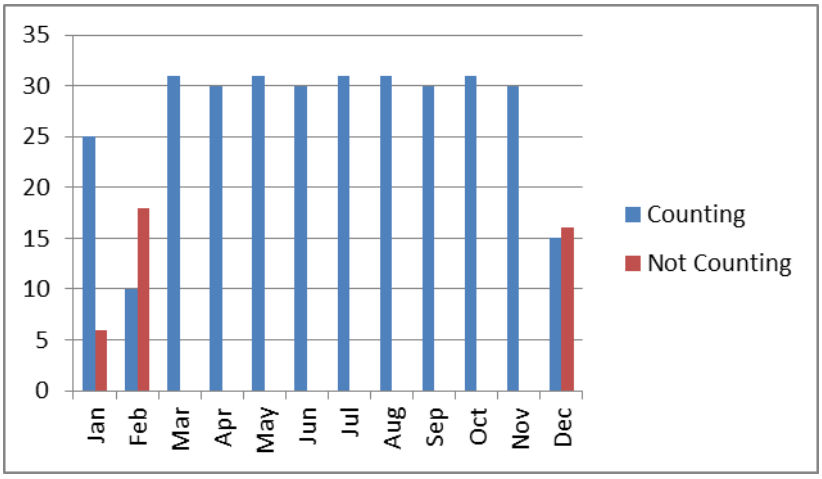


Table 18: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
325	40



10 Mulkear

Counter type: Logie
Operating: Jan-Dec 2019
Performance: Good
Verified: Yes

10.1 River site and description

The Mulkear counter is located at Ballyclough on a purpose built crump weir approximately 3 kilometres upstream from where the mouth of the Mulkear River enters the River Shannon. Due to a large road scheme crossing the Mulkear River in 2004 an agreement was reached with the contractors to install a three channel crump weir and counter underneath the main bypass bridge located upstream of Annacotty village also included in the plans was a side channel for eel passage.

10.2 Operation

The counter worked well and provided accurate counts for the river. All three crumps were operational and only minimal maintenance was required to keep this counter working. A significant number of Lamprey were observed on camera crossing the weir. The site will require two new cameras to replace the existing cameras mounted high under the motorway bridge.

Table 19: Counter data for the Mulkear River

Fish Species	Number
Spring salmon	669
Grilse	895
Late Summer Salmon	1482
Sea Trout	0

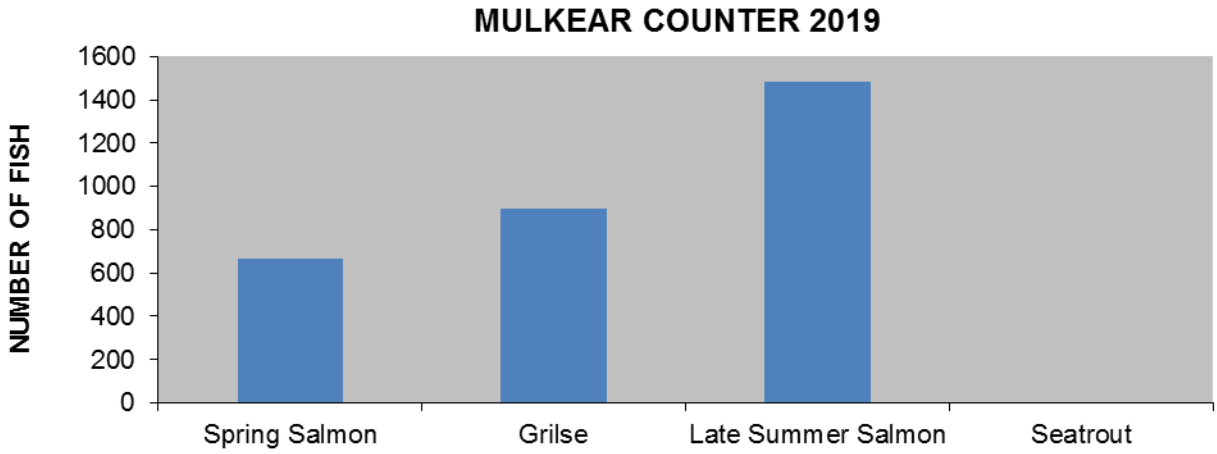
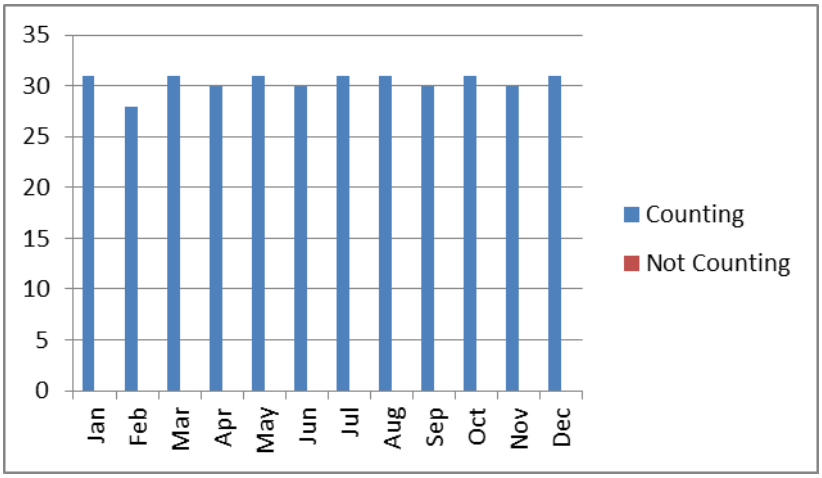


Table 20: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



11 Fergus River

Counter type: Logie
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

11.1 River site and description

The Fergus fish counter is a recent addition to the IFI fish counter programme. The counter was installed as part of the flood relief works in Ennis. It consists of one channel located at the top of the new fish pass. The design of the fish pass is unique to allow lamprey, elvers and salmonids to migrate upstream past the old structure which is protected.

11.2 Operation

The counter is housed in the Civic building adjacent to the river. This facilitated an upgrade to the site which includes cameras, computer and verification software which has greatly increased the capabilities of the facility. An additional underwater camera has been installed at the site to assist with verification. Lamprey have not been detected by camera using the new fish pass to date.

Table 21: Counter data for the Fergus River

Fish Species	Number
Spring salmon	94
Grilse	279
Late Summer Salmon	157
Sea Trout	0

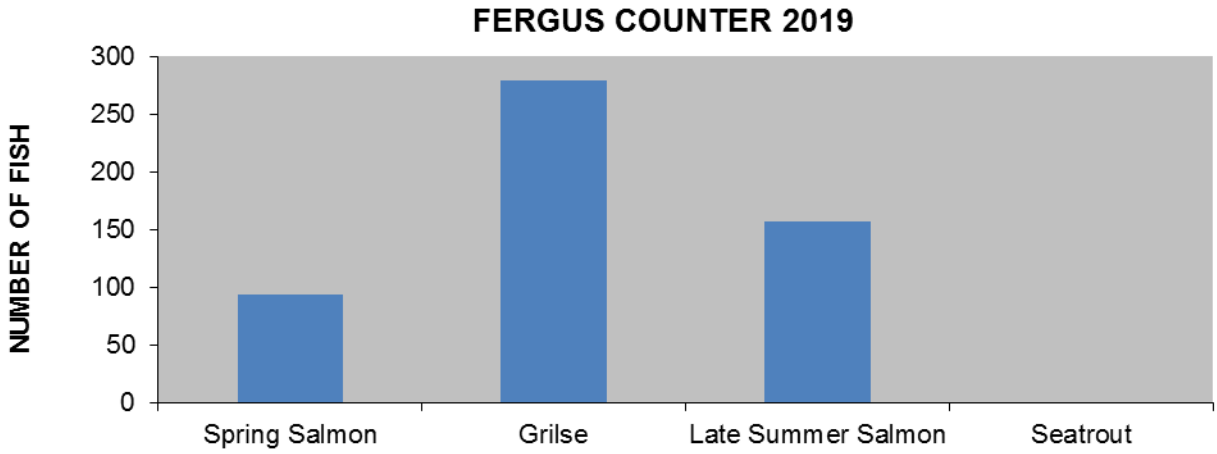
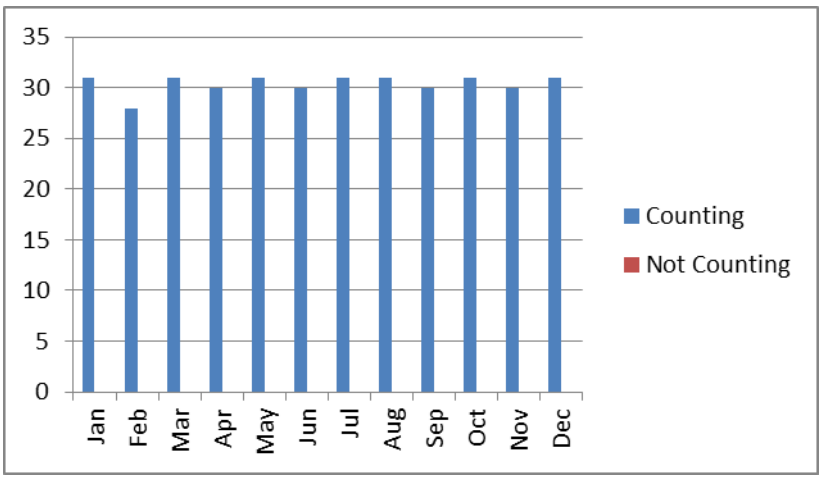


Table 22: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



12 Inagh River (Ennistymon)

Counter type: Logie tube
Operating: Jan – Dec 2019
Performance: Good
Verified: Yes

12.1 River site and description

The tube counter in Ennistymon on the Inagh River has been reinstalled after nearly fifty years. This site at the top of the fish pass was the original site of the fish counter which was also a Logie tube counter. The current installation has CCTV verification since early January. The counter hut is in a new location and is only accessible to IFI staff.

