

IFI Consolidated Fish Counter Summary Report

2022

IFI/2023/1-4640



Iascach Intíre Éireann
Inland Fisheries Ireland



Foreword

Inland Fisheries Ireland have developed the National Fish Counter Programme to consolidate all counters and counter data within 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 constantly evolving with issues of compatibility, software and availability of hardware all requiring management as the programme looks to secure its long-term future. Remote access solutions are being investigated to assist in reducing the carbon footprint of the programme while increasing the download capability. These issues have been incorporated into a risk-based assessment plan for the management of the programme.

The national network of counters operated successfully over the twelve-month period. 2022 was a very successful year for the programme. Ninety five percent of the counter sites have been successfully upgraded with high-definition technology and recording equipment. Sites identified in the five-year plan for structural upgrades have advanced into the planning and Environmental assessment stage. Additional smaller structural projects which did not require significant funding or planning were completed.

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. Several significant challenges lay ahead for the current fish counter programme.

Barry Fox

Head of Operations



Contents

Introduction.....	4
1 River Fane	5
2 River Dee	7
3 Boyne Counter	9
4 Liffey Counter.....	11
5 Slaney Counter.....	13
6 Kerry Blackwater	15
7 Waterville	17
8 River Maine.....	19
9 Feale River.....	21
10 Maigue River	23
11 Mulkear	25
12 Fergus River.....	27
13 Inagh River (Ennistymon)	29
14 Dunkellin River	31
15 Corrib Counter.....	33
16 Owenboliska.....	35
17 Casla River.....	37
18 Owengowla.....	39
19 Inagh Counter	41
20 Owenglin (Clifden River) Counter	43
21 Dawros (Kylemore) River Counter	45
22 Culfin Counter	47
23 Erriff River	49
24 Bunowen River	51
25 River Moy Counters	53
26 Eske River.....	54
27 Eany River	57
28 Lackagh River.....	59
ESB Counter Network.....	61
29 Leixlip.....	62
30 Cliff Hydro Station.....	64
31 Ardnacrusha Hydro Station.....	66
32 Parteen Weir.....	68
33 Inishcarra Hydro Station.....	70
34 Clady.....	71
Conclusion.....	73
Acknowledgements	73



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 on counting salmon nationally, but a small number of counters are specifically configured to count sea trout. The accuracy of the sea trout counts depends on the size of the fish and the conditions at the time.

During 2022 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. Despite the global pandemic new recording equipment and high-definition cameras were successfully installed on an additional seven sites which completed the upgrade project. Additional upgrades and repairs will be part of the annual maintenance programme.

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 2022

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 on this weir as the connections on the weir were upgraded and sealed. The counter provided good data for 2022. The site has been visited regularly, downloaded, and was reconfigured and tested during the year. Additional works to upgrade the facility from a health and safety point of view are planned in conjunction with the local angling club.



Table 01: Counter data for the R. Fane

Fish Species	Number
Spring salmon	97
Grilse	65
Late Summer Salmon	17
Sea Trout	10

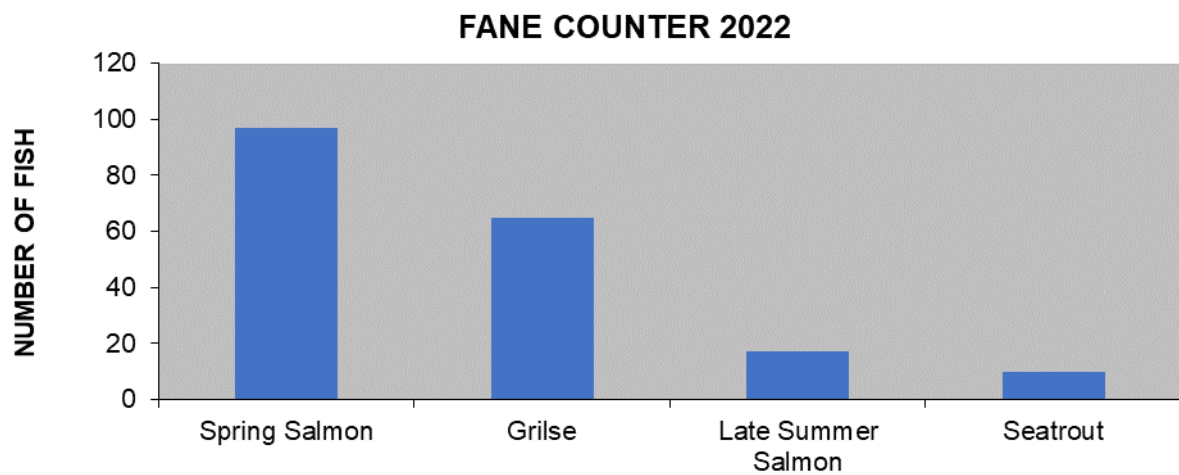
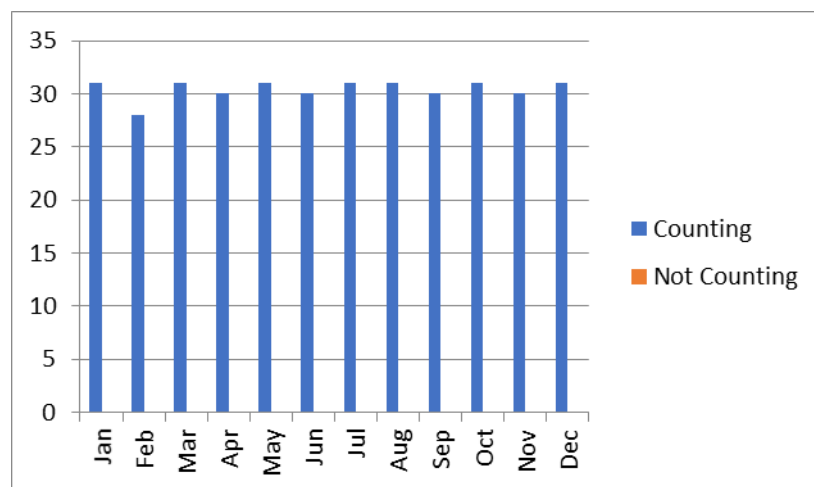


Table 02: Counter Operations

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



2 River Dee



Type : Vaki

Operating: Jan- Dec 2022

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 was uploaded by IFI staff from the Dundalk District. The data is verified on site using the Winari software.

2.2 Operation

The new Vaki Riverwatcher has been successfully installed on this site. This was funded under the salmon Conservation fund. A protective grate specifically made to protect the fish counting panels in the fish pass has also been installed. The new Vaki display unit had to be returned to Iceland for repairs and an alternative unit was dispatched to the site to keep the counter operational.



Table 03: Counter data for the R. Dee

Fish Species	Number
Spring salmon	30
Grilse	38
Late Summer Salmon	85
Sea Trout	172

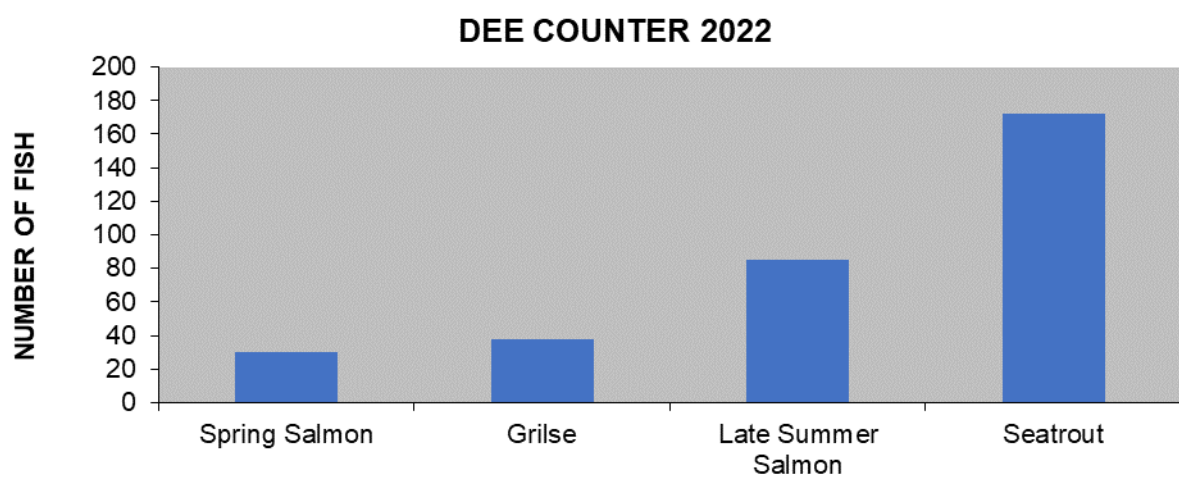
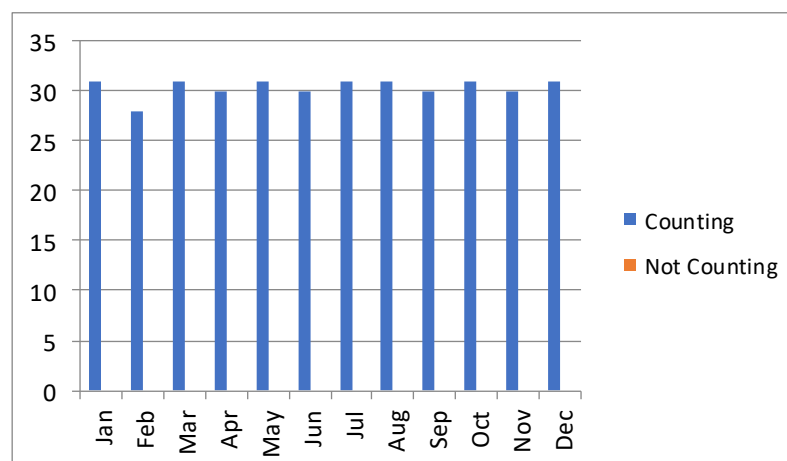


Table 04: Counter Operations

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



3 Boyne Counter



Counter type: Logie and Vaki

Operating: Jan – Dec 2022

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 number 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 counter site suffered a significant electrical event during the year. The Logie counter and Vaki counter were damaged as a result. A new Logie counter was installed on the site and is working well. The Vaki counters need to be replaced with new units.



Table 05: Counter data for the R. Boyne

Fish Species	Number
Spring salmon	349
Grilse	217
Late Summer Salmon	1075
Sea Trout	0

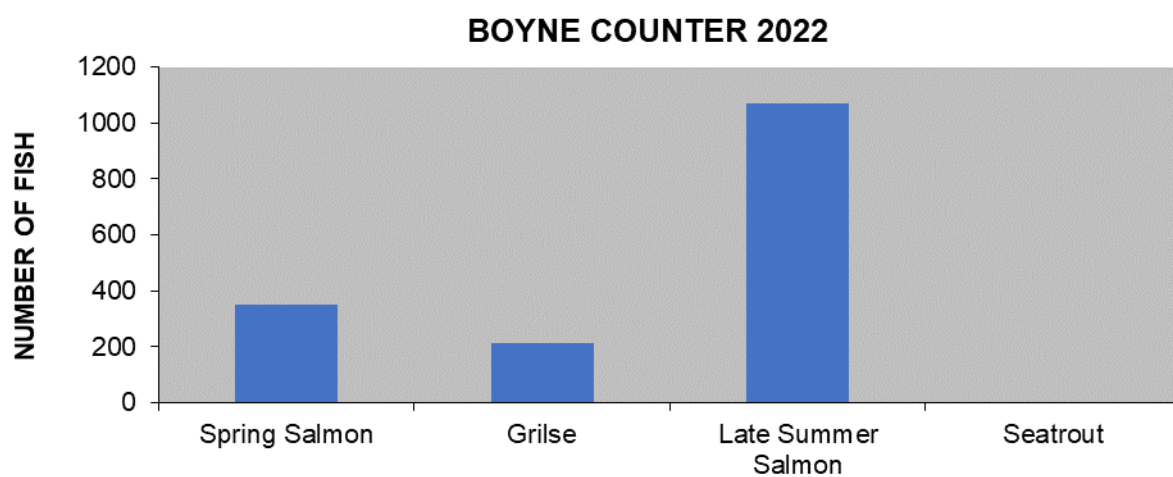
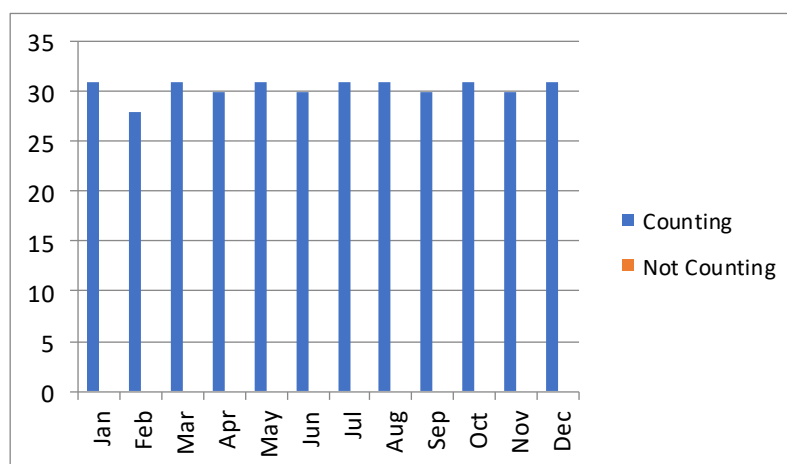


Table 06: Counter Operations

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



4 Liffey (Island Bridge)



Counter Type: Vaki

Operating: Jan – Dec 2022

Performance: V Good

Verified: Yes

4.1 River site and description

The fish counter is at Island bridge, 5km west of Dublin city centre. It is an older Vaki counter and was recently transferred to IFI from the Marine Institute. The data is downloaded and verified locally on the computer system which is housed in a hut beside the weir.

4.2 Operation

Routine checks on the counter revealed that water levels were falling, and it eventually dried out in August and by 19th August the fish pass had run completely dry. Local IFI staff and Dublin City Council along with other users engaged with a consultant to locate the issue. It was determined that the low flow of water in the river combined with the failed west sluice gate meant that water was not able to bypass the weir meaning that fish passage was completely blocked. An urgent meeting took place with Dublin City Council and repairs were carried out in September.



