Ness and Beauly Fisheries Trust:
2014 Update

Annual General Meeting

Ness & Beauly Fisheries Trust

Very busy year for the Trust!

Administration

New Staff Structure

Trust Director – Chris Conroy has taken on the new position of part-time Trust Director, reporting to the Trust Chairman.

Senior Biologist – Nick Barker has been promoted to the position of Senior Biologist, reporting to the Trust Director.

Assistant Biologist – Chris Daphne has taken over from Nick's previous role as Assistant Biologist, reporting to the Senior Biologist.

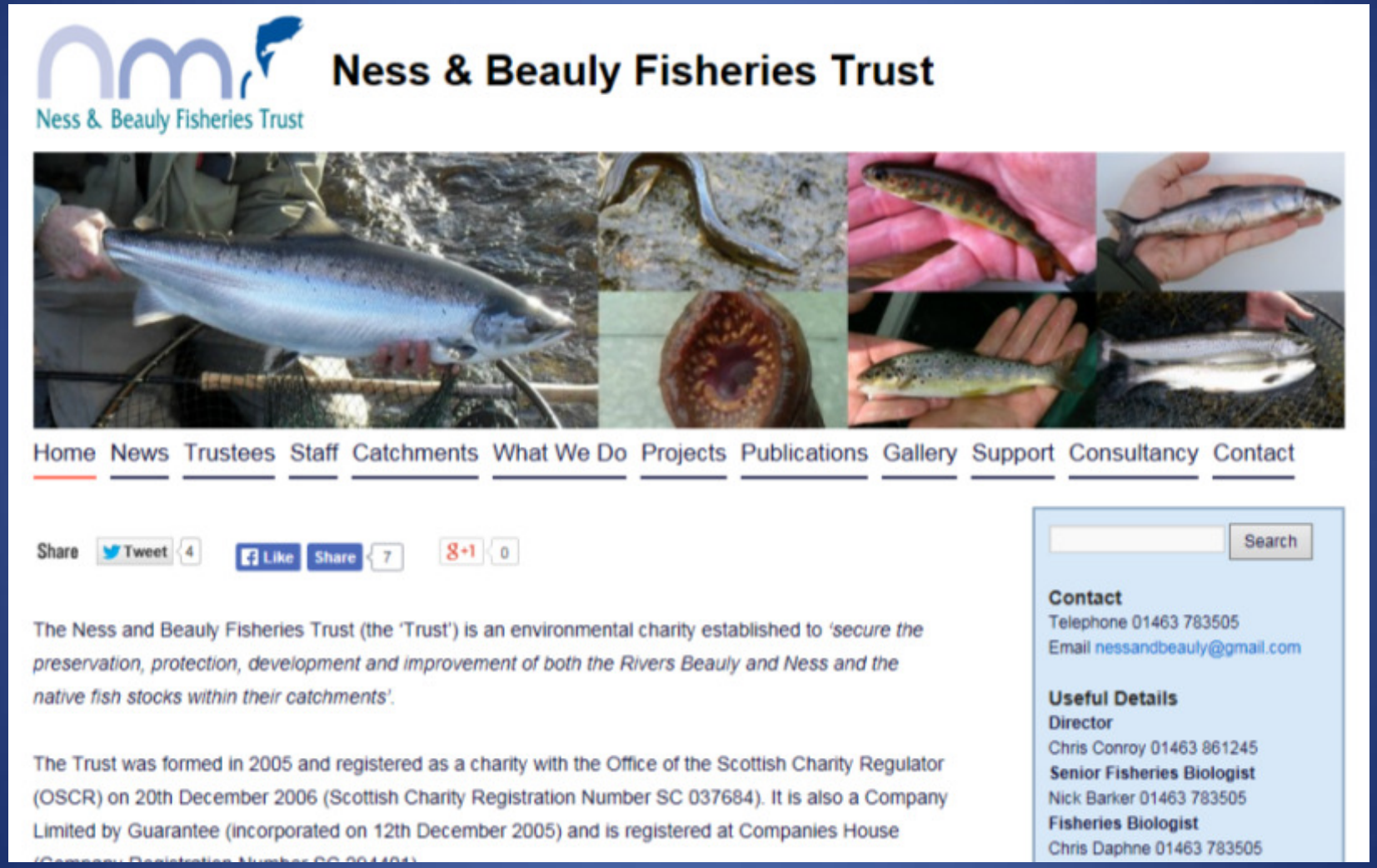
Pearls in Peril River Watcher – Natalie Young has taken over from Chris's previous role as 'Perils in Pearl' River Watcher.