12.2 Operation

The counter was connected in late December 2014. The counter has performed well during the year. The site has had some interruptions this year due to extensive construction works downstream of the counter which has now been completed. The run of fish into the system was very low but fish observed by staff were picked up by the counter.

Table 23: Counter data for the Inagh (Ennistymon) River

Fish Species	Number
Spring salmon	0
Grilse	18
Late Summer Salmon	18
Sea Trout	08

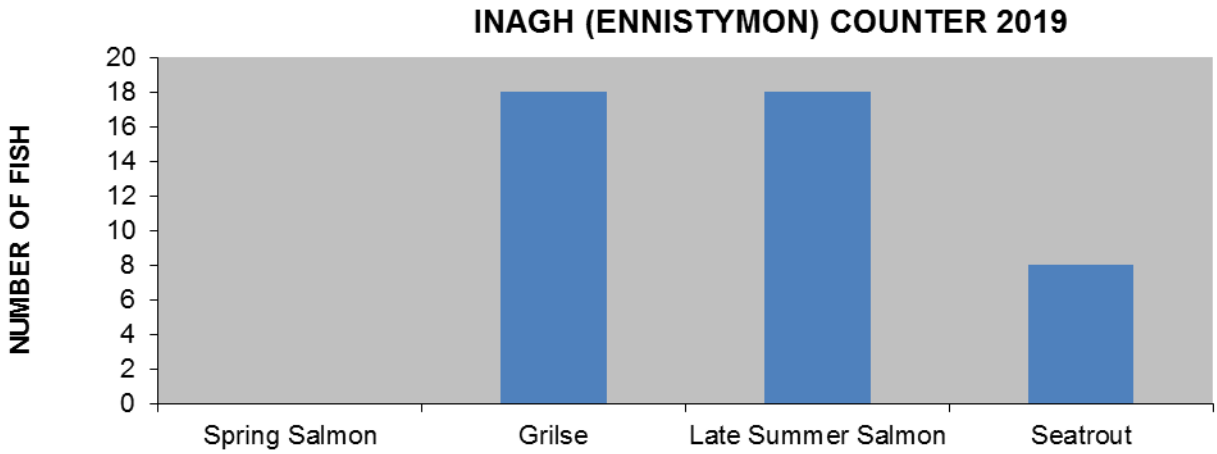
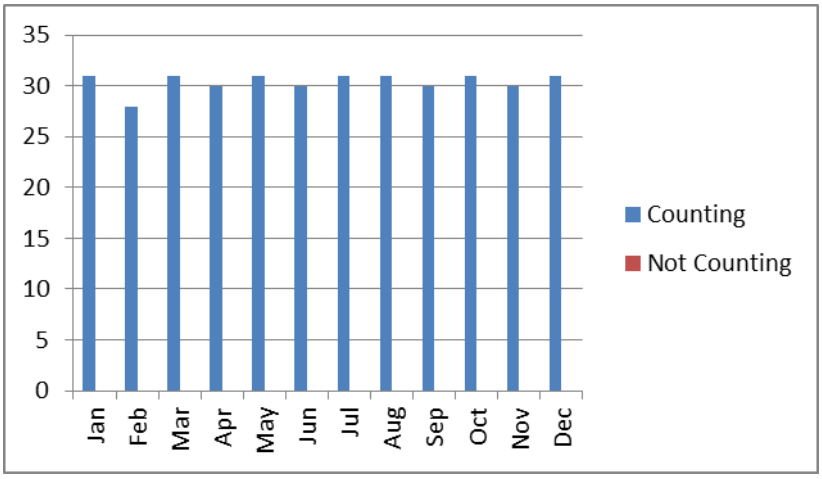


Table 24: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



13 Dunkellin River

Counter type: Logie
Operating: No operational
Performance: n/a
Verified: No

13.1 River site and description

The Dunkellin counter was installed early in 2010 and operational from June of that year. The counter is located upstream of the village of Kilcolgan. The counter is a three channel counter which operates well in medium and low water. This entire area is subject to extensive flooding this can lead to the weir being inundated for significant periods.

13.2 Operation

The counter was located in an area where a significant flood relief scheme has been undertaken. This involved overflow channels above and below the counter in 2017. The counter was to be relocated upstream to facilitate the flood relief works as part of the scheme. The plans to relocate the counter have not been realised yet despite the flood relief works being completed.

14 Corrib Counter

Type : Logie
Operating: Jan – Dec 2019
Performance: V.Good
Verified: Yes

14.1 River site and description

The Corrib counter is situated in a fish pass at the Salmon Weir in Galway. The system it uses is a Logie fish counter in conjunction with a tube fish pass that counts salmon which enter the tube on their return to the river from the sea. An underwater surveillance camera is used to verify the fish count recorded on the counter. Water levels invariably have an impact on the number of fish using the pass as salmon may run, in high water, run upstream through opened gates. This is a partial counter as it only counts fish ascending the river through the fish pass

14.2 Counter operation

The counter operated well during the 2019 season. The counter data has been verified and is accurate. The counter worked well without interruption and all the data has been verified and uploaded to the web site. This is a partial count for the river and the percentage of fish using the fish pass varies from year to year depending on the water level.

Table 25: Counter data for the Corrib River

Fish Species	Number
Spring salmon	451
Grilse	5718
Late Summer Salmon	20
Sea Trout	0

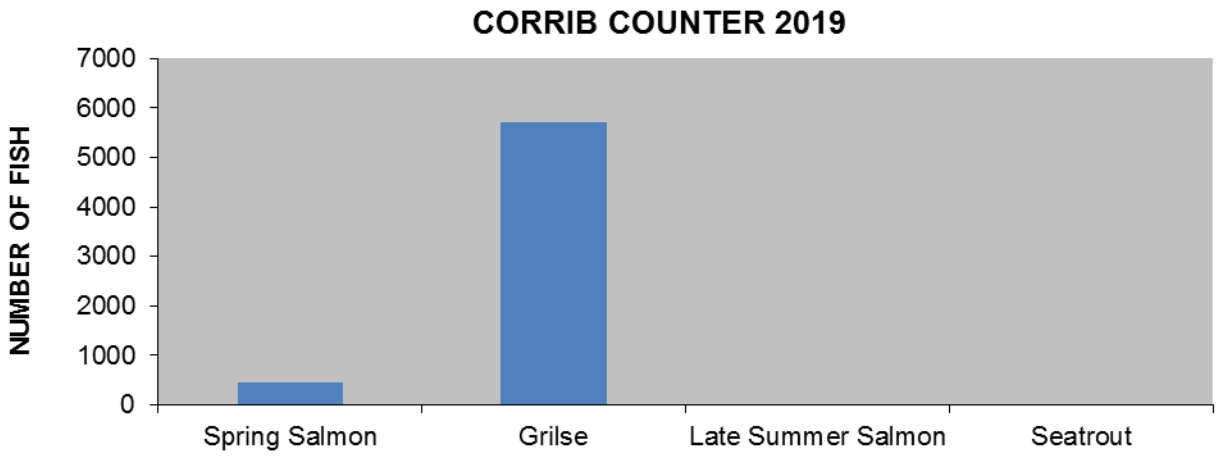
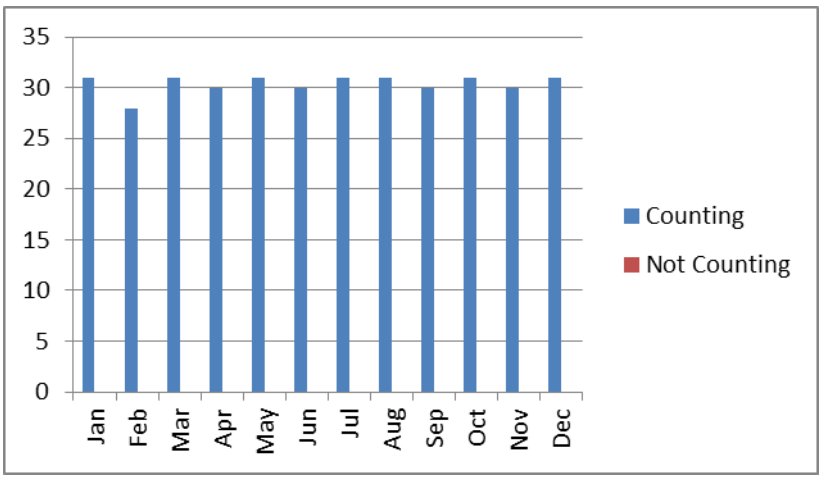
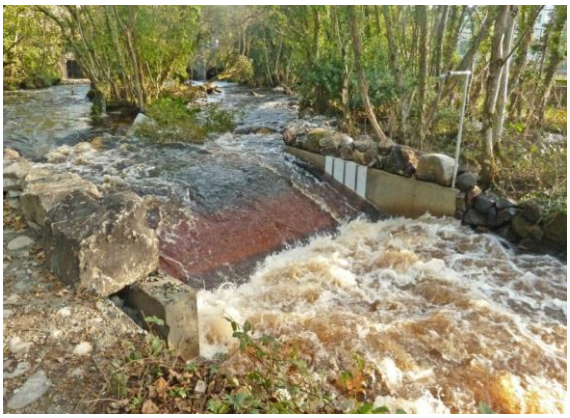


Table 26: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0





15 Owenboliska River

Type : Logie

Operating: Jan – Dec 2019

Performance: V.Good

Verified: Yes

15.1 River site and description

The counter is situated downstream of the village of Spiddal. The counter was constructed and commissioned by IFI in 2011 and was funded by the conservation stamp fund. The counter operates on a purpose built weir with one counting channel. A verification camera system is also in operation.