Table 07: Counter data for the R. Liffey

Fish Species	Number
Spring salmon	84
Grilse	33
Late Summer Salmon	22
Sea Trout	97

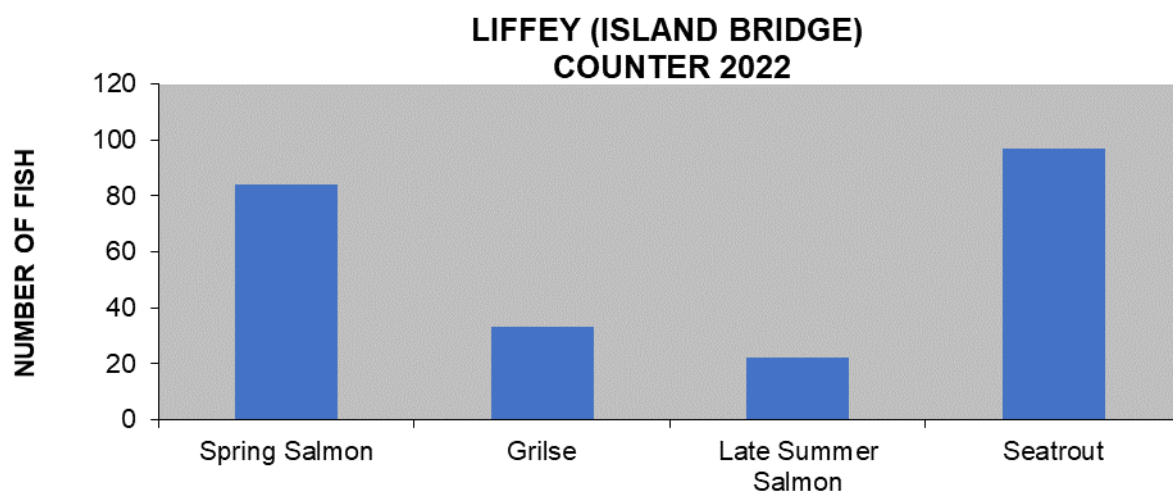
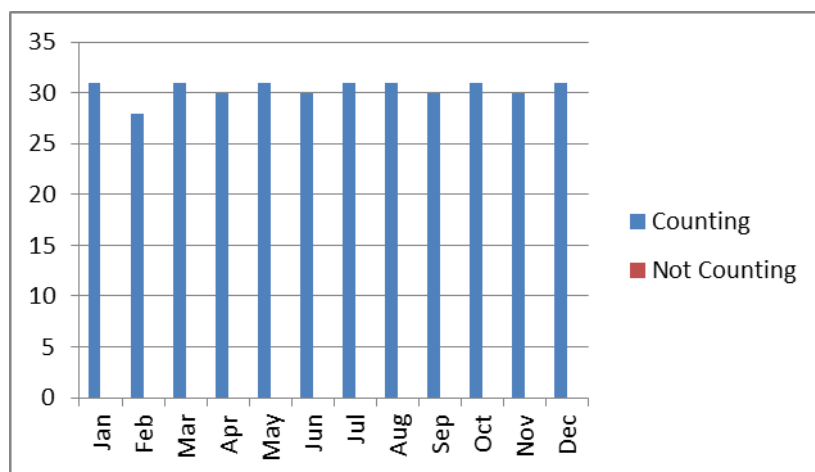


Table 08: Counter Operations

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



5 Slaney Counter



Counter Type: Logie

Operating: Jan – Dec 2022

Performance: Good

Verified: Yes

5.1 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.

5.2 Operation

The counter is both efficient and accurate in terms of the fish that 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 counter house has limited access to the site and data, as the counter hut is on the grounds of a processing yard which was closed. The automatic counter continued to record, and the data was retrieved when the lockdown was lifted. The future of this counter is under review.



Table 09: Counter data for the R. Slaney

Fish Species	Number
Spring salmon	179
Grilse	226
Late Summer Salmon	30
Sea Trout	700

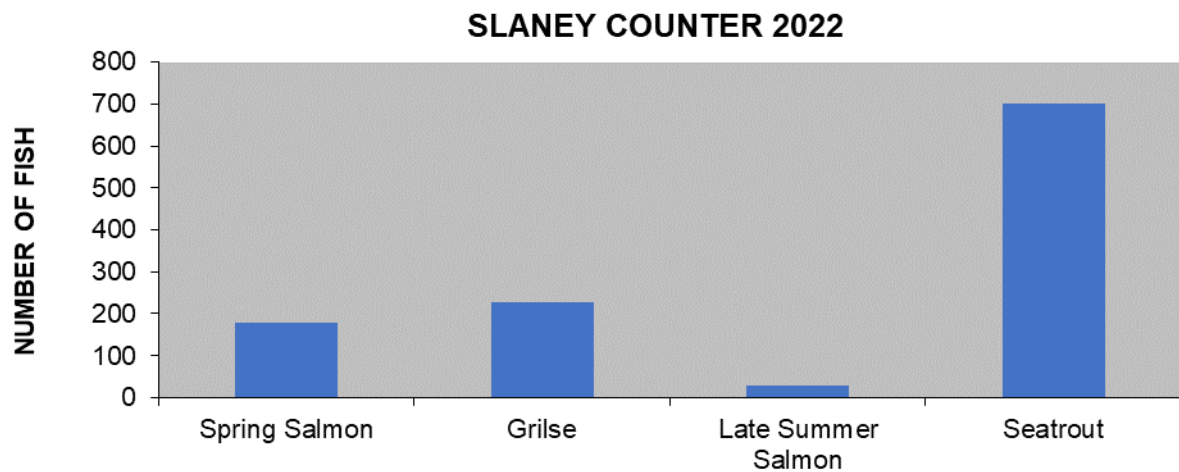
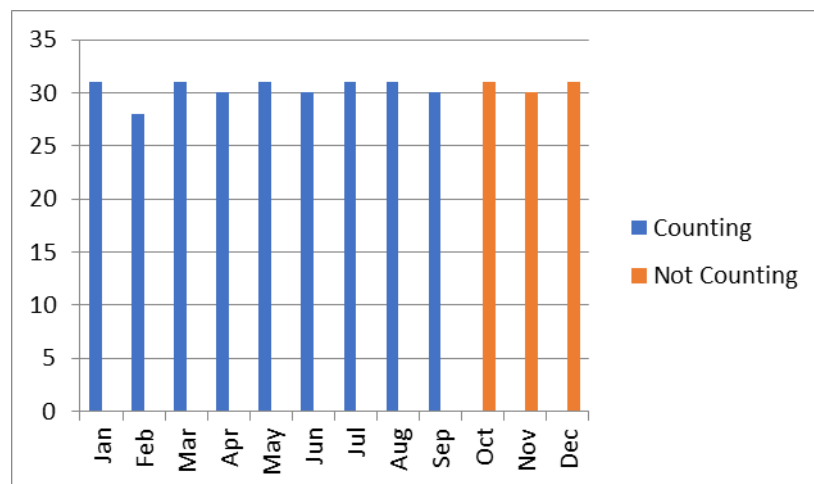


Table 10: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
273	92



6 Kerry Blackwater



Type : Logie

Operating: Jan – Dec 2022

Performance: Good

Verified: Yes

6.1 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.

6.2 Operation

The counter operated well during the year. The site has had a substantial upgrade to the cameras and recording equipment. The site now has high-definition cameras on each weir. The counter has been reconfigured and tested several times during the year to ensure it continues to count as accurately as possible. This site was downloaded regularly, and data verified and uploaded. This is a site which would benefit from remote access. The site doesn't count many sea trout as it has been configured to count salmon as accurately as possible.



Table 11: Counter data for the Kerry Blackwater River

Fish Species	Number
Spring salmon	248
Grilse	243
Late Summer Salmon	47
Sea Trout	97

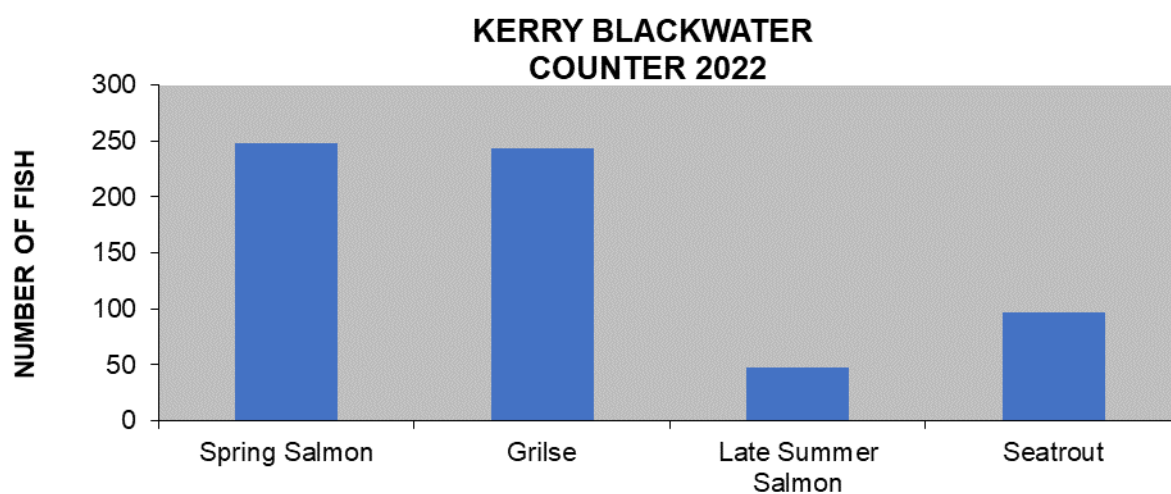
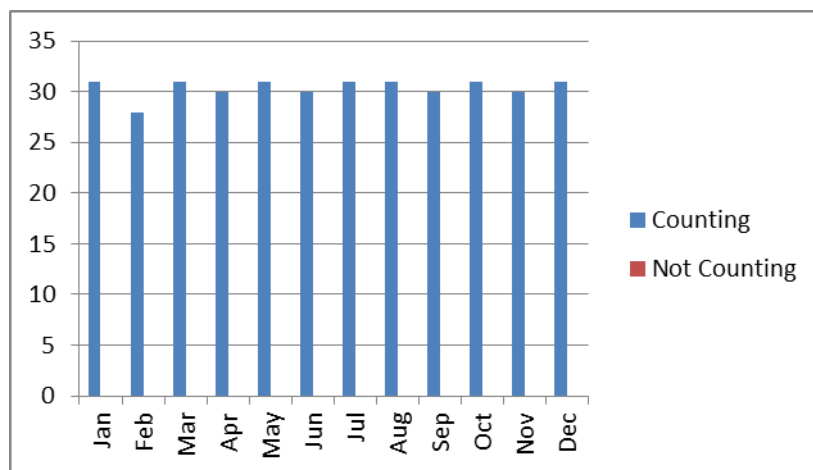


Table 12: Counter Operations

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



7 Waterville



Type : Logie

Operating: Jan –Dec 2022

Performance: v Good

Verified: Yes

7.1 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.

7.2 Operation

The fish counter hardware is in Waterville House which was closed for a significant period in the first quarter the year due to Covid-19. However, prior to the lockdown, new recording hardware and remote access had been set up on the site. This allowed operators to access the counter and cameras daily. The experiment to establish remote access to the site has proved very successful. The counter worked well in 2022. The counter has been switched off in late December due to renovations in Waterville house.



Table 13: Counter data for Waterville

Fish Species	Number
Spring salmon	382
Grilse	260
Late Summer Salmon	195
Sea Trout	1280

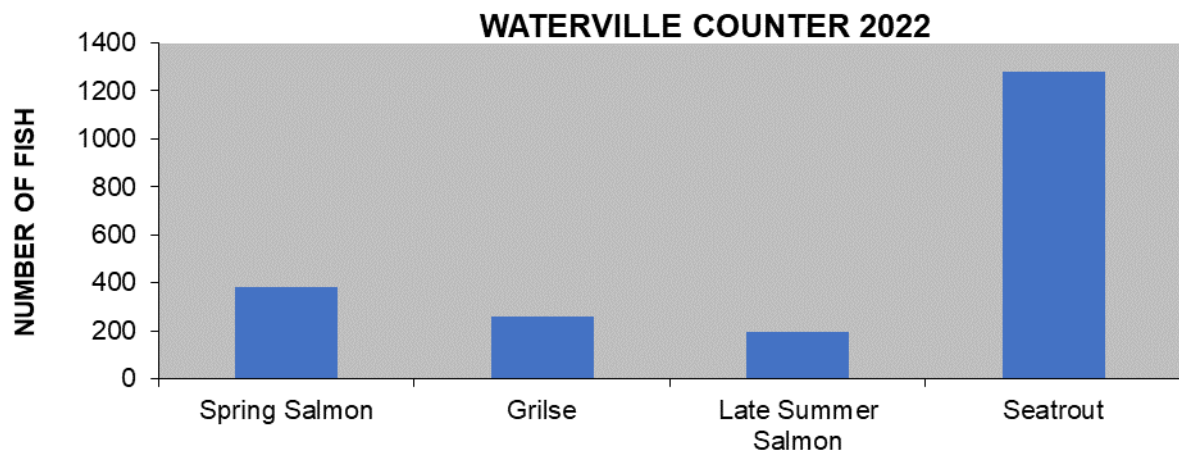
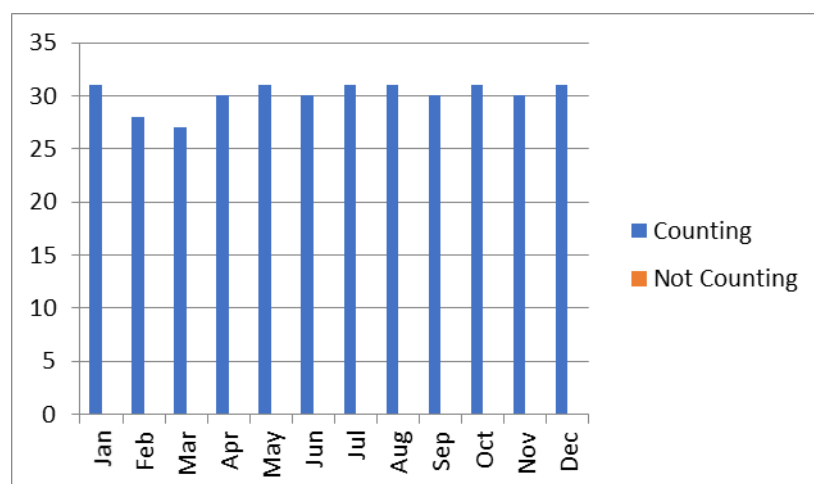


Table 14: Counter Operations

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



8 River Maine



Type : Logie

Operating: Jan–Dec 2022

Performance: Good

Verified: No

8.1 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 “Marshall’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.

8.2 Operation

The counter has operated well for the 2022 season because of the completion of upgrades to the connections. The site has had extensive upgrades to the recording equipment and installation of high-definition cameras. The counter was checked and reconfigured several 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. Additional repairs to two electrodes on the third and fourth crumps are now required, and these will be carried out in low water conditions.



Table 15: Counter data for the Maine River

Fish Species	Number
Spring salmon	242
Grilse	703
Late Summer Salmon	429
Sea Trout	32

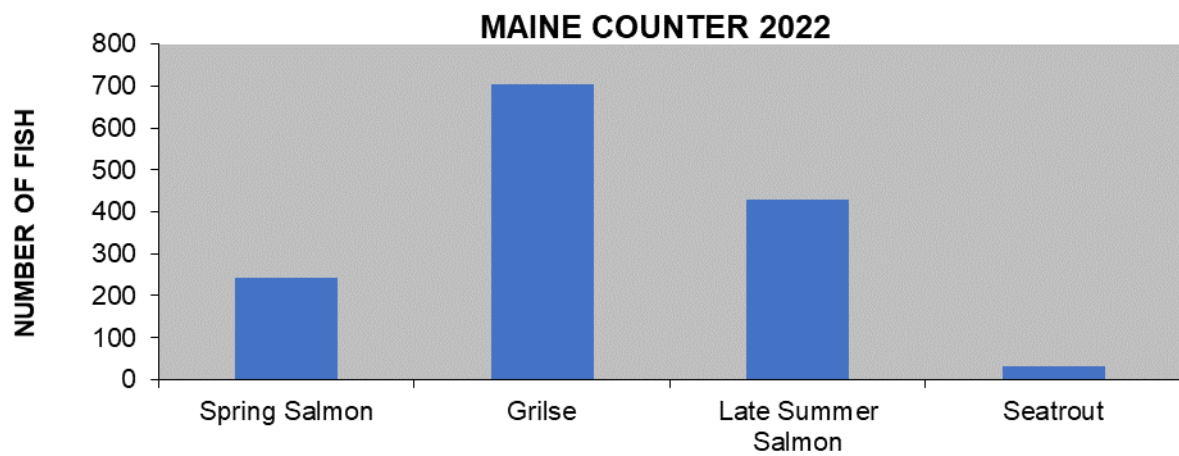
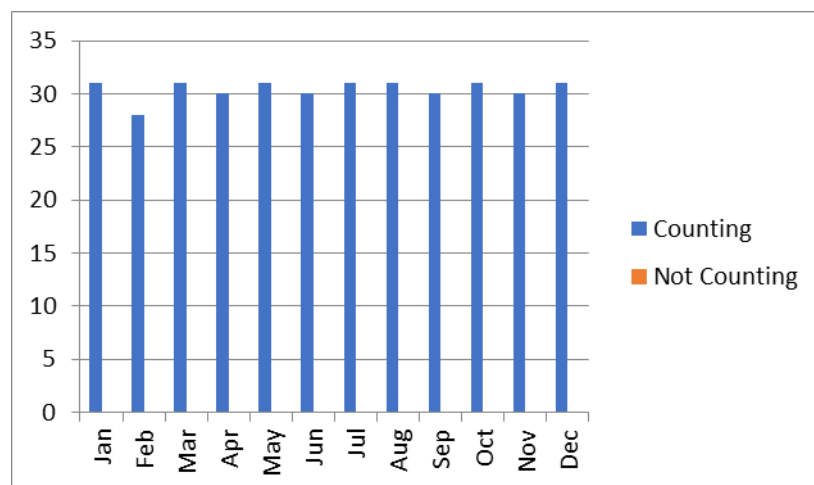


Table 16: Counter Operations

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



9 Feale River



Counter type: Logie

Operating: Jan-Dec 2022

Performance: V. Good

Verified: Yes

9.1 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.