15.2 Counter operation

The counter has been operational for the entire season with no problems recorded. The counter is affected by the dumping of water from the impounding weir on the upstream lake. Sea trout can run the counter during these events and will not be detected by the counter. This sea trout counter data is more accurate in years where water levels are low and limited dumping of water from the impounding weir occurs.

Table 27: Counter data for the Owenboliska River

Fish Species	Number
Spring salmon	08
Grilse	160
Late Summer Salmon	41
Sea Trout	159

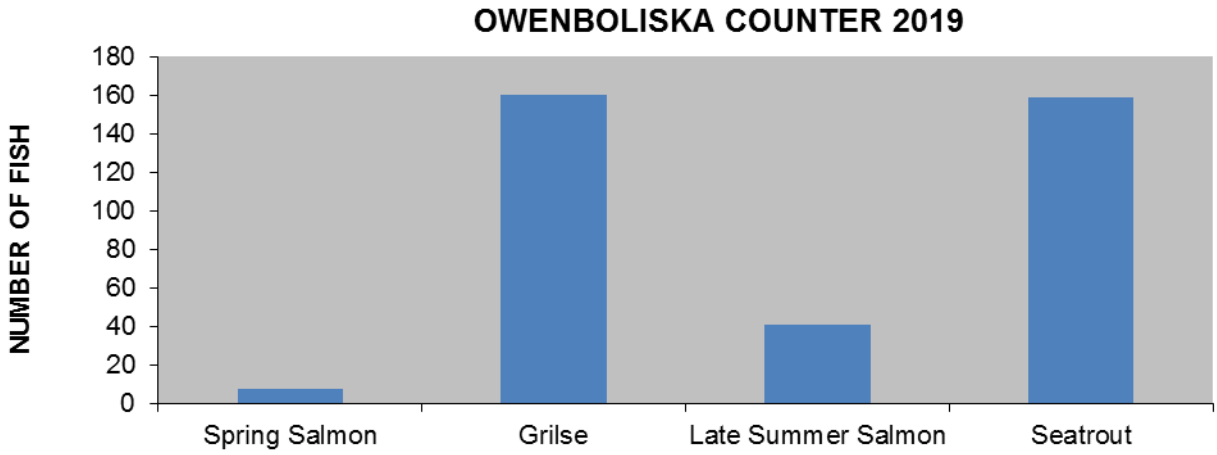
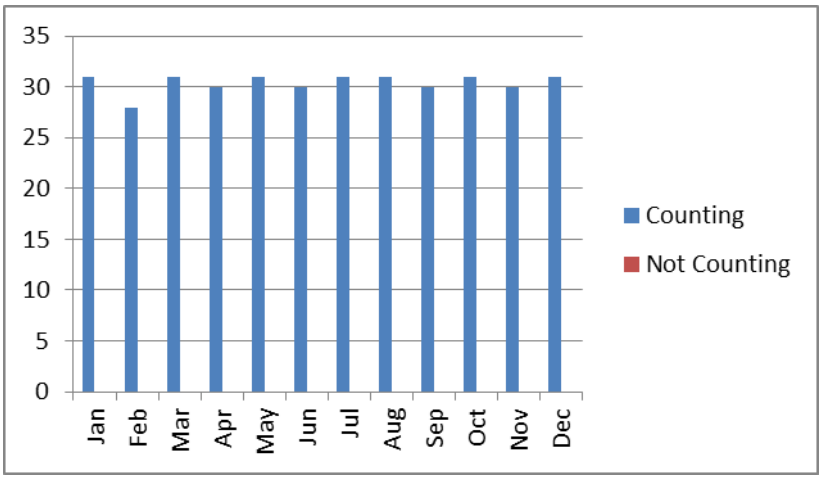


Table 28: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



16 Casla River

Type : Logie
Operating: Jan – Dec 2019
Performance: V.Good
Verified: Yes

16.1 River site and description

The Casla River is privately owned and is the main river of the Costello and Fermoyle Fishery. The river is six kilometres in length and drains an area of 83km2 which includes 22 lakes – it is a typical sea trout system. The counter is located at a crump weir situated close to the limits of tidal influence. Under most flow conditions fish will run up over the weir.

16.2 Operation

The counter operated very well throughout 2019. The counter hut has been upgraded with the removal of the old pumping equipment and the installation of a new steel door. The counter functioned well during the year. The computer was changed out prior to the upgrades to the hut. The counter has provided accurate counts with no loss of data for the year. Additional upgrades to the weir and hut are planned for 2020.

Table 29: Counter data for the Casla River

Fish Species	Number
Spring salmon	96
Grilse	473
Late Summer Salmon	81
Sea Trout	1705

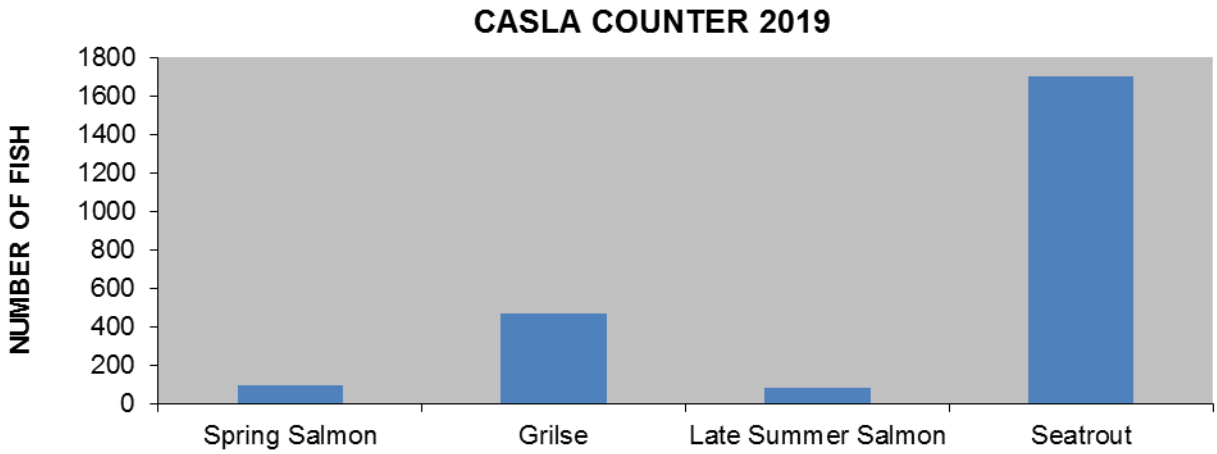
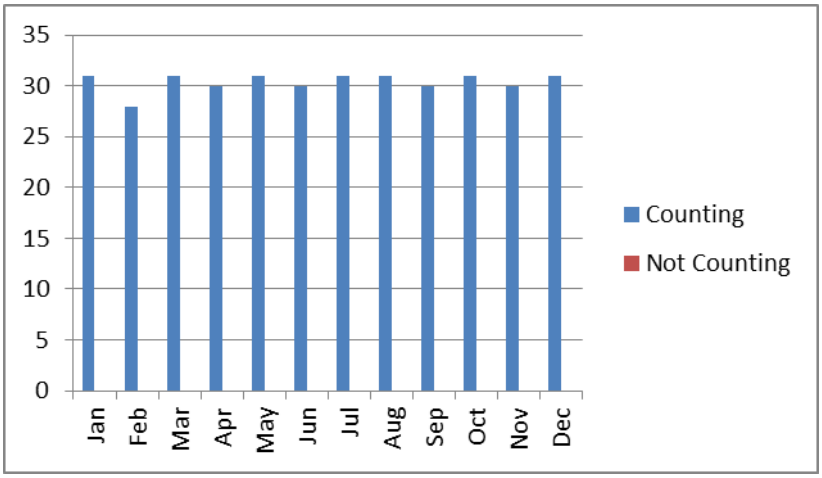


Table 30: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



17 Invermore River

Type : Logie
Operating: Jan - Dec 2019
Performance: Good
Verified: Yes

17.1 River site and description

The Invermore counter is located upstream of the old trapping facility 100m above the intertidal zone. A new purpose built weir has been constructed to facilitate the counter. The electrode spacing has been set to count salmon and sea trout. The counts are verified using CCTV and uploaded to the web site.

17.2 Operation

The counter has worked well throughout the year. This counter was installed to replace an old trapping system. The counter and cameras have performed well over the year. The counts for the river are accurate and it is hoped to eliminate all back ground noise on the weir to allow the collection of accurate data for the smaller sea trout entering the system over the coming seasons.

Table 31: Counter data for the Invermore River

Fish Species	Number
Spring salmon	11
Grilse	12
Late Summer Salmon	0
Sea Trout	39

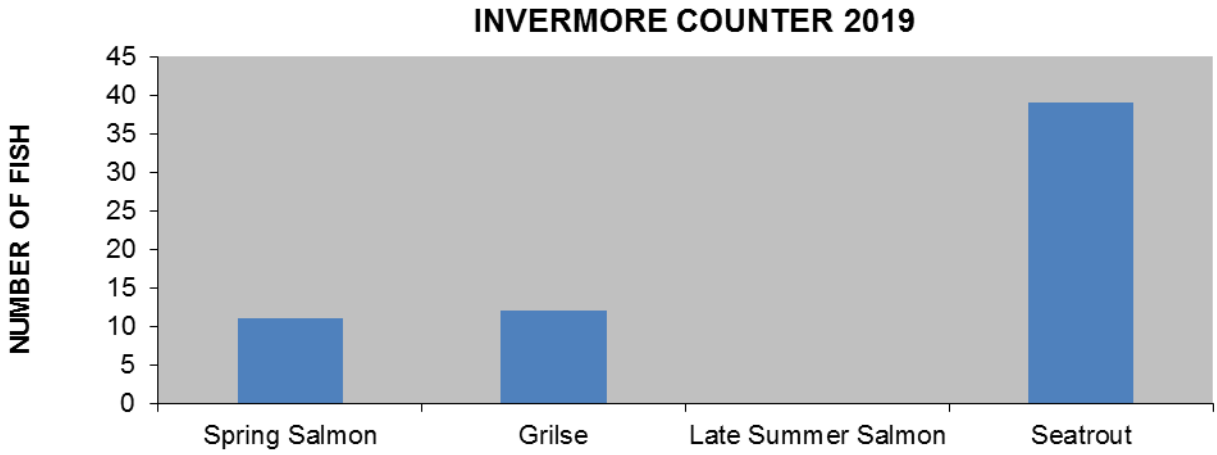
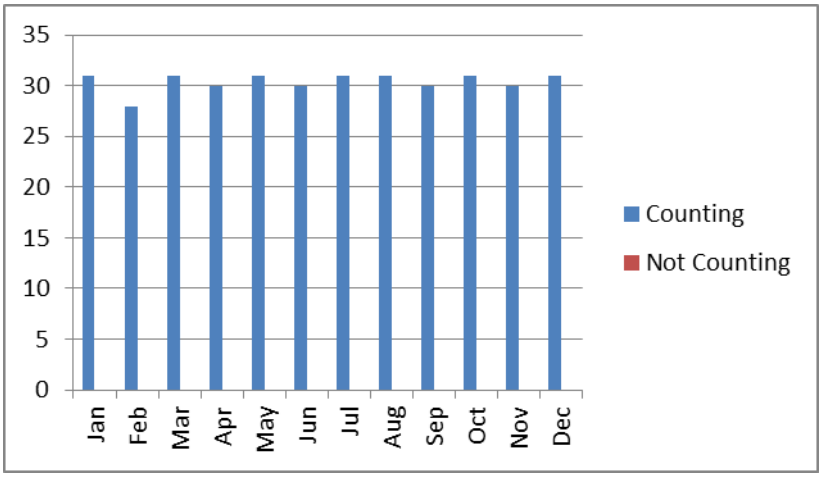


Table 32: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



18 Owengowla River

Type : Logie
Operating: Jan - Dec 2019
Performance: Good
Verified: Yes

18.1 River site and description

The Gowla counter is located at the old trapping facility 100m above the intertidal zone. This is a new counting facility completed in 2013. The site consists of a two channel weir which is set up to count sea trout. The counter was installed to replace a partial counter and trapping facility.

18.2 Operation

The Vaki on this site was removed to facilitate the installation of a crump weir and Logie counter. The site provides a total count for salmon and sea trout for the river. The site has provided accurate counts for 2019 with no breakdowns or loss of data. Camera data for the river suggest a small run of very large salmon run this system every year. The run of sea trout recorded is lower than expected due to the dry summer.

Table 33: Counter data for the Owengowla River

Fish Species	Number
Spring salmon	0
Grilse	23
Late Summer Salmon	50
Sea Trout	91

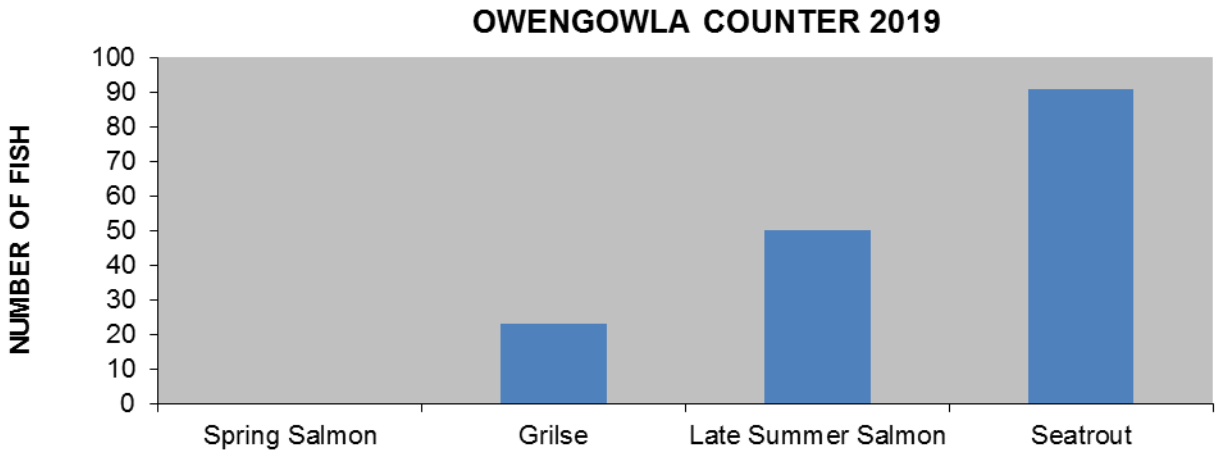
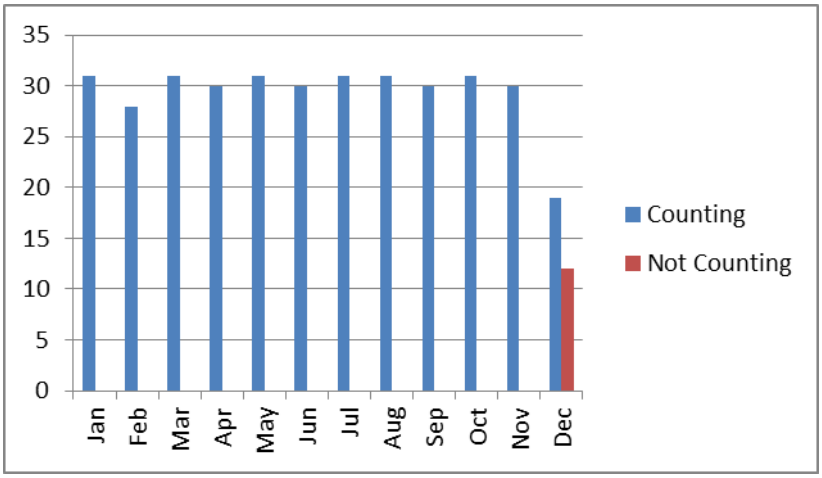


Table 34: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
353	12



19 Inagh River

Type : Logie

Operating: Jan – Dec 2019

Performance: V.Good

Verified: Yes

19.1 River site and description

The Inagh counter is located on the Inagh River 40 m above Derryclare Lake. It is the location of the first Logie counter in the country which was installed in the late 1980's. The structure is a purpose built crump weir with one counting channel to facilitate a Logie counter. The counts are verified by CCTV. The fishing rights are privately owned by a syndicate and managed by Lough Inagh Lodge Hotel.

19.2 Operation

The counter worked well throughout 2019. The low water all summer allowed for accurate verification of the counts for salmon. The counters counts salmon accurately but sea trout can use an alternative channel which is not counted. The computer operating the counters was repaired and reconfigured on a number of occasions to ensure verification was possible on the full data set. The data collected until the end of July is verified and remaining data for 2019 is not verified.