9.2 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 consistently accurate data. The counter site has been upgraded with new recording equipment and cameras. The equipment was damaged coming into winter from an electrical event and the new cameras and UPS will have to be replaced. The counter was replaced with a spare from stock while repairs are carried out to the CPU board.



Table 17: Counter data for the Feale River

Fish Species	Number
Spring salmon	3307
Grilse	3117
Late Summer Salmon	142
Sea Trout	212

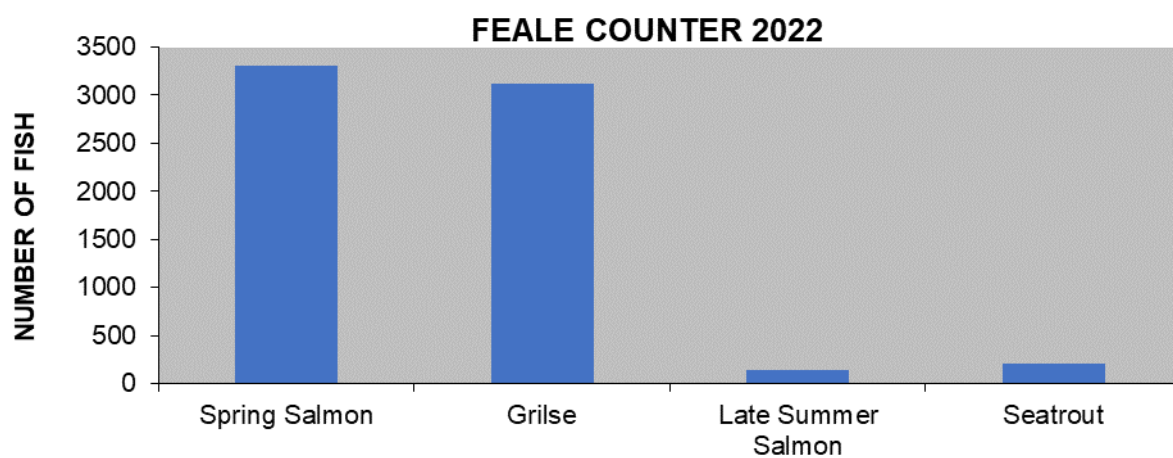
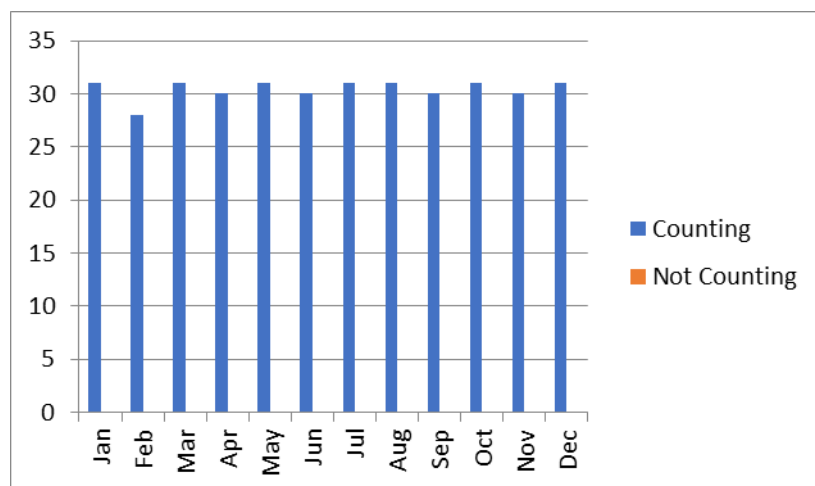


Table 18: Counter Operations

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



10 Maigue River



Counter type: Logie

Operation Period: Jan – Dec 2022

Performance: Good

Verified: No

10.1 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 pastureland and forms part of the renowned 'Golden Vale' agricultural area.

10.2 Operation

The Maigue counter is a ten-channel counter. The counter was completed in 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 2022 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. Counting of fish in the winter floods is very limited. A new camera system was installed in 2022.



Table 19: Counter data for the Maigue River

Fish Species	Number
Spring salmon	179
Grilse	459
Late Summer Salmon	230
Sea Trout	0

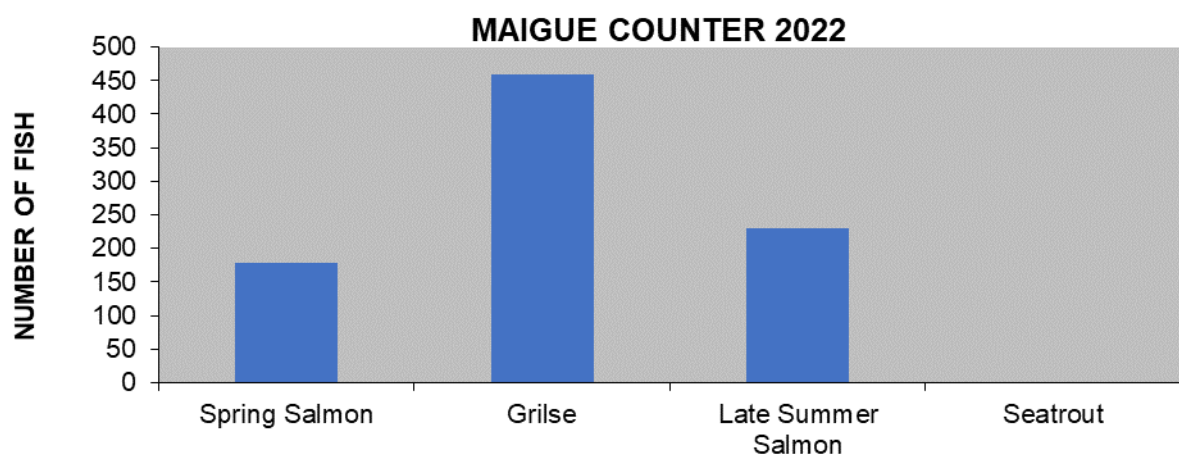
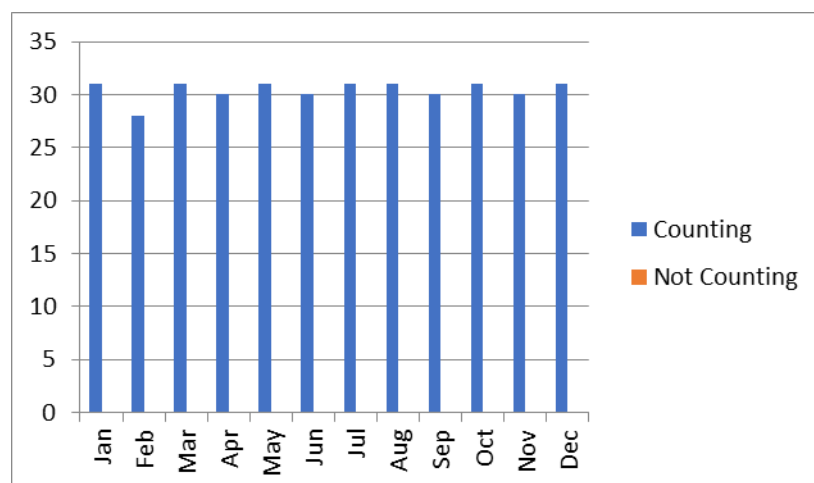


Table 20: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
346	19



11 Mulkear



Counter type: Logie

Operating: Jan-Dec 2022

Performance: Good

Verified: Yes

11.1 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.

11.2 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. The counter site has been significantly upgraded and now has high-definition cameras on all weirs and new recording hardware. This site was upgraded and vandalised, but these cameras have been replaced and greater security installed. The site has provided verified counts for 2022.



Table 21: Counter data for the Mulkear River

Fish Species	Number
Spring salmon	341
Grilse	1625
Late Summer Salmon	1149
Sea Trout	0

MULKEAR COUNTER 2022

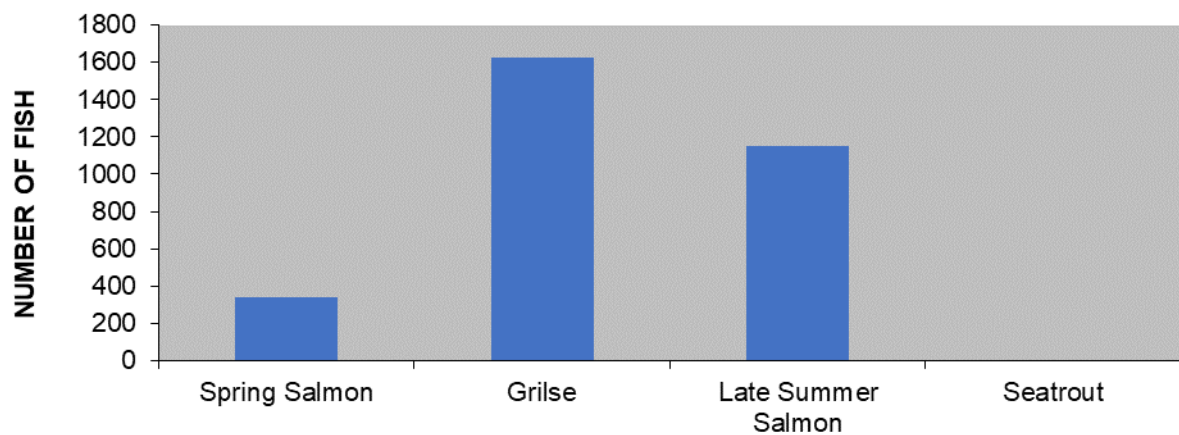
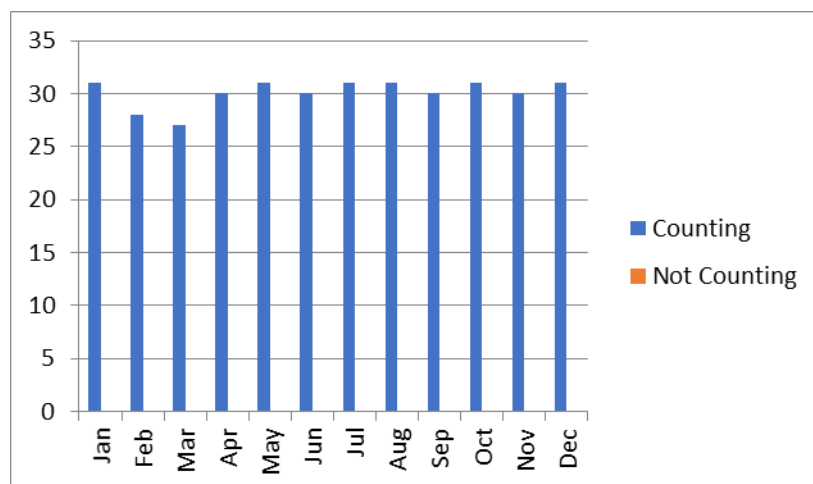


Table 22: Counter Operations

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



12 Fergus River



Counter type: Logie

Operating: Jan – Dec 2022

Performance: Good

Verified: Yes

12.1 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.

12.2 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. The civic building is now occupied and access to the building is easy, the counter was checked regularly. The underwater cameras on site need replacing in 2023.



Table 23: Counter data for the Fergus River

Fish Species	Number
Spring salmon	259
Grilse	101
Late Summer Salmon	110
Sea Trout	0