Table 35: Counter data for the Inagh River

Fish Species	Number
Spring salmon	0
Grilse	119
Late Summer Salmon	29
Sea Trout	94

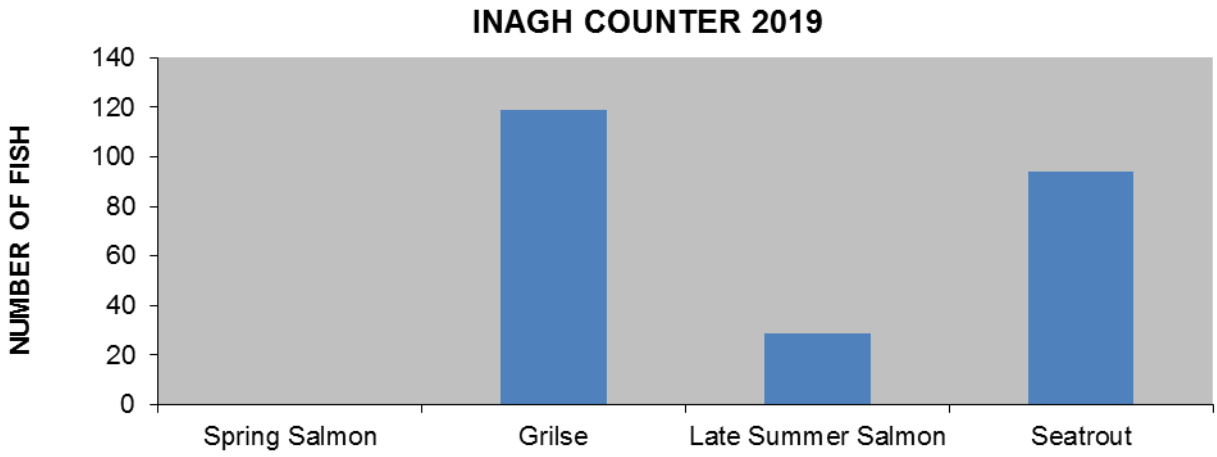
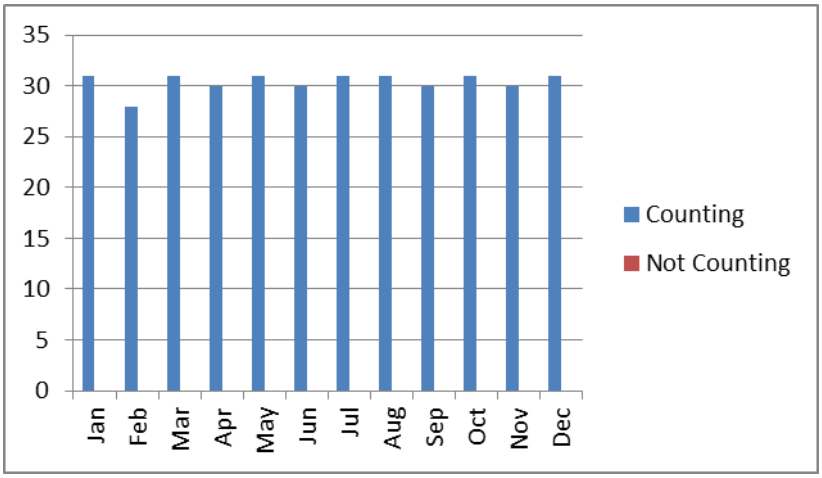


Table 36: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



20 Owenglin (Clifden River) River

Counter type: Vaki
Operating: Jan – Dec 2019
Performance: V. Good
Verified: Yes

20.1 River site and description

The site of the counter in the Owenglin River is located in the existing fish pass just upstream of the estuary. The Vaki counter and camera are particularly suited to this type of site. The counter and camera are housed in a stainless steel purpose-built frame which allows the counter to activate the camera and provide video and infrared silhouette images of the fish. The fishing rights to the Owenglin River are privately owned by the Clifden Angling Club. The catchment includes numerous small lakes.

20.2 Operation

The counter has operated well over the course of the period when fish were running the system. This Vaki counter sustained damage and has since been repaired. An alternative set of panels were installed to cover the repair period. The original counter has been reinstalled and has worked well. The count for the river is up on previous years and this reflects what anglers have experienced and what staffs are reporting.

Table 37: Counter data for the Owenglin River

Fish Species	Number
Spring salmon	67
Grilse	452
Late Summer Salmon	124
Sea Trout	36

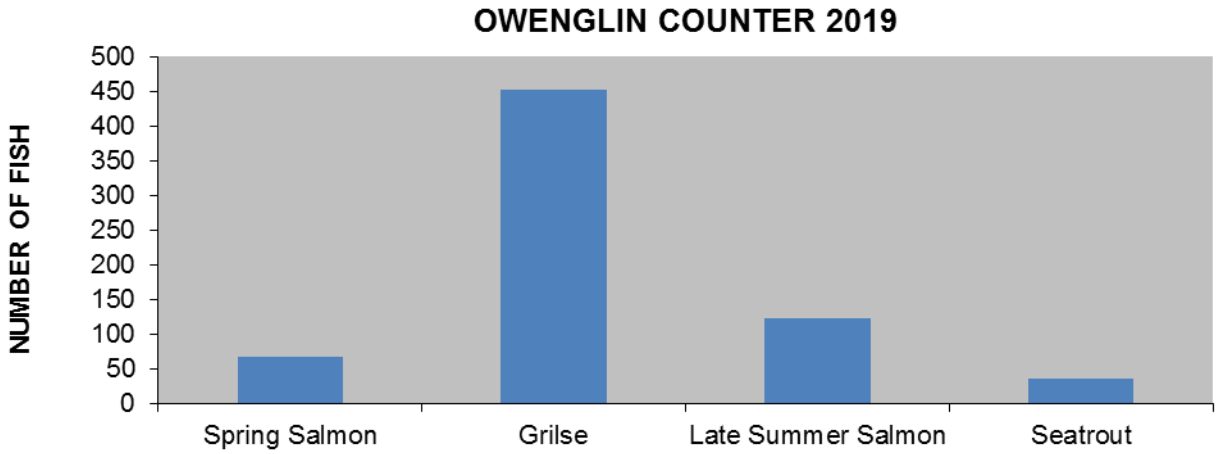
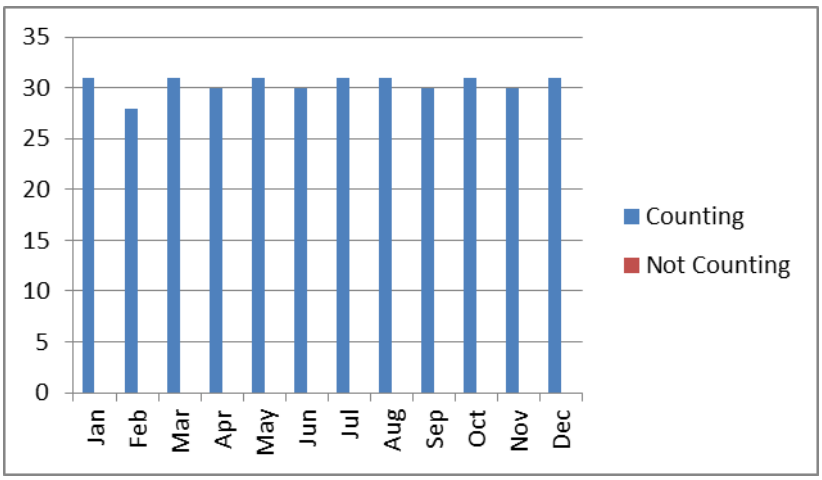


Table 38: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



21 Dawros (Kylemore) River

Counter type: Logie
Operating: Jan – Dec 2019
Performance: V. Good
Verified: Yes

21.1 River site and description

The Dawros is a privately owned river with three groups owning the fishing rights. The river has traditionally enjoyed good salmon and sea trout runs. The system incorporates three lakes (Kylemore Lake, Pollagcapaill, and the Castle Lake) and the Dawros River which enters the sea in Ballinakill Bay.

21.2 Operation

The counter operated well during the course of the year. The numbers of fish recorded have all been verified by camera. The figures have proved to be very accurate regardless of the water levels. The counter has two operational crumps and there is a complete set of data for the year. The cables have been upgraded in 2019 to ensure accurate counts for this site going forward. Additional work on the cables will be completed in 2020.

Table 39: Counter data for the Dawros River

Fish Species	Number
Spring salmon	273
Grilse	934
Late Summer Salmon	159
Sea Trout	1948

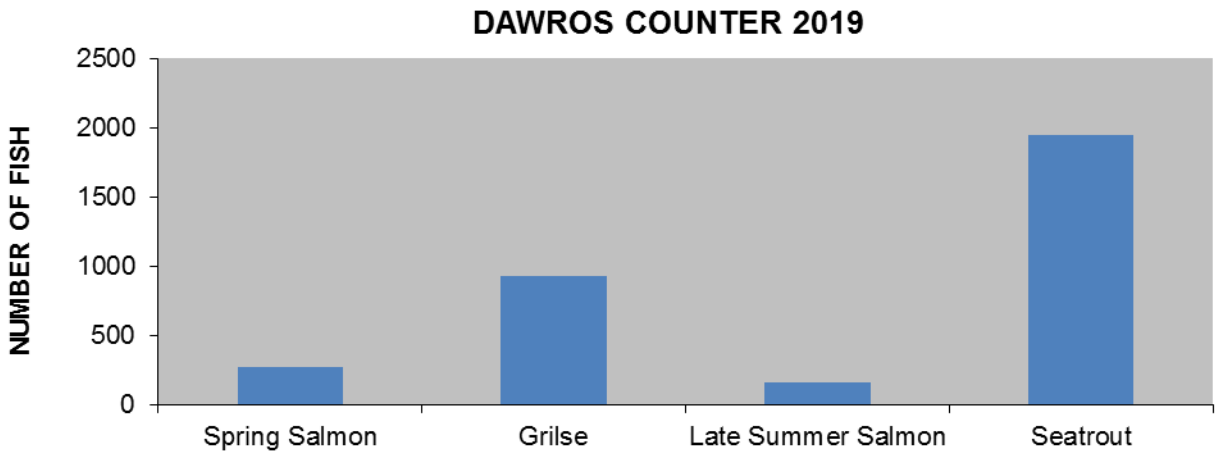
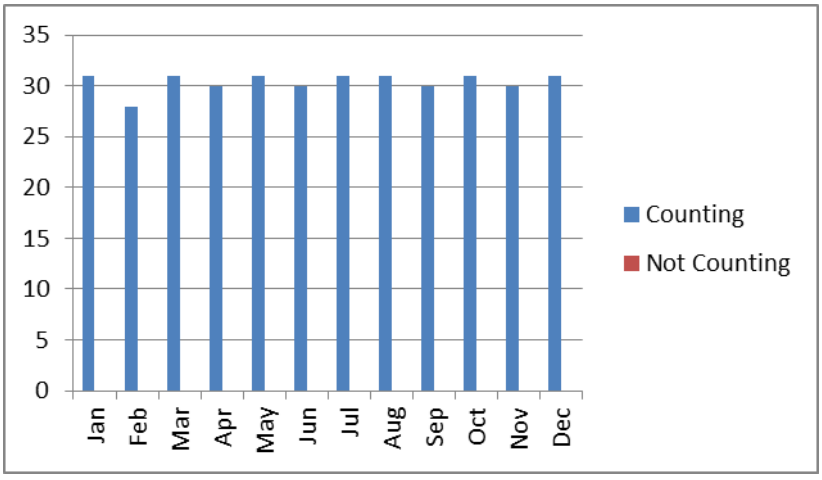