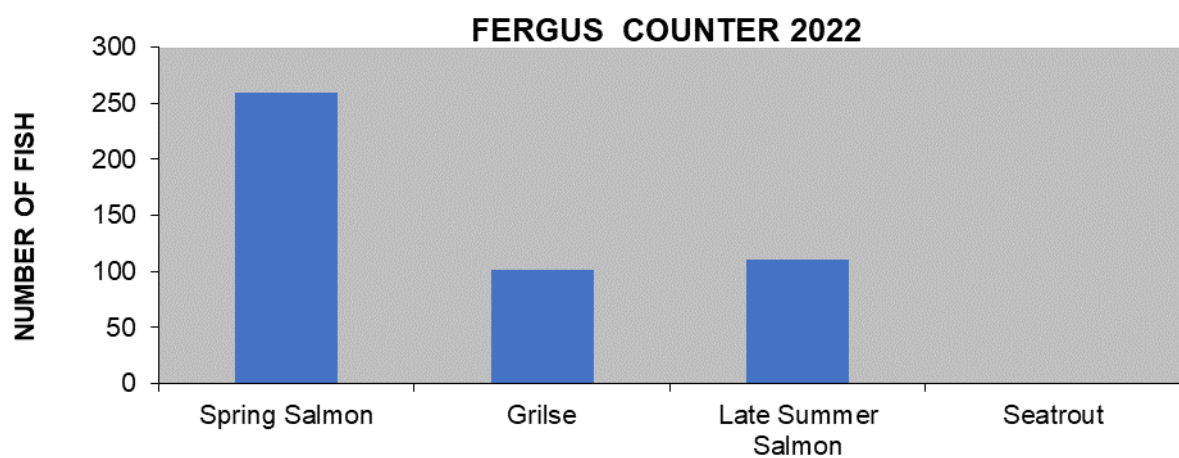


Table 24: Counter Operations

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

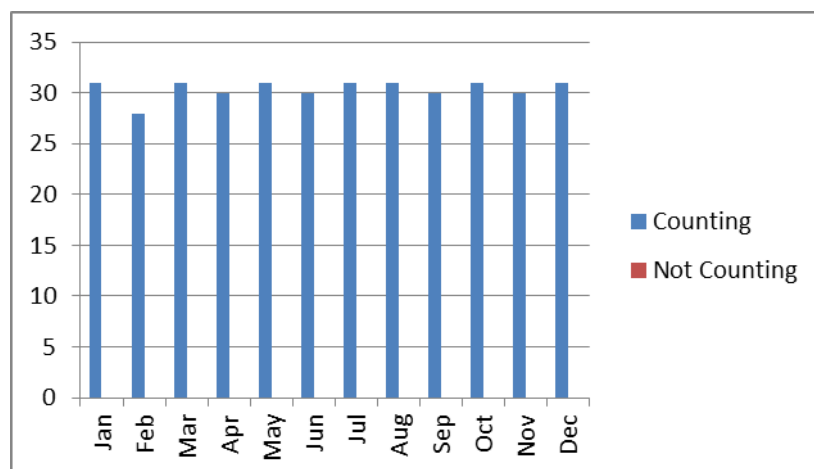




Table 25: Counter data for the Inagh (Ennistymon) River

Fish Species	Number
Spring salmon	48
Grilse	0
Late Summer Salmon	03
Sea Trout	21

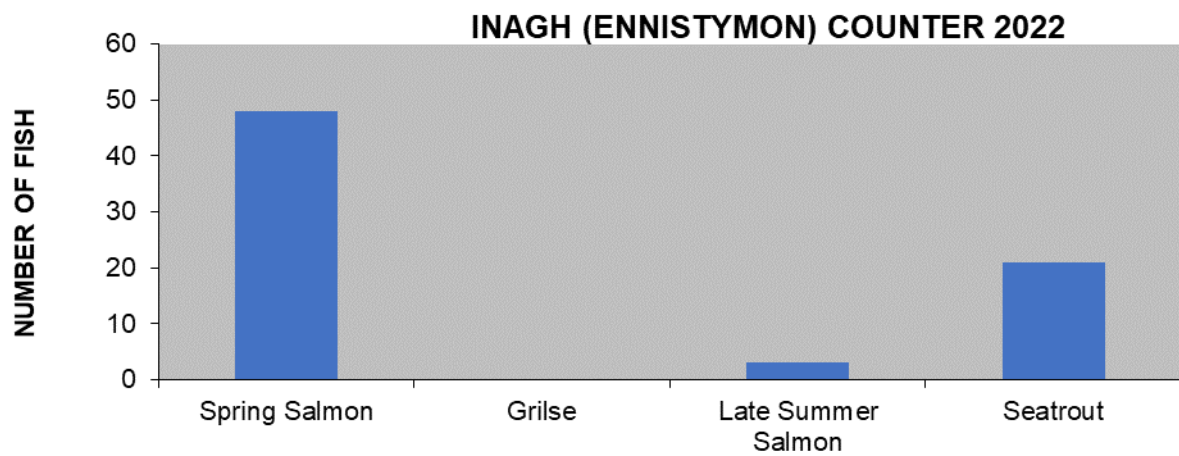
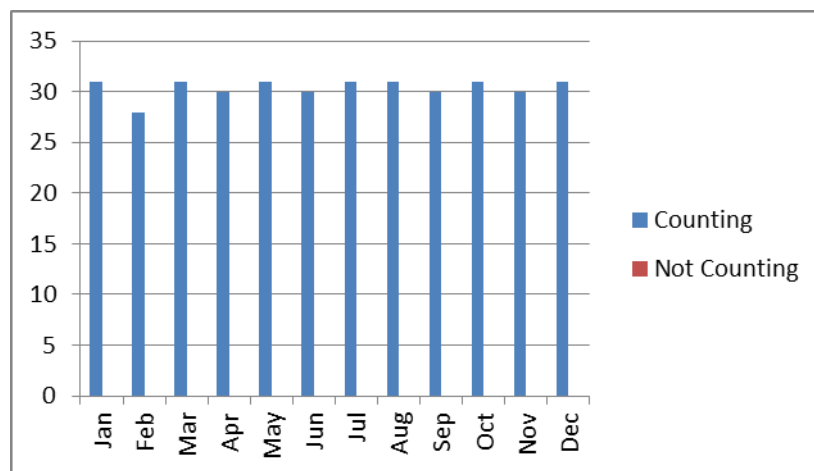


Table 26: Counter Operations

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



14 Dunkellin River



Counter type: Logie

Operating: May - Dec 2022

Performance: Good

Verified: Yes

14.1 River site and description

The Dunkellin counter was installed early in 2010 and was commissioned in 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.

14.2 Operation

The new counter was operational in May 2022. The old counting weir is still in situ but the recording equipment and counter have been moved to the new facility. The new site is located further up the catchment. The counter hut and weir are completed and operational. Inland Fisheries Ireland operates the counter on the dedicated infrastructure provided by the OPW.



Table 27: Counter data for the Dunkellin River

Fish Species	Number
Spring salmon	0
Grilse	53
Late Summer Salmon	37
Sea Trout	107

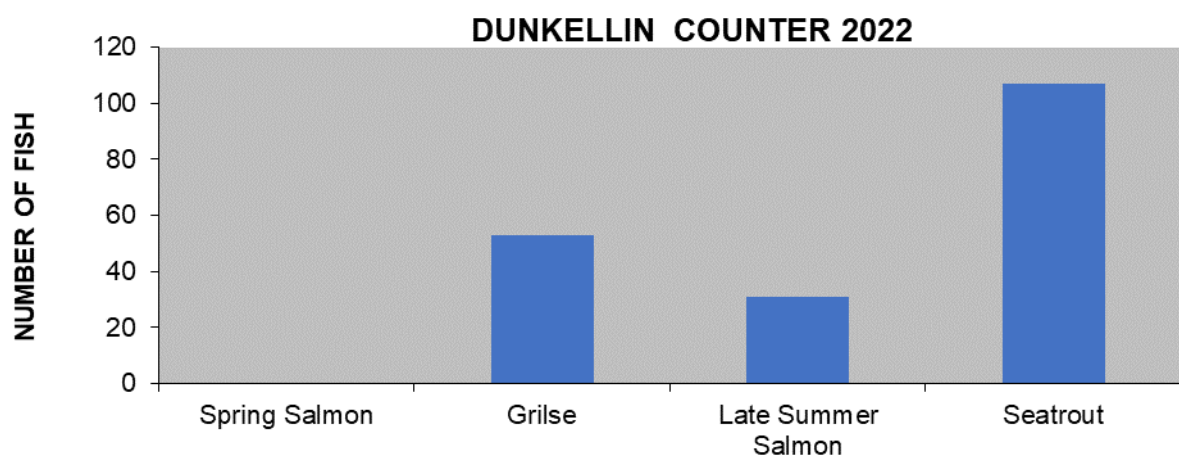
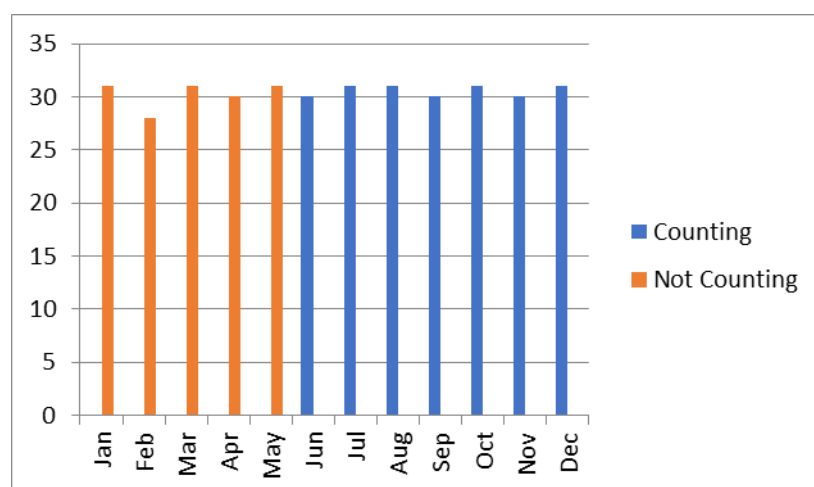


Table 28: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
214	151



15 Corrib Counter



Type : Logie

Operating: Jan – Dec 2022

Performance: V.Good

Verified: Yes

15.1 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.

15.2 Counter operation

The counter operated well during the 2022 season. The counter data has been verified and is accurate. The counter worked well with no interruption. 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 29: Counter data for the Corrib River

Fish Species	Number
Spring salmon	290
Grilse	5368
Late Summer Salmon	22
Sea Trout	0

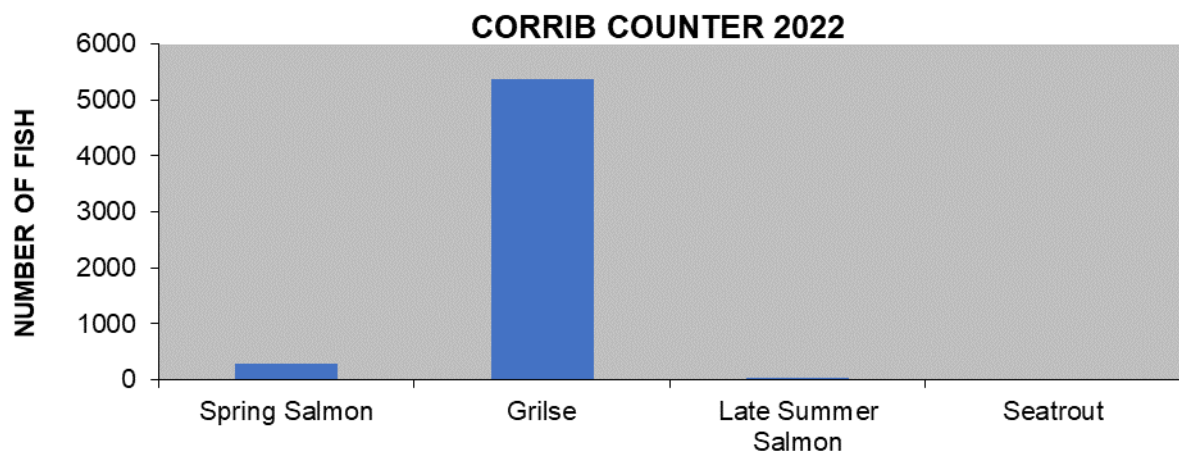
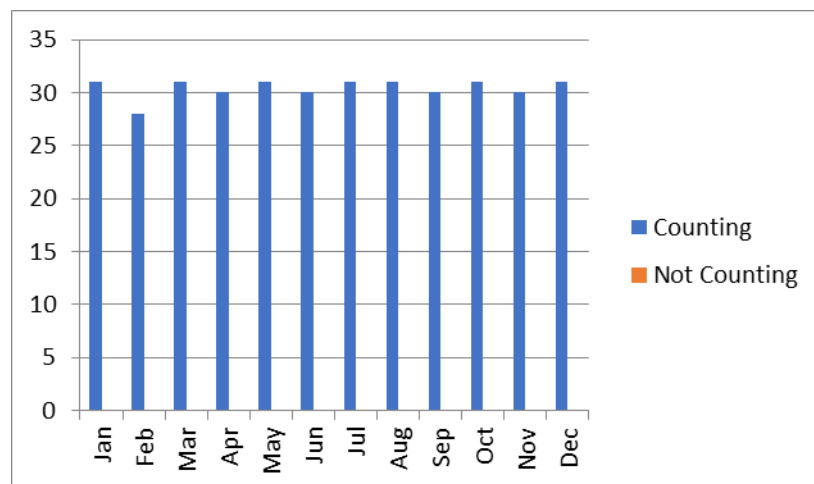


Table 30: Counter Operations

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



16 Owenboliska River



Type : Logie

Operating: Jan – Dec 2022

Performance: V.Good

Verified: Yes

16.1 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.

16.2 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. The sea trout, counter data is more accurate in years where water levels are low and limited dumping of water from the impounding weir occurs. The site is maintained by Galway district staff and several visits were carried out to reconfigure, download and verify the counter data in 2022.



Table 31: Counter data for the Owenboliska River

Fish Species	Number
Spring salmon	144
Grilse	124
Late Summer Salmon	29
Sea Trout	240

OWENBOLISKA COUNTER 2022

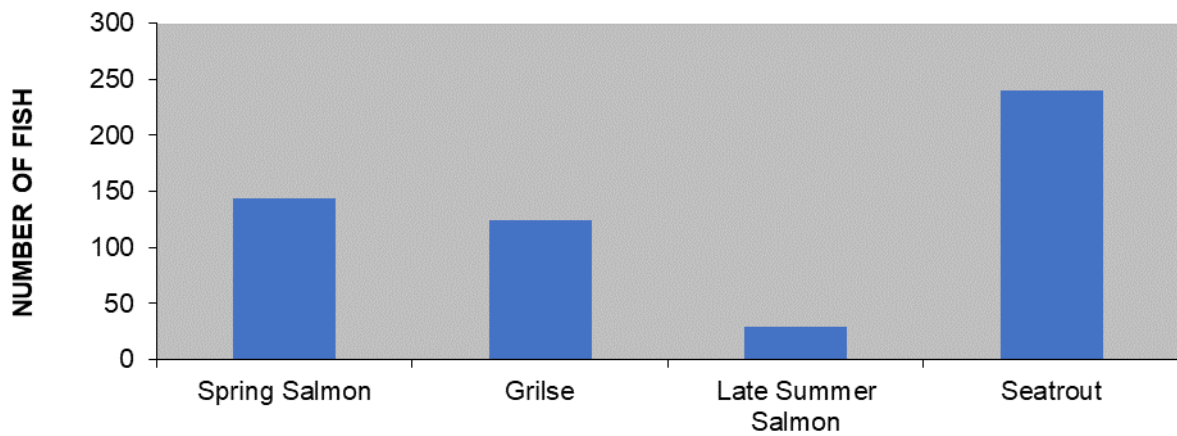
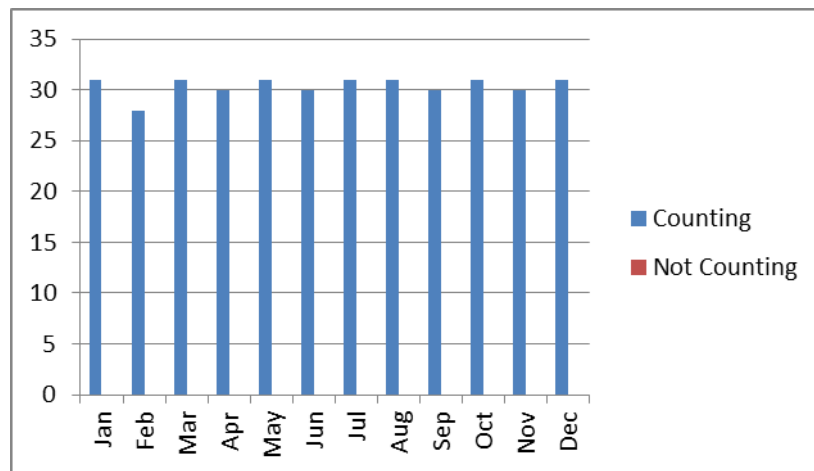


Table 32: Counter Operations

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



17 Casla River



Type : Logie

Operating: Jan – Dec 2022

Performance: V.Good

Verified: Yes

17.1 River site and description

The Casla River is privately owned and is the main river of the Costello and Fermoy 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.

17.2 Operation

The counter operated very well throughout 2022. 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 2023.



Table 33: Counter data for the Casla River

Fish Species	Number
Spring salmon	71
Grilse	775
Late Summer Salmon	95
Sea Trout	1252

CASLA COUNTER 2022

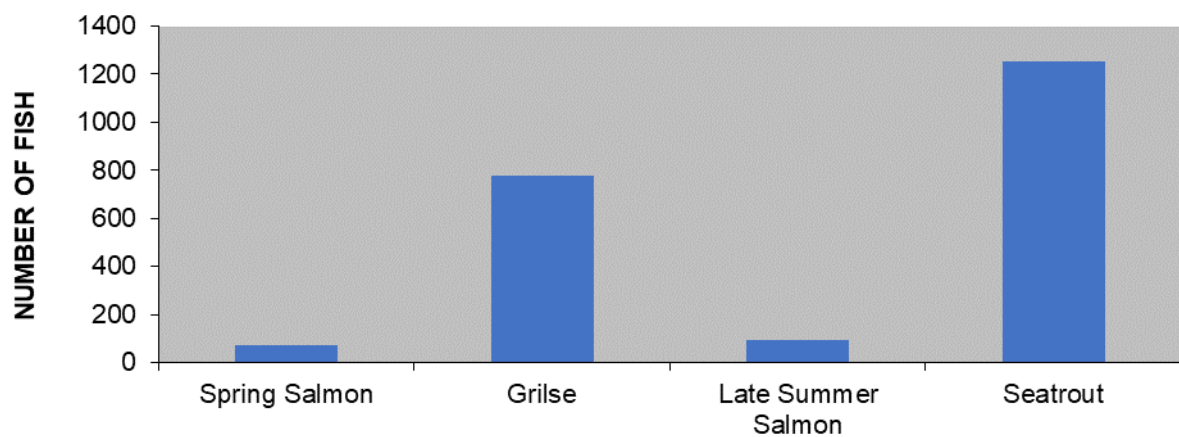
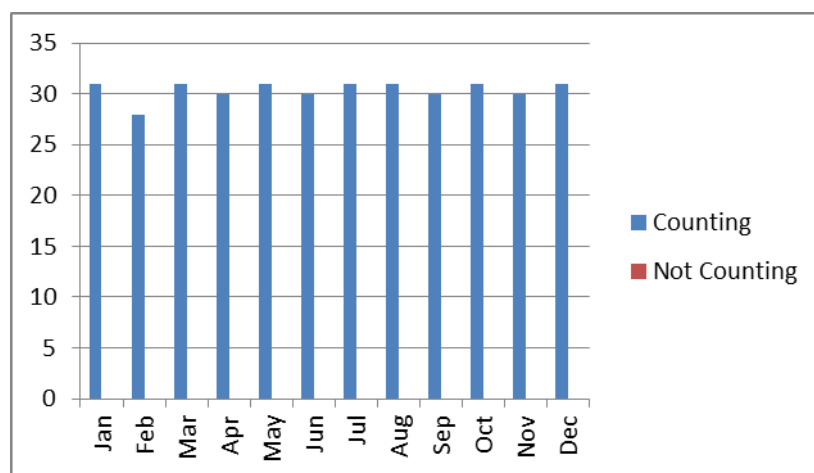


Table 34: Counter Operations

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



18 Owengowla River



Type : Logie

Operating: Jan - Dec 2022

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 counter on this site operates on a two-channel weir. The site provides a total count for salmon and sea trout for the river. The site has provided accurate counts for 2022 with no breakdowns or loss of data. Camera data for the river suggest a small run of very large salmon run this system annually however the run of salmon is significantly higher than expected for this small sea trout system.



Table 35: Counter data for the Owengowla River

Fish Species	Number
Spring salmon	77
Grilse	159
Late Summer Salmon	47
Sea Trout	202

OWENGOWLA COUNTER 2022

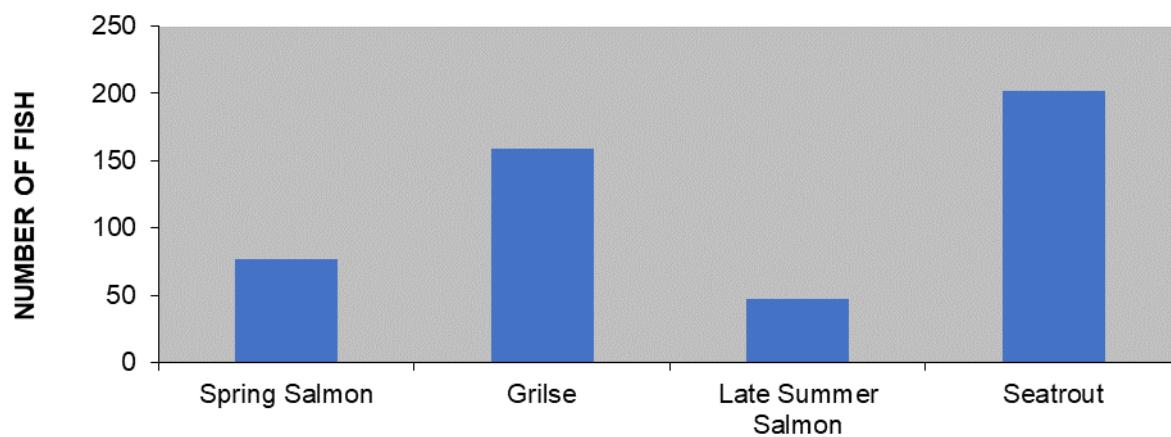
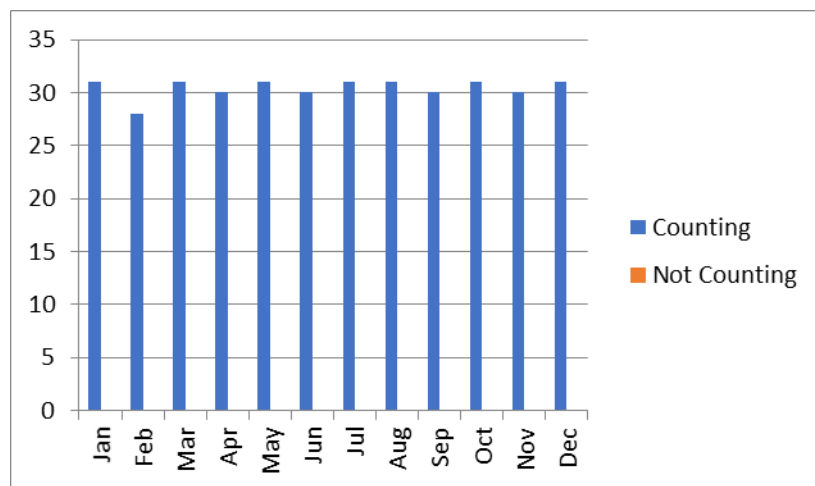


Table 36: Counter Operations

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



19 Inagh River



Type : Logie

Operating: Jan – Dec 2022

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 2022. The low water all summer allowed for accurate verification of the counts for salmon. The counter counts salmon accurately but sea trout can use an alternative channel which is not counted. The hardware on this site has been upgraded to ensure verification was possible on the full data set.



Table 37: Counter data for the Inagh River

Fish Species	Number
Spring salmon	19
Grilse	196
Late Summer Salmon	36
Sea Trout	18

L INAGH COUNTER 2022

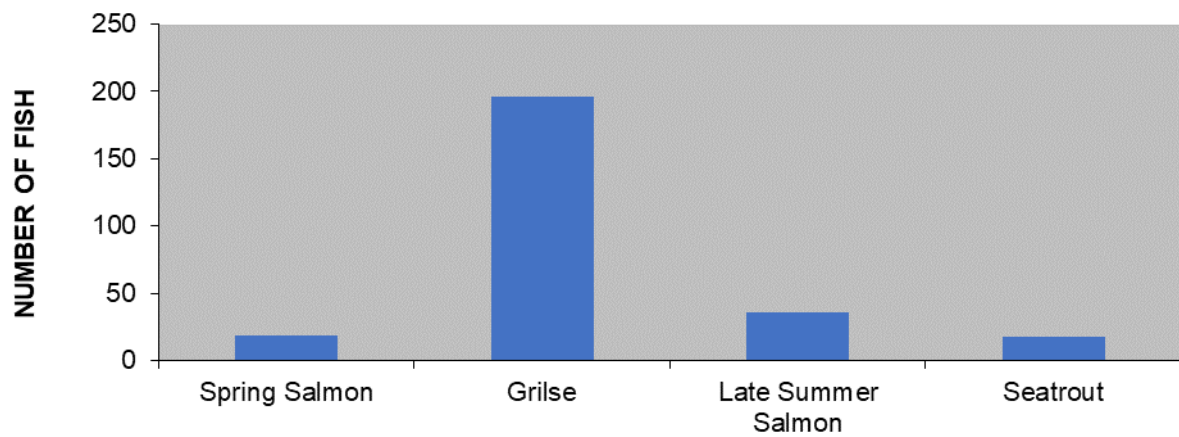
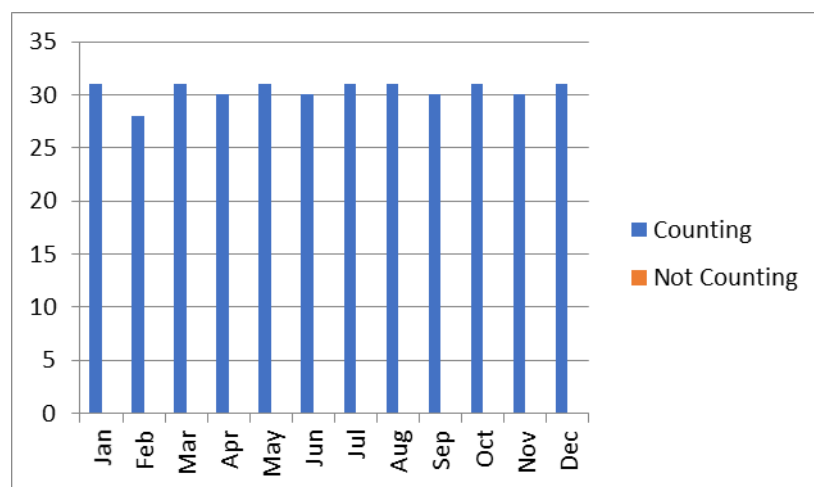


Table 38: Counter Operations

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



20 Owenglin (Clifden River) River



Counter type: Vaki

Operating: Jan – Dec 2022

Performance: V. Good

Verified: Yes

20.1 River site and description

The site of the counter in the Owenglin River is 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 fishing rights include numerous small lakes.

20.2 Operation

The counter has operated well over the course of the year. The Vaki counter operated without any issues. The counts are very accurate, and the river is open with a small surplus. Significant repairs have been carried out to the fish pass in 2022. Data collected over the last three years demonstrates the positive effects of catch and release on the stock in the river.



Table 39: Counter data for the Owenglin River

Fish Species	Number
Spring salmon	19
Grilse	609
Late Summer Salmon	119
Sea Trout	45

OWENGLIN COUNTER 2022

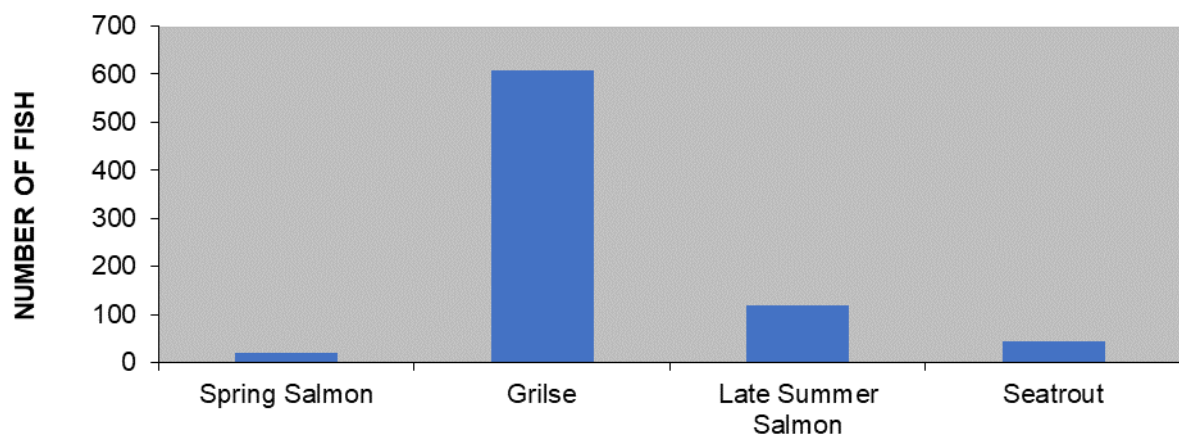
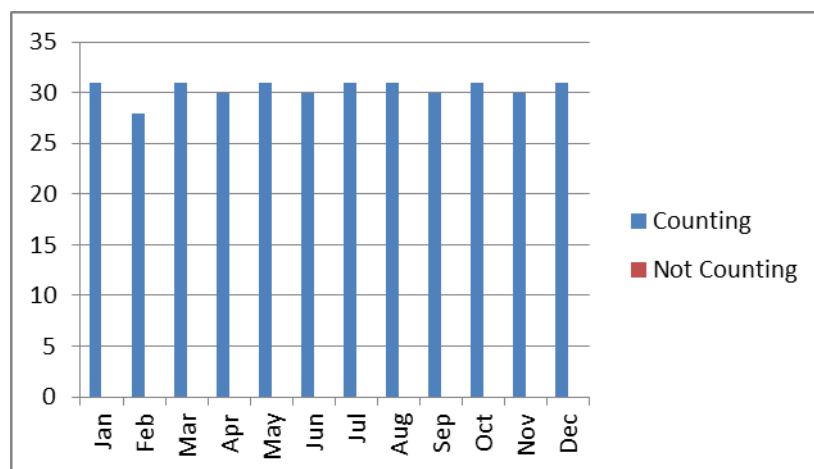


Table 40: Counter Operations

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





21 Dawros (Kylemore) River



Counter type: Logie

Operating: Jan – Dec 2022

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 and recorded most of the fish runs for the year. The counter has recorded a slight decrease in the run of salmon into the river which reflects the national trend. The run of sea trout is higher than 2021 but still below the five-year average.



Table 41: Counter data for the Dawros River

Fish Species	Number
Spring salmon	140
Grilse	773
Late Summer Salmon	153
Sea Trout	1211

DAWROS COUNTER 2022

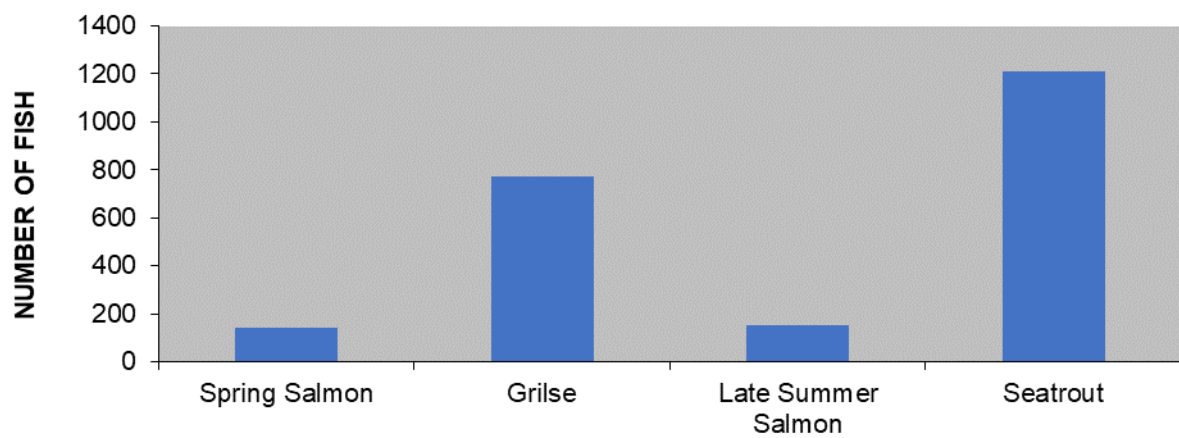
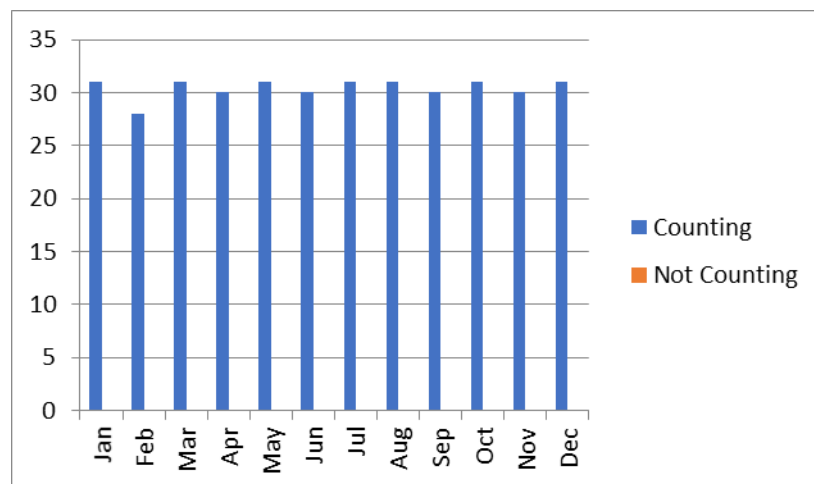


Table 42: Counter Operations

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



22 Culfin River



Counter Type: Logie

Operating: Jan – Dec 2022

Performance: V. Good

Verified: Yes

22.1 River site and description

The Culfin counter is 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 verified 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 remain relatively constant each year. IFI will upgrade the hardware on this site when required. The current system is very suitable for this site and works well.