Table 40: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



22 Culfin River

Counter Type: Logie
Operating: Jan – Dec 2019
Performance: V. Good
Verified: Yes

22.1 River site and description

The Culfin counter is located in Lettergesh village down-stream of Lettergesh Bridge. The river is open for angling with a surplus of fish. The structure is a purpose built weir with two counting channels. The counts are verifies by CCTV. The fishing rights are privately owned by the Ormsby and Thomson families.

22.2 Operation

The counter has not had any problems and worked consistently throughout the year. The counter has been carefully maintained and has produced accurate verifiable figures. The numbers of fish remains constant each year. A small number of lampreys have been identified crossing the counter from time to time. This hardware on this site will be upgraded in 2020.

Table 41: Counter data for the Culfin River

Fish Species	Number
Spring salmon	106
Grilse	344
Late Summer Salmon	43
Sea Trout	255

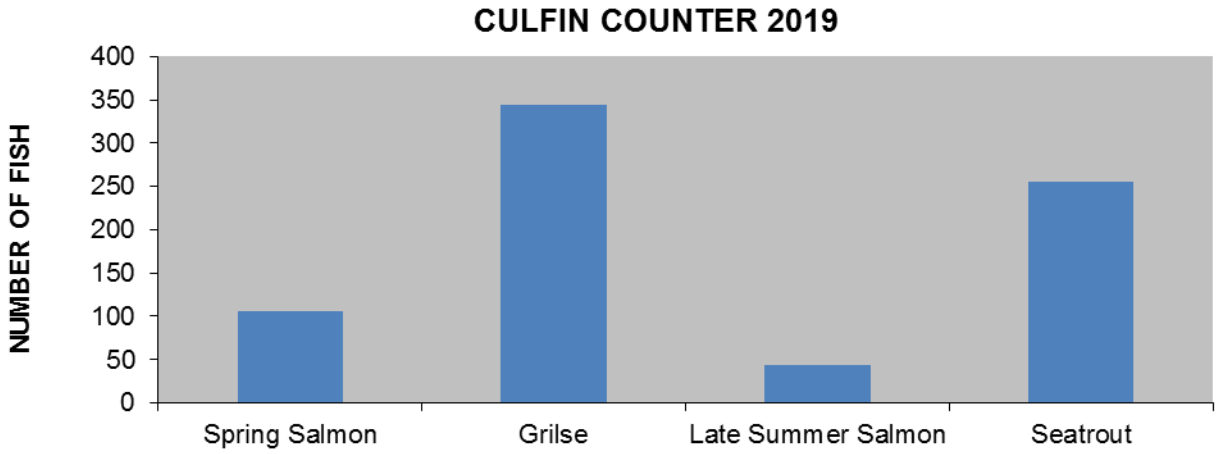
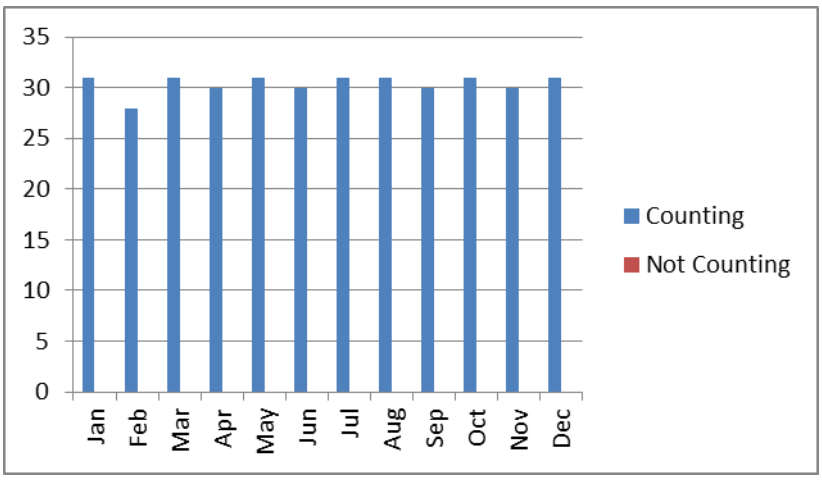


Table 42: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



23 Erriff River

Counter type: Vaki
Operating: Jan- Dec 2019
Performance: V. Good
Verified: Yes

23.1 River site and description

The Erriff River is The National Salmonid Index Catchment River for IFI. The River has been one of the principle salmon and sea trout fisheries in the West of Ireland. IFI operates a Vaki counter on the river. The location of the counter is at the top of the fish pass which allows migrating fish to pass the famous Aasleagh falls.

23.2 Operation

The counter was repaired and reinstalled adjacent to the Pit tag reader. The data was collected by the counter and verified by trap data. This unique setup allows IFI to assess the efficiency of the Vaki as a counter and operated adjacent to a new pit tag reader. The run of salmon was an average run for the River. The data is a net figure for wild fish into the system as tagged ranched salmon are removed from the system at the trap and are not allowed to access the river to spawn.

Table 43: Counter data for the Erriff River

Fish Species	Number
Spring salmon	151
Grilse	2210
Late Summer Salmon	982
Sea Trout	1190

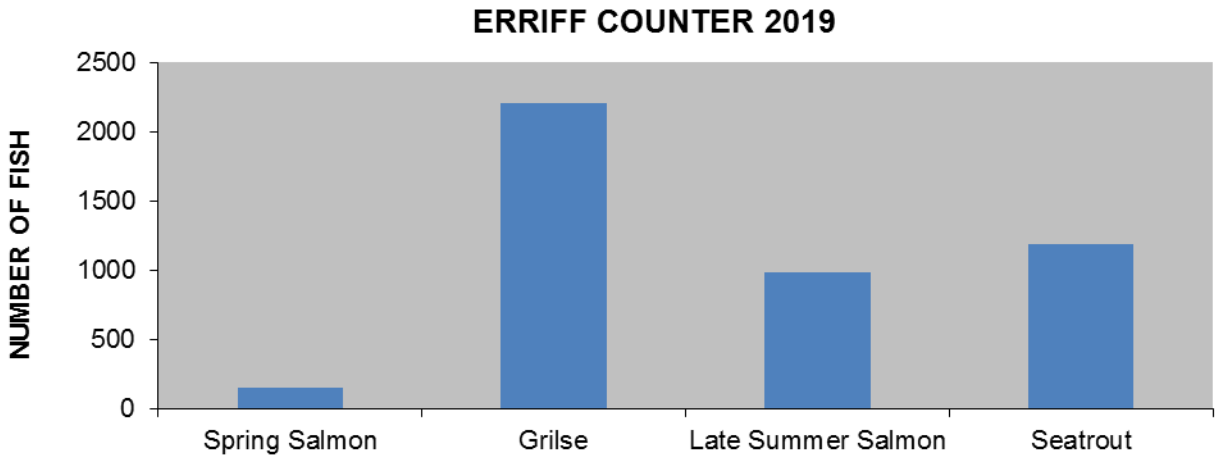
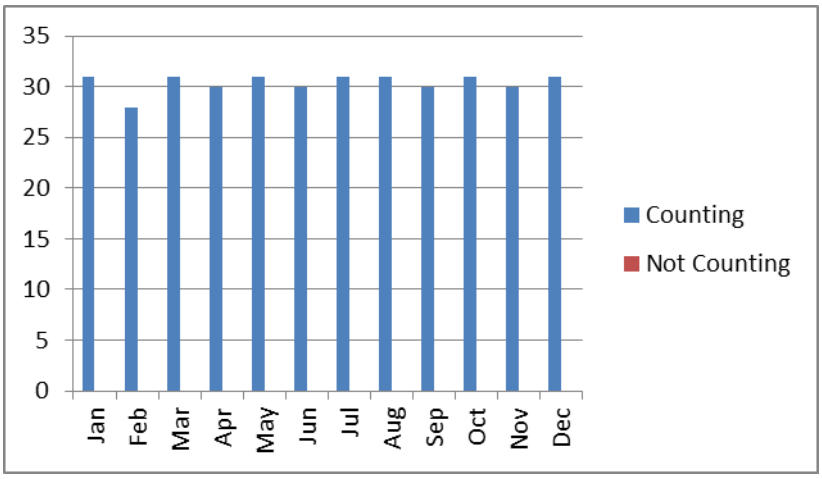


Table 44: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



24 Bunowen River

Counter type: Logie
Operating: Jan-Dec 2019
Performance: V. Good
Verified: Yes

24.1 River site and description

The Bunowen River is partially owned by the state and managed by Inland Fisheries Ireland. There is a small section of the river that is privately owned. The river is 10 kilometres in length and drains an area of 75km squared which includes three lakes. The counter is located beside the IFI store at Ballyhip, Louisburgh, Co. Mayo.