Table 43: Counter data for the Culfin River

Fish Species	Number
Spring salmon	06
Grilse	409
Late Summer Salmon	166
Sea Trout	174

CULFIN COUNTER 2022

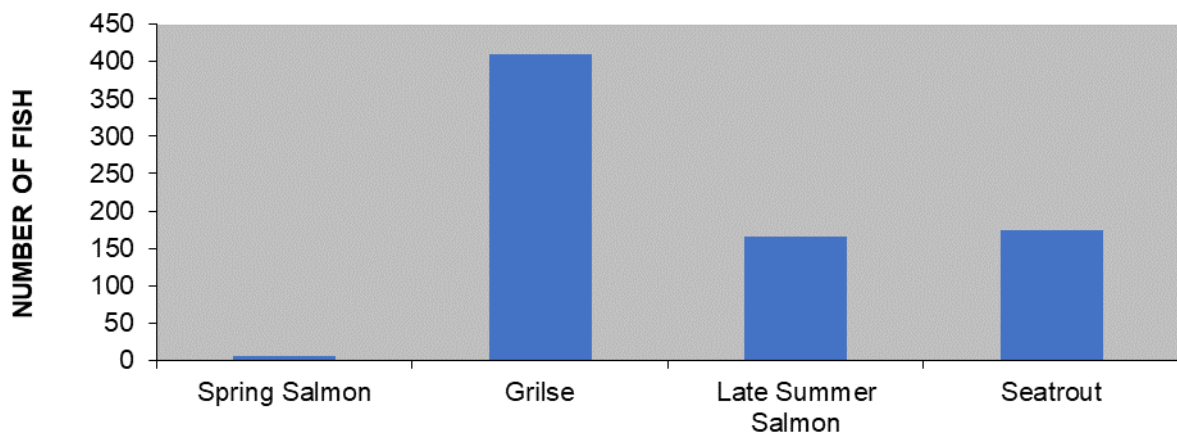
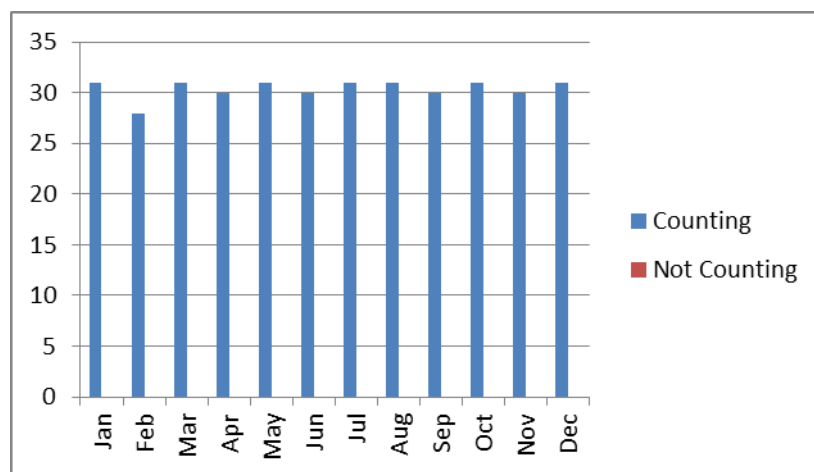


Table 44: Counter Operations

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



23 Erriff River



Counter type: Vaki

Operating: Jan- Dec 2022

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 principal 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 operated consistently throughout the year. The counter is operated in conjunction with several other recording devices which allows us to establish the accuracy of this type of counter. The counter is very accurate. The run of salmon was a below 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 45: Counter data for the Erriff River

Fish Species	Number
Spring salmon	30
Grilse	907
Late Summer Salmon	344
Sea Trout	2145

ERRIFF COUNTER 2022

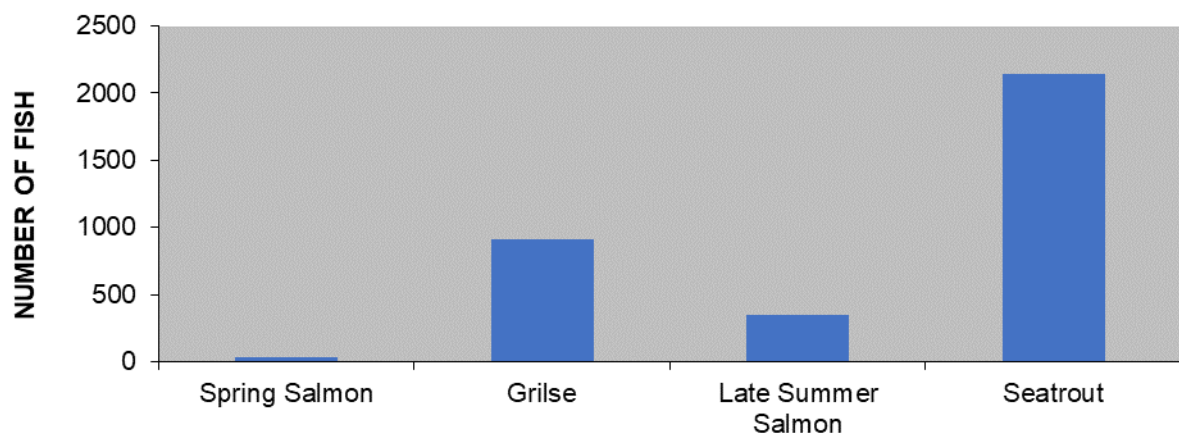
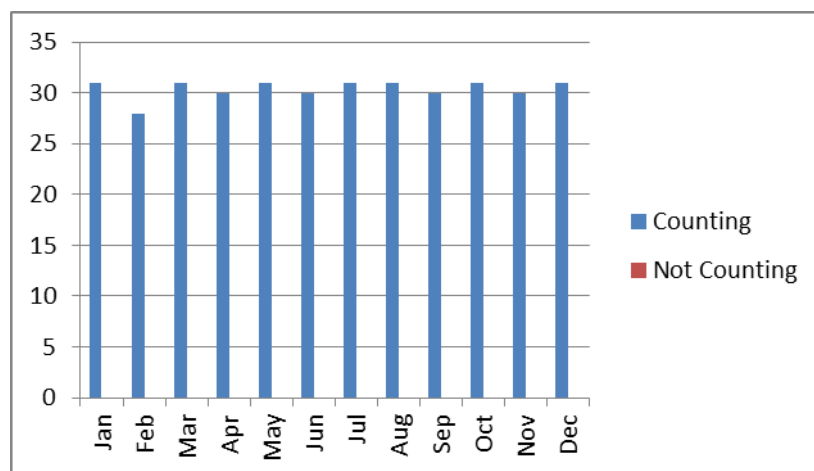


Table 46: Counter Operations

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



24 Bunowen River



Counter type: Logie

Operating: Jan-Dec 2022

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 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. It also gives the impression of an early run of spring salmon which is not the case.



Table 47: Counter data for the Bunowen River

Fish Species	Number
Spring salmon	74
Grilse	321
Late Summer Salmon	223
Sea Trout	196

BUNOWEN COUNTER 2022

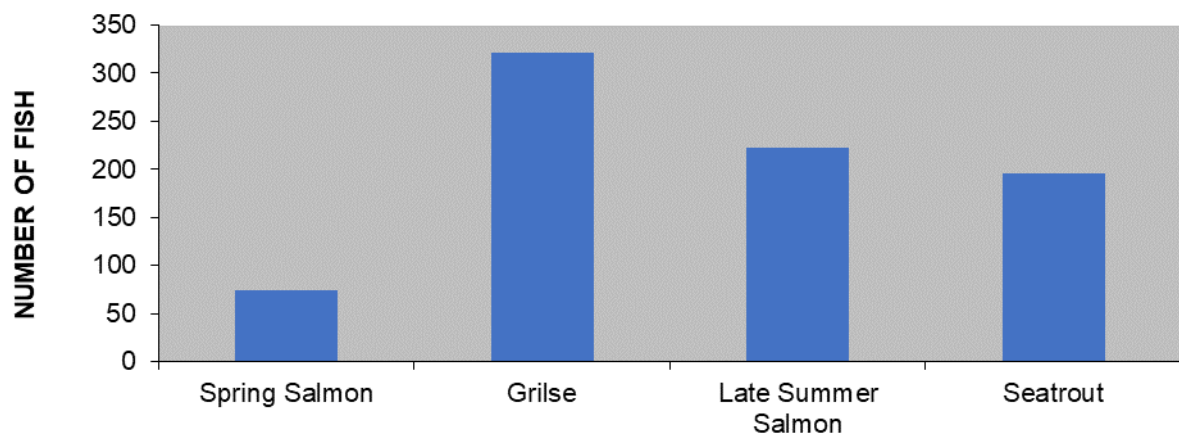
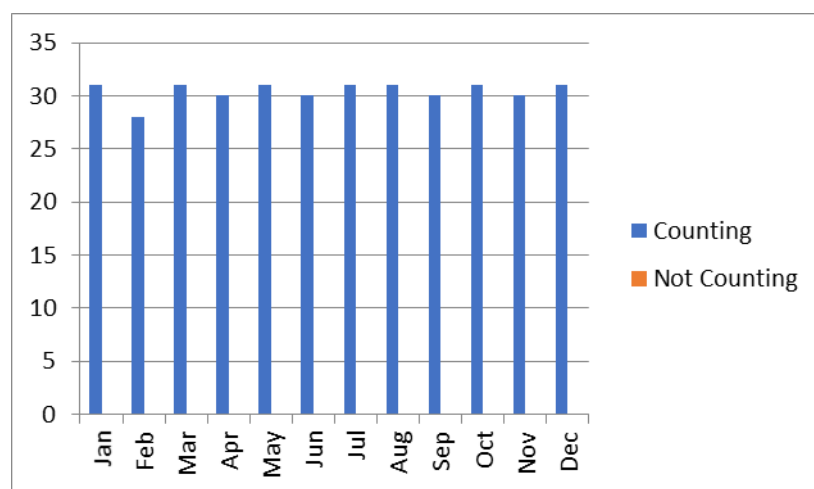


Table 48: Counter Operations

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



25 River Moy Counters



Counter type: Logie/Vaki

Operating: Jan- Dec 2022

Performance: V Good

Verified: Yes

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 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.



Table 49: Counter data for the Moy River

Fish Species	Number
Spring salmon	1134
Grilse	7868
Late Summer Salmon	2452
Sea Trout	0

MOY COUNTER 2022

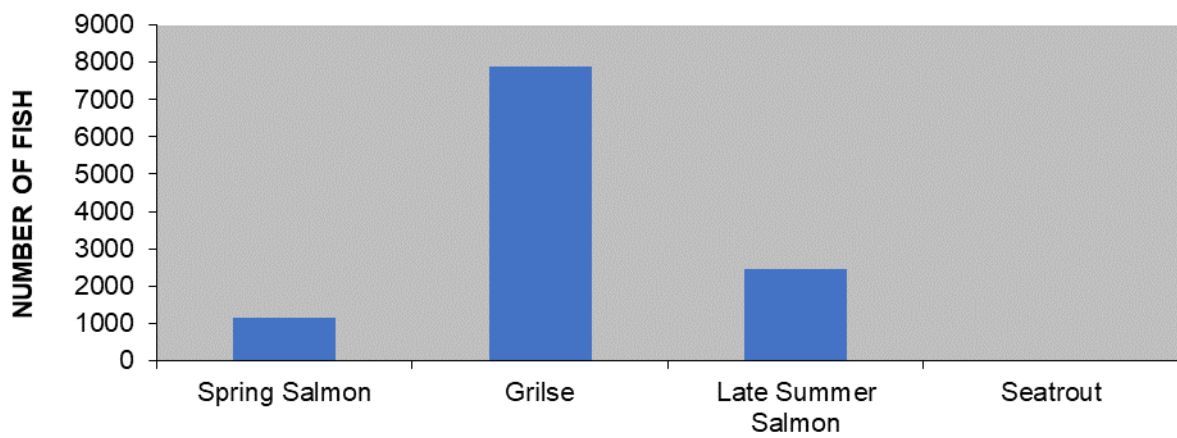
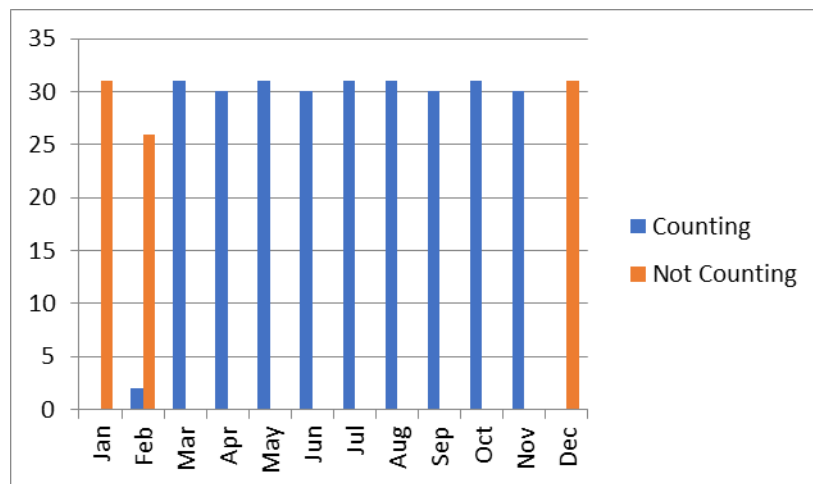


Table 50: Counter Operations

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



26 Eske River



Counter type: Logie

Operating: Jan- Dec 2022

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. The counter was downloaded, and all data was verified on a weekly basis giving accurate counts for the river. New camera mounts were installed. The site was well maintained and downloaded regularly with no loss of data.



Table 51: Counter data for the Eske River

Fish Species	Number
Spring salmon	108
Grilse	363
Late Summer Salmon	155
Sea Trout	167

ESKE COUNTER 2022

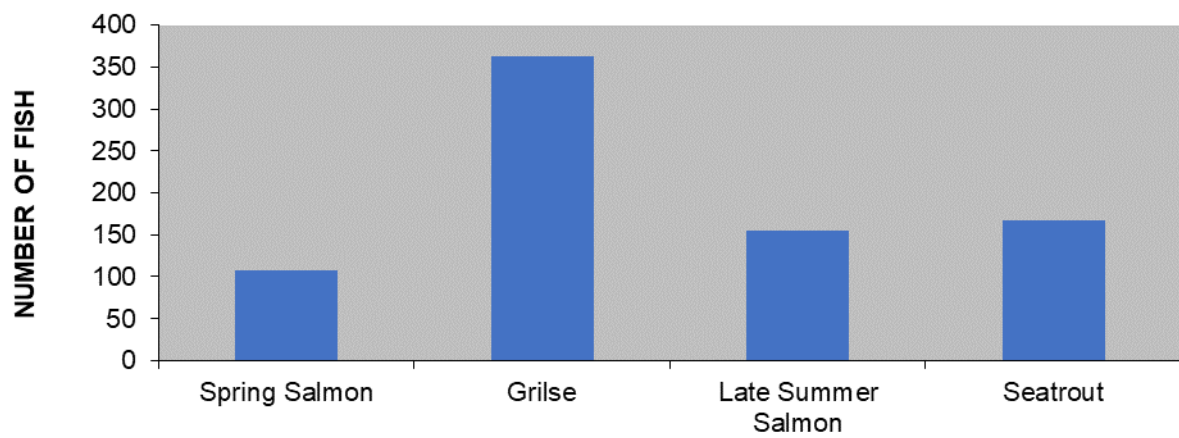
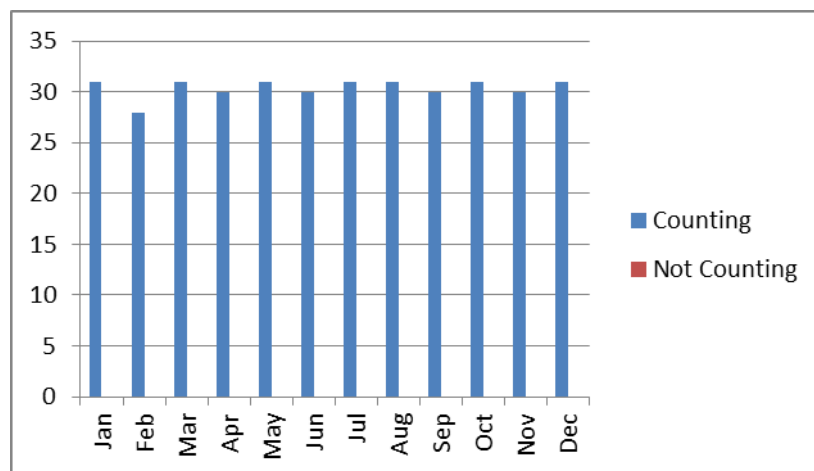


Table 52: Counter Operations

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



27 Eany River



Counter type: Logie

Operating: Jan- Dec 2022

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 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 seatrout.

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 the data collected by the counter has been verified by CCTV cameras. New cameras and cables have been installed on the site in conjunction with new recording hardware.



Table 53: Counter data for the Eany River

Fish Species	Number
Spring salmon	106
Grilse	370
Late Summer Salmon	68
Sea Trout	42

EANY COUNTER 2022

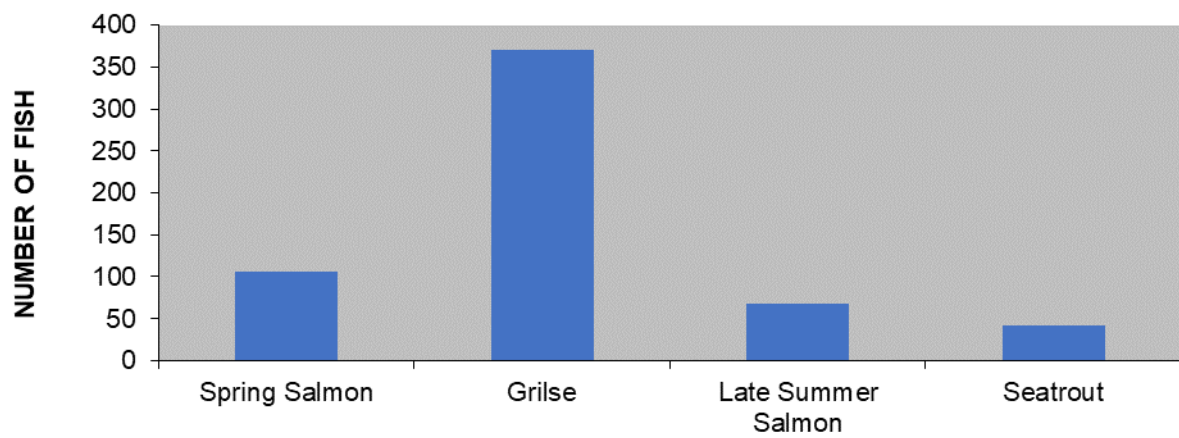
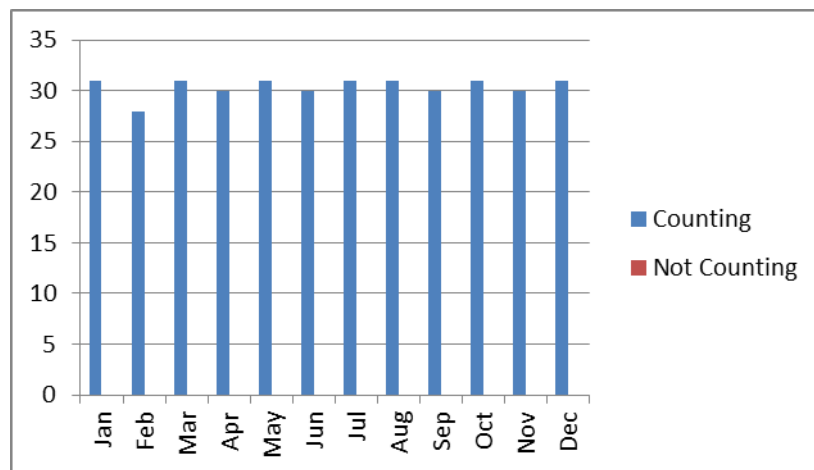


Table 54: Counter Operations

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



28 Lackagh River



Counter type: Logie

Operating: Jan–Dec 2022

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 Northwest. 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 is operated by IFI staff. The counter is visited regularly, and the data verified. All fish movements were verified on the site. This counter has provided accurate data for the river for 2022. Data recorded would suggest a poor run of fish for the river this year.



Table 55: Counter data for the Lackagh River

Fish Species	Number
Spring salmon	26
Grilse	89
Late Summer Salmon	12
Sea Trout	349

LACKAGH COUNTER 2022

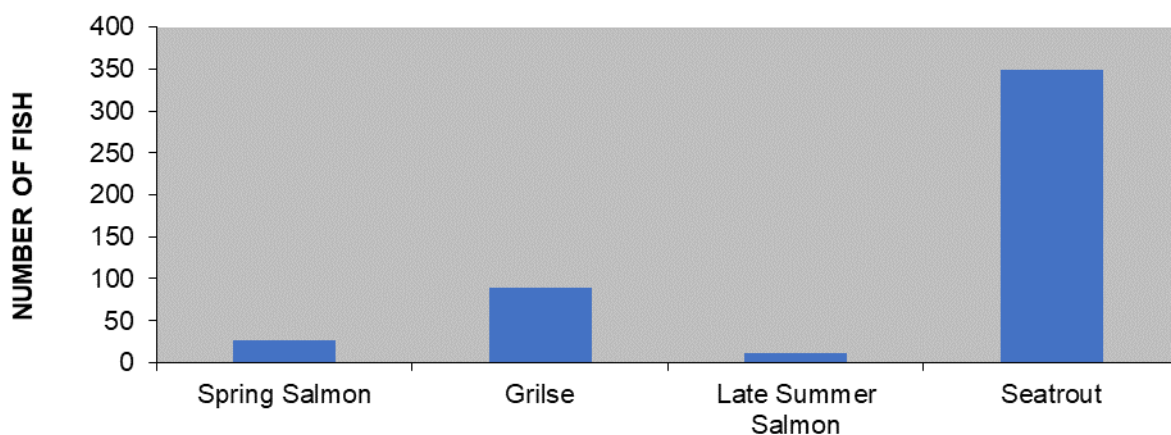
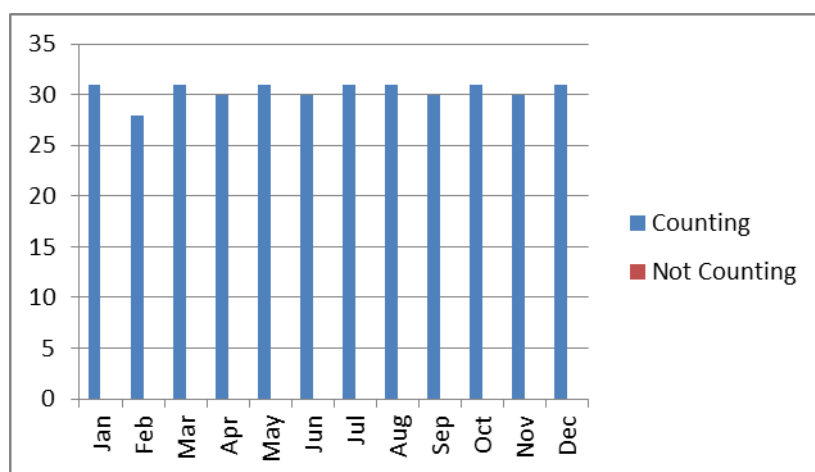


Table 56: Counter Operations

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





ESB Counter Network

In 2022 ESB and Inland fisheries Ireland entered a three-year memorandum of understanding to rejuvenate the fish counters which was being operated by the ESB.

The counters are located on the river Liffey, Erne, Shannon, Clady, and the Lee, on fish passes at ESB operated hydro generating stations. The ESB fish counter programme involves five Vaki counters and one Logie counter.

In some cases, new Vaki Riverwatcher counters were purchased to replace older models and installed by ESB/IFI staff in 2022.

The reinstallation of the counter at Inishcarra weir on the Lee has been delayed due to required structural works to support the counting frame. A new Vaki counter has also been purchased for this site and it is hoped it will be operational in early 2023.

The counters have provided accurate verified data since their reinstallation and will provide important data for the river systems for the foreseeable future.

29 Leixlip Counter



Counter type: Logie

Operating: May 11th–Dec 2022

Performance: Excellent

Verified: Yes

29.1 River site and description

The fish counter is sited on the upper end of the fish lift at the Leixlip dam on the river Liffey. It is a Logie, resistivity, counter with one channel covering the width of the fish lift chute and provides a full count of salmon that pass up-river past this point of the river. The current configuration includes a desktop computer with Geovision DVR card and two cameras which provides verification for the fish count.

29.2 Operation

The Logie counter has been repaired and reinstalled. The counter is serviced by a desktop computer with a Geovision card installed. The current hardware is very suited to this site. There are two Sony submersible cameras on site. Two cameras at the top of the fish pass allow for verification of the fish ascending the system. This counter has operated well in 2022 after it was reinstalled.



Table 57: Counter data for the Liffey (Leixlip) River

Fish Species	Number
Spring salmon	07
Grilse	38
Late Summer Salmon	36
Sea Trout	0

LIFFEY (LEIXLIP) COUNTER 2022

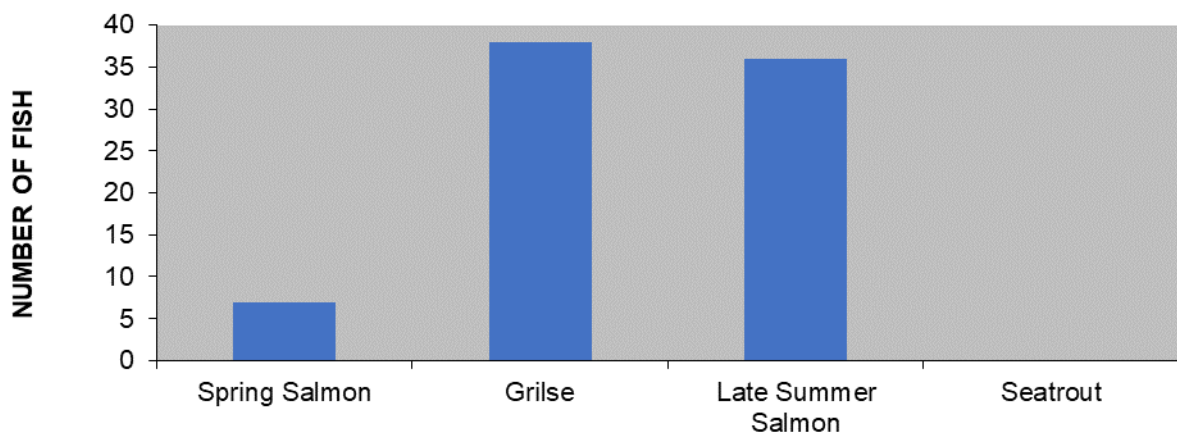
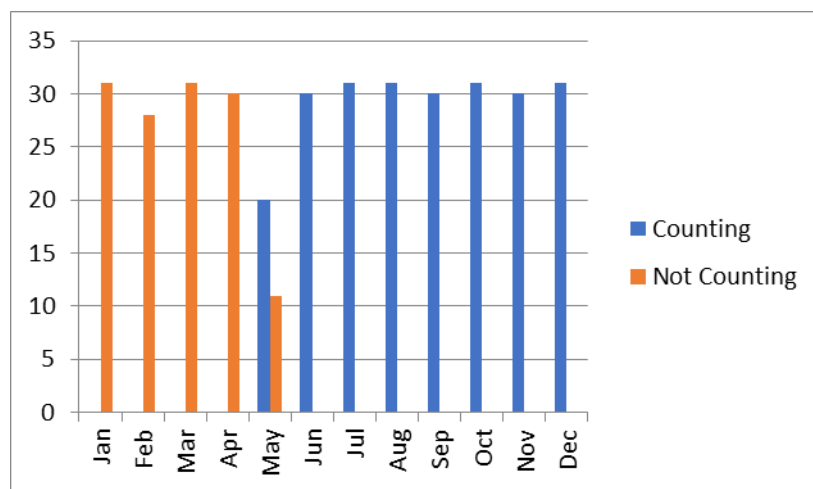


Table 58: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
234	131



30 Cliff Hydro Station



Counter type: Vaki (Windows 10/Minicomputer)

Operating: Yes

Status: Full count

Verified: Yes

30.1 River site and description

The counter is in the fish pass for the Cliff Hydro Station on the Erne. The fish pass is a series of pools that allow fish to pass the hydro station. The Vaki frame is in one of the pools in the fish pass which allows for a total count of salmon that pass upstream of this point. The display unit is located outside the main building and is housed adjacent to the fish pass in a stainless-steel cabinet. The Vaki counter is a new generation counter which includes a minicomputer with windows 10 operating system.

30.2 Operation

The counter has worked well during the year. The distance between the display unit and the panel has been reduced significantly which has resulted in a more successful counter. The data has been downloaded by IFI staff and the ESB staff locally have carried out upgrades as any works carried out on or in the fish pass requires a "Proof of isolation" lock out order.