24.2 Operation

The counter has performed well over the year and continues to provide an accurate total count for the river. The computer was replaced in early summer to ensure the data was verified on this site. The location of the counter is well upstream of the confluence with the sea. The counter usually records a late run of fish – this is not due to fish entering the river late in the season but is due to fish resting in the deep pools in the lower section of the river over the summer and only ascending the river to spawn in November and December.

Table 45: Counter data for the Bunowen River

Fish Species	Number
Spring salmon	348
Grilse	173
Late Summer Salmon	251
Sea Trout	147

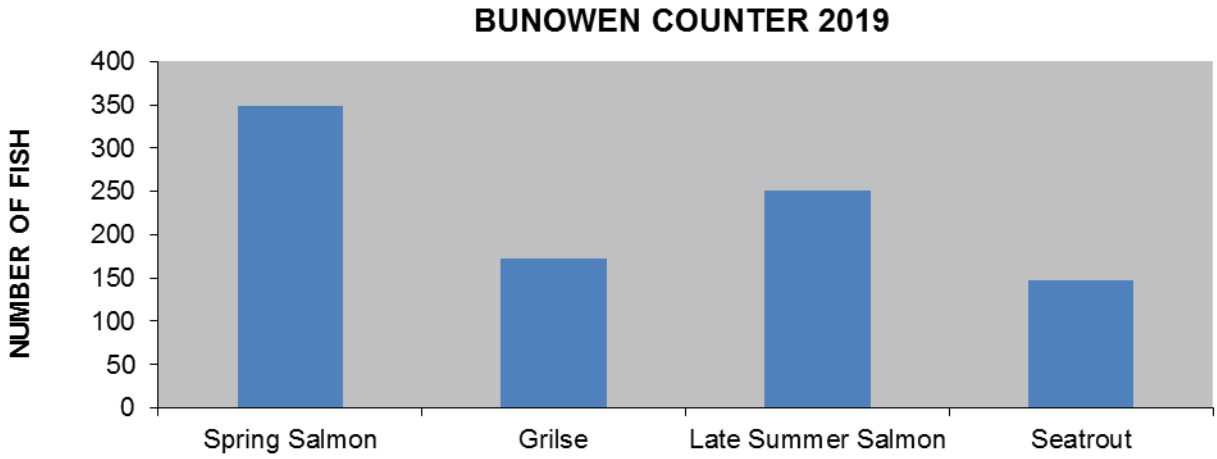
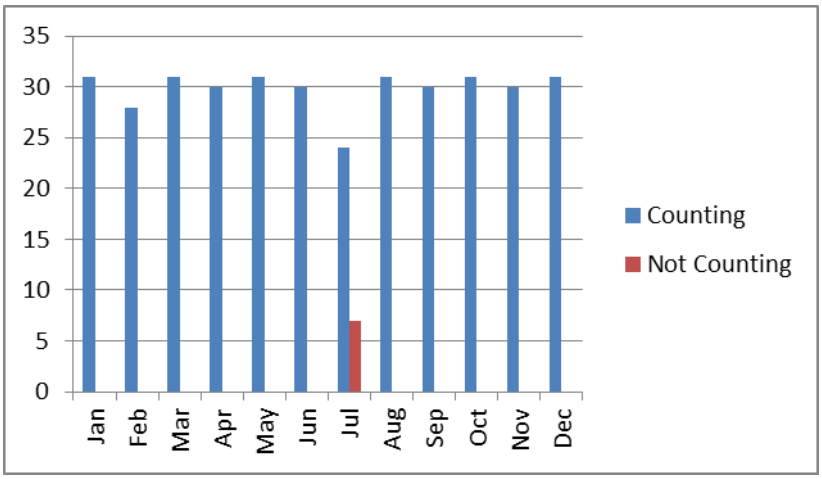


Table 46: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
358	07



25 River Moy Counters

Counter type: Logie/Vaki
Operating: Not Operational
Performance: N/A
Verified: No

25.1 River site and description

The completion of the refurbishment works on the Ballina Salmon Weir allowed for the reintroduction of the counters on the Moy River. Following an upgrade in 2014 there are now two Logie counter crumps and two Vaki counters which were installed in May of 2012. The counters are located on the site of the refurbished weir. The four counters provide a partial count for the river.

25.2 Operation

The counting section of the Moy is two Logie crumps and two Vaki channels. The counters were not operational during the summer months. The most significant numbers of fish travelling upstream do so through the queen's gap without being counted. The counts from year to year depend on water level and can vary significantly; the facility only provides a partial count. Counting in the winter months is limited due to the risk of leaving the gates closed and the resulting flood risk to the town.

26 Eske River

Counter type: Logie
Operating: Jan- Dec 2019
Performance: V Good
Verified: Yes

26.1 River Site and Description

The Eske fishery consists of the 5km River Eske, the 900 acre Lough Eske and its tributaries. The fishery has a run of spring salmon, a good run of grilse and late salmon. The counter at this installation is a resistivity (Logie) counter**.**

26.2 Operation

The counter worked well all year and a full count for the year on all 3 channels was obtained. There were fewer power cuts this year and the U.P.S. coped with all of these since they were of short duration. The counter was downloaded and all data was verified on a weekly basis giving accurate counts for the river. Two new cameras and cables were installed in 2019 and the connections to the weir upgraded.

Table 47: Counter data for the Eske River

Fish Species	Number
Spring salmon	40
Grilse	349
Late Summer Salmon	86
Sea Trout	28

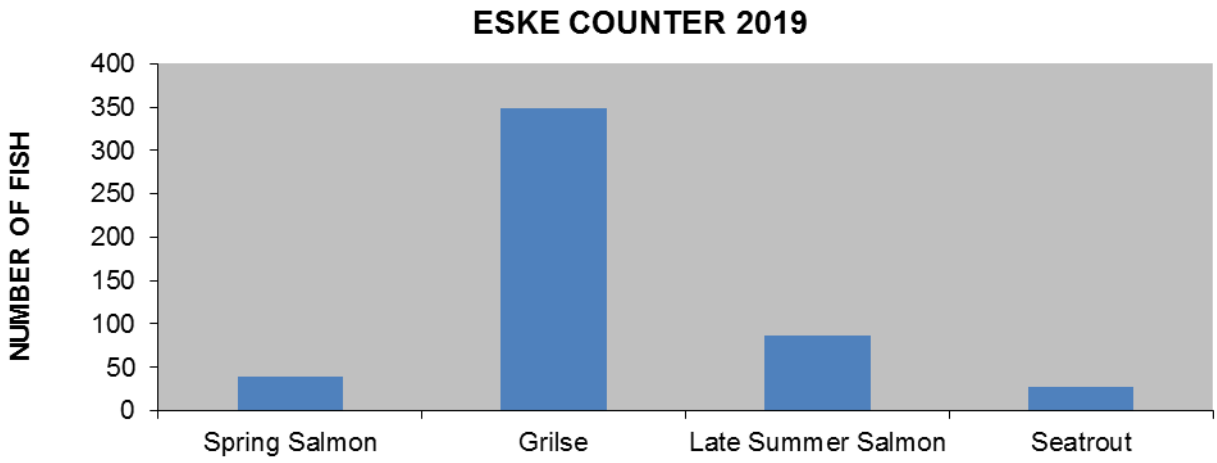
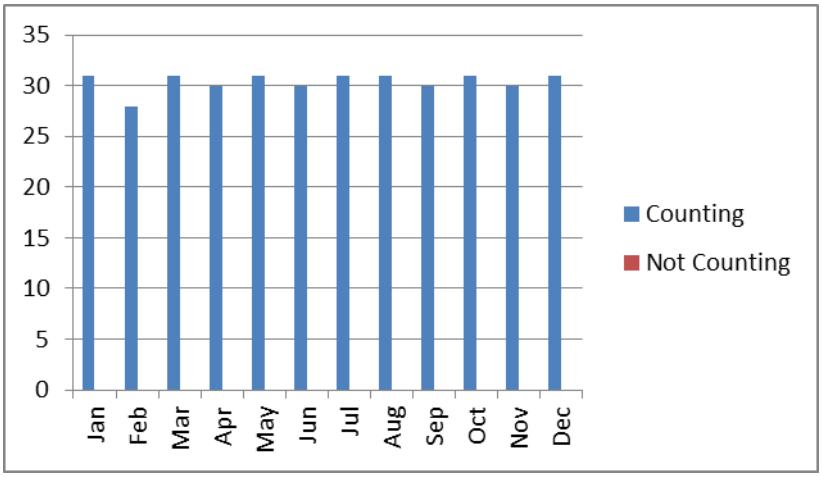


Table 48: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



27 Eany River

Counter type: Logie
Operating: Jan- Dec 2019
Performance: V Good
Verified: Yes

27.1 River site and description

The Eany water fishery is a spate river and forms part of the 125sq km Eany catchment area comprising the Eany water, the lower reaches of the Eanymore and the lower reaches of the Eanybeg. The fish counter is located in the lower section of the river just above the tidal area. The fishery has a small run of spring fish but is noted for its midsummer runs of grilse, late runs of summer salmon and for sea-trout.