Table 59: Counter data for the Erne River

Fish Species	Number
Spring salmon	0
Grilse	229
Late Summer Salmon	150
Sea Trout	0

CLIFF HYDRO STATION (ERNE)

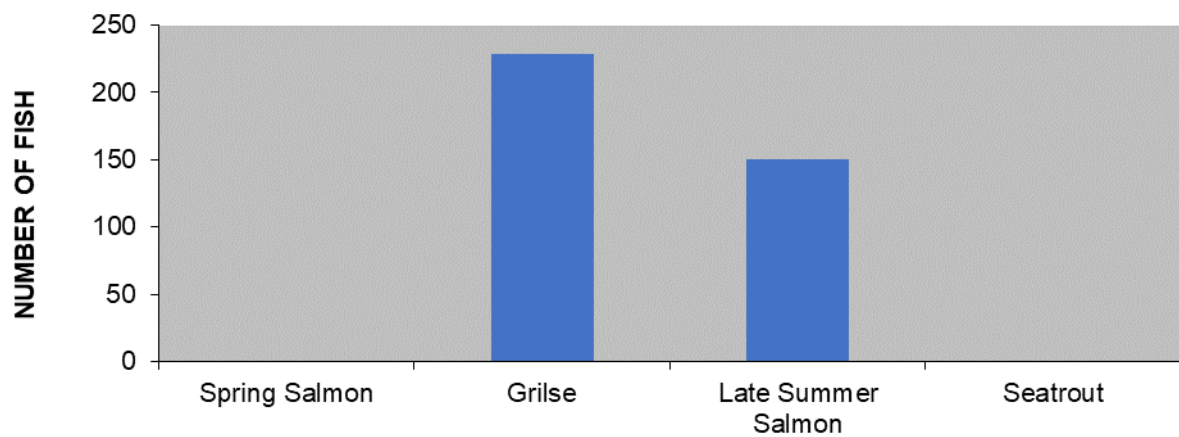
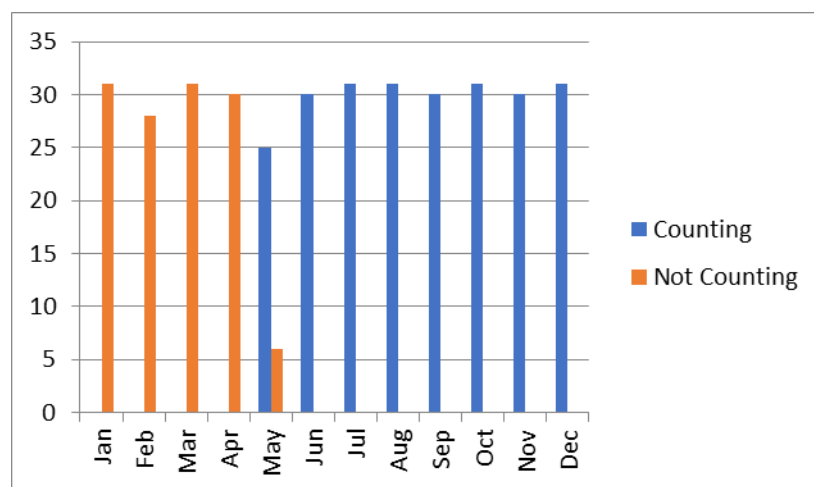


Table 60: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
239	126



31 Ardnacrusha Hydro Station



Counter Type: Vaki Counter

Operating: Yes

Status: Full count

Verified: Yes

31.1 River site and description

The counter is a Vaki counter located at the upper end of the Borland type fish-lift at the country's largest generating station on the river Shannon. The panels are located at the top of the lift before they enter the flume. The computer and software to interrogate the counter and cameras is in an office in the main building. There is a GSM mobile remote access to the counter on site.

31.2 Operation

The counter is operational using an older type of DU which has proved very successful for this site. The panels are located at the top of the lift which is a stable site and produces accurate results. The fish counter was reinstalled later in the summer and therefore counts are from this point onwards.



Table 61: Counter data for the Shannon River

Fish Species	Number
Spring salmon	0
Grilse	229
Late Summer Salmon	150
Sea Trout	0

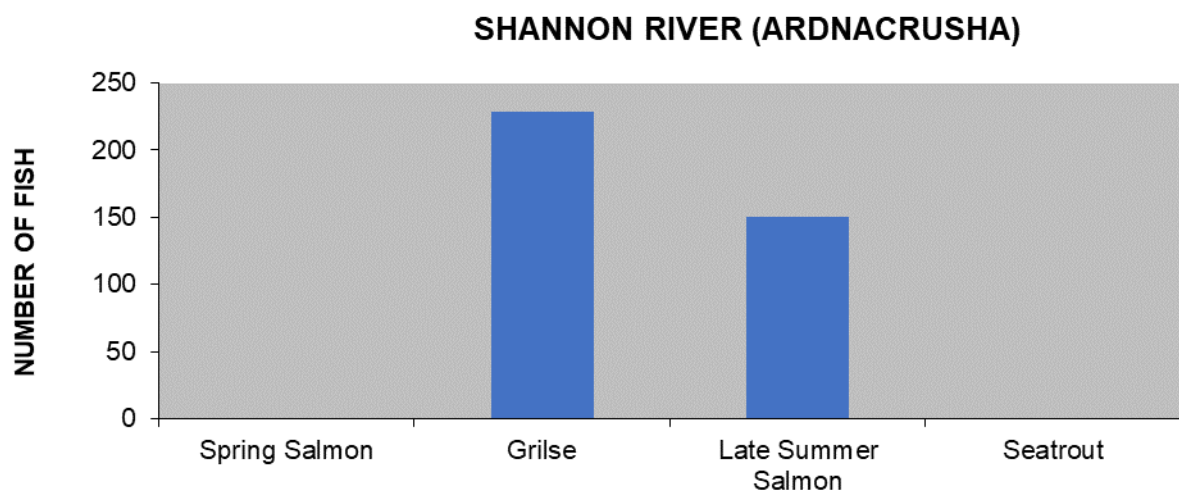
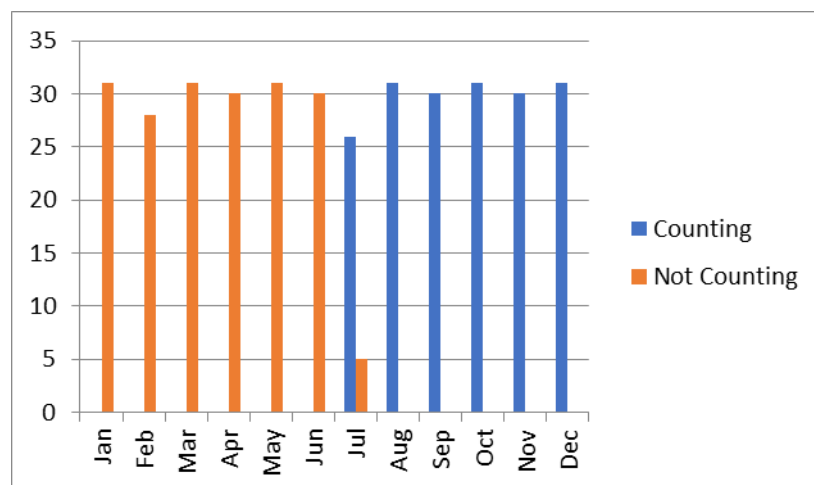


Table 62: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
179	186



32 Parteen Impounding Weir



Counter Type: Vaki

Operating: May – Dec 2022

Status: Full count

Verified: Yes

32.1 River site and description

This site is located on the weir at the lower end of the Shannon and it regulates the water for the main Ardnacrusha Hydroelectric station. The counter is a standard Vaki counter with a digital display unit located in the hatchery building and the panels in the fish pass. The fish pass is a ladder type fish pass which is maintained by the hatchery staff.

32.2 Operation

The counter is a new Vaki counter system which was purchased and installed in 2022. The counter works well, and remote access has been tested on the hardware and will be installed in early 2023. The counter has recorded a significant run of salmon since its reinstallation.



Table 63: Counter data for the Shannon River

Fish Species	Number
Spring salmon	23
Grilse	303
Late Summer Salmon	129
Sea Trout	0

SHANNON RIVER (PARTEEN)

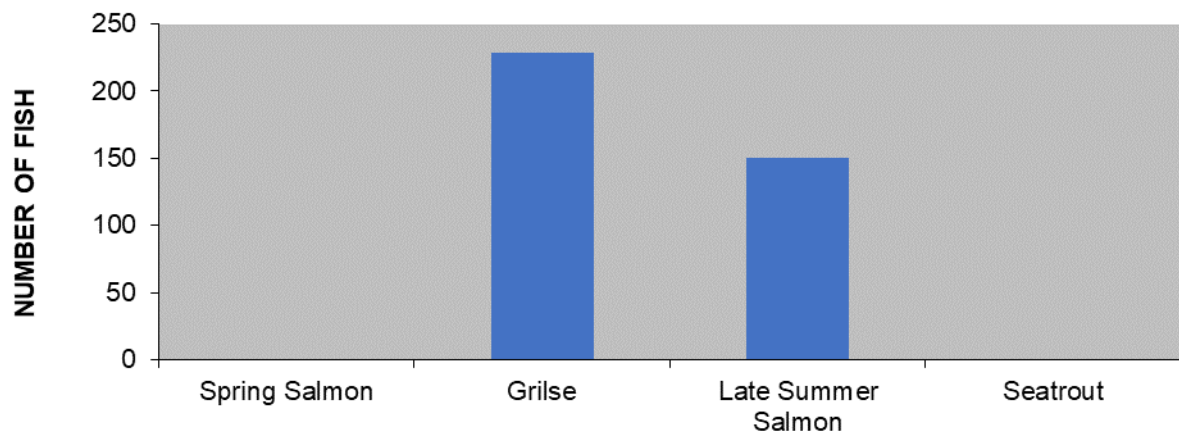
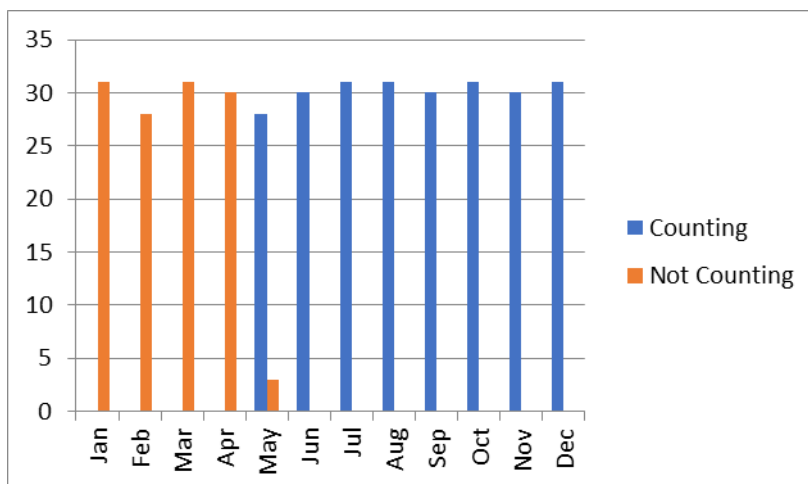


Table 64: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
242	123



33 Inishcarra Hydro Station



Counter Type : Vaki

Operating: No

Status: Full count

Verified: Yes

33.1 River site and description

The fish counter is in a fish lift in the Inishcarra dam which was built in 1953 on the River Lee in Co Cork. The Vaki counter is a standard configuration which requires a laptop and connection to download on-site and verification off-site. All physical works need to be completed by staff on site. The Vaki panels are held in place by a special metal frame on the upper end of the lift.

33.2 Operation

The counter is currently not operational as the panels have not been installed. The standard display unit is housed in an external stainless-steel cabinet on the dam. The status of the DU is unknown as the power has been disconnected from the housing and locked out.

34 Clady River



Counter type: Vaki

Operating: May – Dec 2022

Performance: Good

Verified: Yes

34.1 River site and description

The Clady River flows through wild moorland for around 9 kms draining Lough Nacung at Gweedore and flowing through Bunbeg to join the Crolla River estuary. The Clady gets a good run of grilse with the odd autumn salmon. The river flow is controlled by a hydroelectric power station at the head of the river. The counter is located well up the system with significant spawning occurring below the census facility. Therefore, it provides limited census data for the full Clady catchment.

34.2 Operation

The new Vaki counter is an upgraded base model to replace the older Vaki that was on this site. This site is operated by the ESB with operator assistance from IFI. The fish counter was installed in May 2022 and after some minor issues were rectified the site worked well. IFI staff download and verify the data and the site maintenance is carried out by the ESB.



Table 65: Counter data for the Clady River

Fish Species	Number
Spring salmon	0
Grilse	256
Late Summer Salmon	0
Sea Trout	56

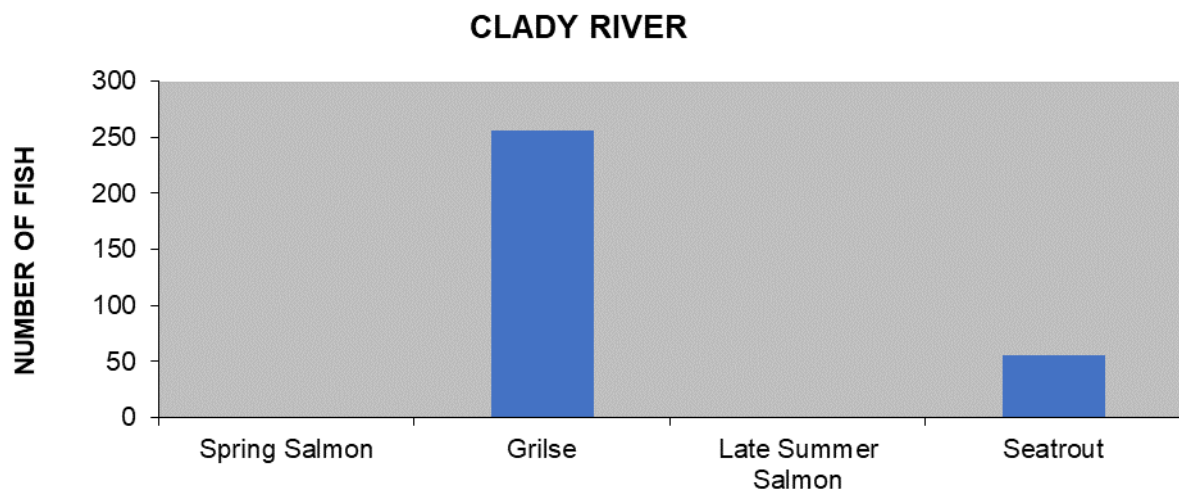
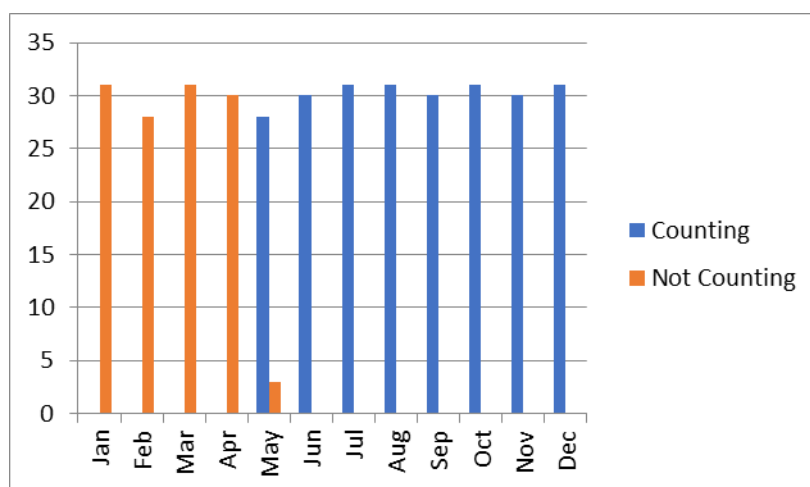


Table 66: Counter Operations

Counter Operational (Days)	Counter not operational (Days)
242	123





Conclusion

The fish counter programme has operated successfully with almost all the counters' sites providing accurate verified data for the year. Significant work has taken place to upgrade recording equipment and cameras on sites around the country. The three-year upgrade plan has been successfully completed. Additional research to provide remote access is ongoing. This will increase our download capability and frequency. These are currently being tested in Waterville and the Feale and have proved very successful. It will not be possible to have all sites due online due to the remote nature of the fish counters and lack of broadband facilities.

The Global pandemic has not had an adverse on the fish counter programme. As the counters record automatically, they continue to record during the lockdowns. New hardware to support high-definition cameras which are compatible with the Logie counter had been identified in 2019 and we were able to complete the upgrade plan in 2022. A small number of sites remain with the older recording equipment as it suits these systems better.

Plans for 2023 include the continued upgrade of hardware, if necessary, on the outstanding sites and further research into broadband and remote access which will contribute to the reduction of the carbon footprint of the organisation.

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.