27.2 Operation

The Logie counter worked well resulting in a comprehensive count for the year for the river. A small number of maintenance issues were sorted out promptly and this ensured a continuous accurate count. All of the data collected by the counter has been verified by CCTV cameras. New camera and cables have been installed during year.

Table 49: Counter data for the Eany River

Fish Species	Number
Spring salmon	85
Grilse	562
Late Summer Salmon	109
Sea Trout	17

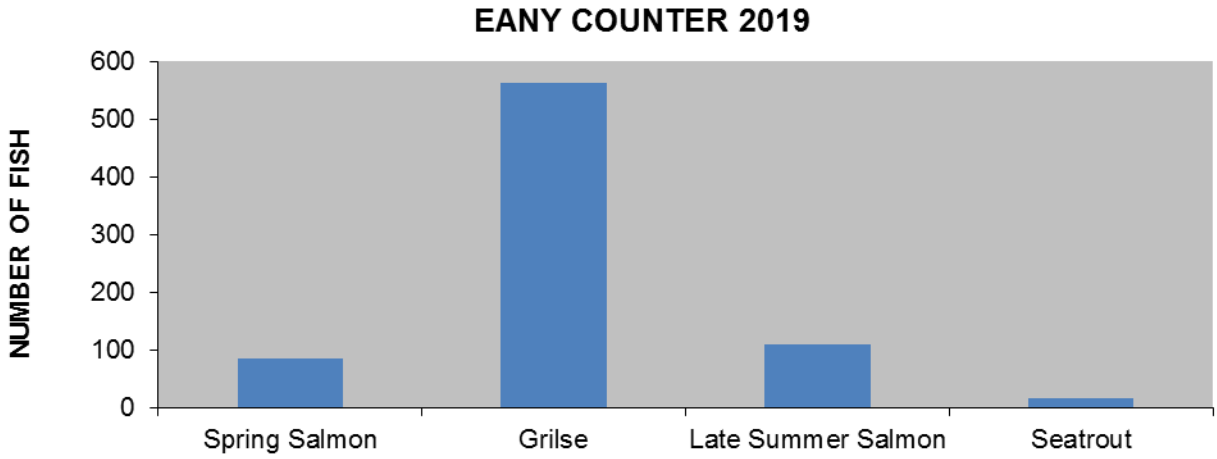
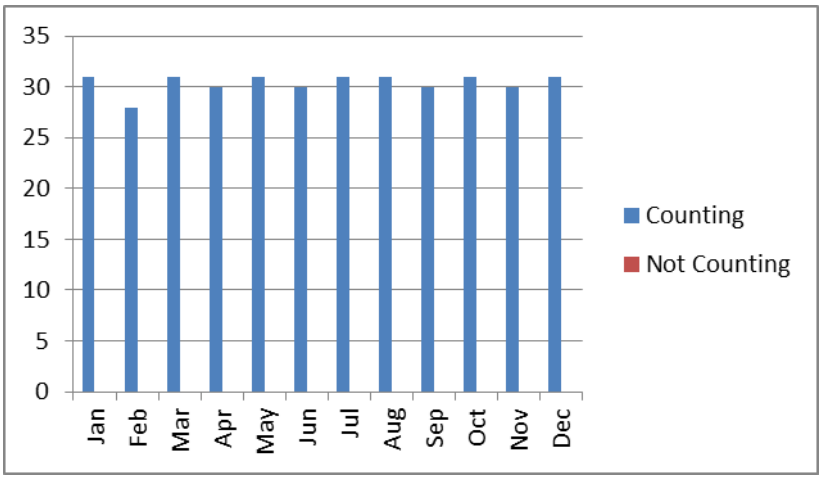


Table 50: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



28 Lackagh River

Counter type: Logie
Operating: Jan–Dec 2019
Performance: Excellent
Verified: Yes

28.1 River site and description

The Lackagh fishery is situated partially within Glenveagh National Park and within an S.A.C. This fishery is one of the few recognized multi-winter sea winter salmon fisheries in the North West. This fishery is currently below its conservation limit. The new counter has been built and was commissioned early in 2017. The counter is a three channel resistivity counter with verification cameras on all three crumps. The counter has been engineered with a walkway to allow for easy access for maintenance and repairs.

28.2 Operation

The counter has been funded by the "Salmon Conservation Fund" and was operated by IFI staff. The counter was commissioned in April 2017 and has counted successfully since installation. A new computer has been installed to test new software and hardware for the fish counter programme. All fish movements were verified on the site. The counter has performed well on this site and has provided very accurate counts.

Table 51: Counter data for the Lackagh River

Fish Species	Number
Spring salmon	147
Grilse	334
Late Summer Salmon	11
Sea Trout	97

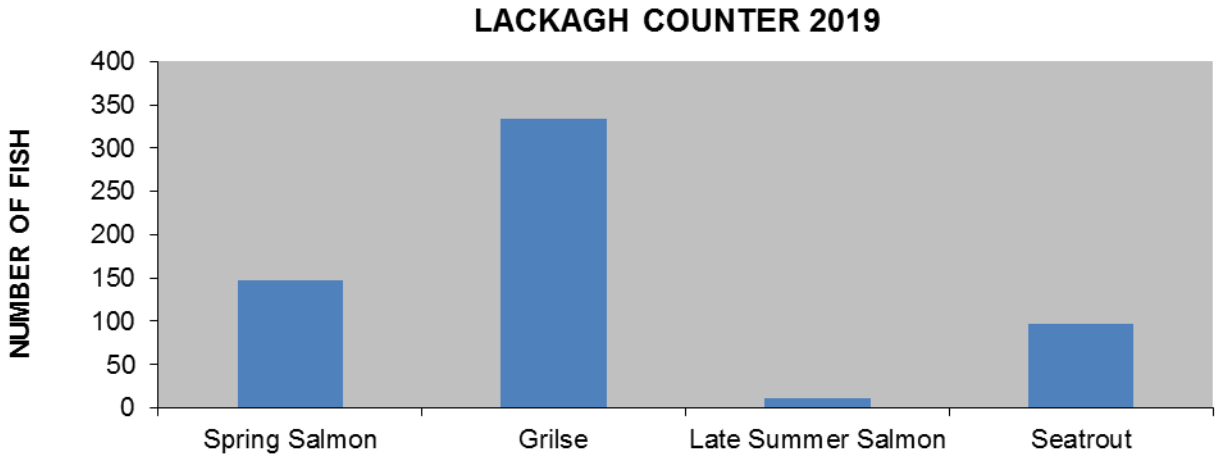
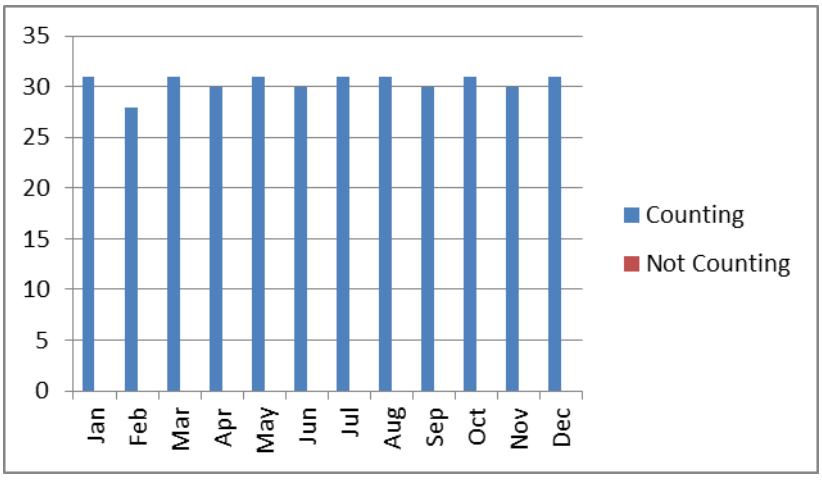


Table 52: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
365	0



Conclusion

The fish counter programme has operated successfully with almost all the counters sites providing accurate verified data for the year. Significant work in researching new systems to complement the existing network lies ahead. A new system of repairs and remote access is being investigated and a new system to verify fish is being tested and rolled out which will ensure the current investment in infrastructure is viable into the future.

The programme has required additional time above what was planned due to the abrupt ending of the supply of suitable compatible computers and DVR cards for verification. This had been planned for later in 2020, the switch to DVR based verification was required quicker than expected. The new system will allow for the high definition cameras which will have a significant impact on river systems like the Maine to identify more accurately the larger sea trout from salmon.
Plans for 2020 will require investment in verification hardware and a number of infrastructure projects. A Strategic and Maintenance plan has been formulated to provide a framework for the programme for the next five years.

Acknowledgements

The compilation of this report would not be possible without the expert work and efforts made by many staff attending to the counters and the relevant software. I am also indebted to the team of staff who put in the time working on the counters and verifying the results.