Administration

Refurbished Office

Administration

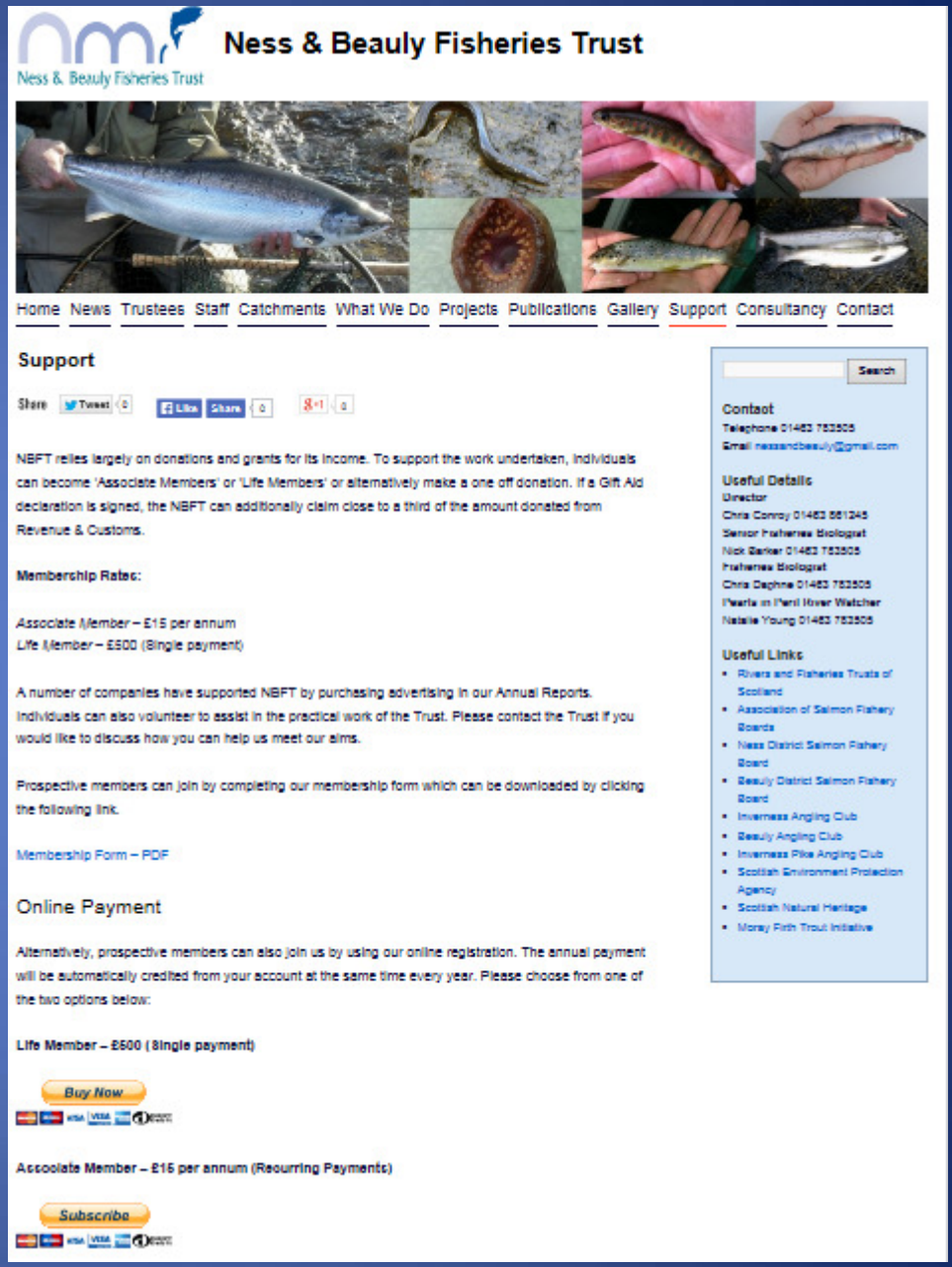
Updated Website



www.nessandbeauly.org.uk

Administration

Updated Website



www.nessandbeauly.org.uk/membership

Key Work Undertaken in 2014

Projects

- Fisheries Management Plans
- Pearls in Peril LIFE+ Project
- Scottish Mink Initiative
- Upper Garry Salmon Restoration Project
- Salmon Netting at Rosemarkie
- Moray Firth Trout Initiative
- Culburnie Passage Easement
- Tarff Habitat Restoration
- Holm Burn Restoration Project
- Scale sampling and tagging programmes

Routine Monitoring

- Beauly (23 Fully Quantitative Assessments)
- Ness (18 Fully Quantitative + 4 timed, including Garry Sites)

Fish Rescues

- Dewatering of Electric Burn

Contract Work

- Habitat survey and electro-fishing for a proposed wind farm
- Habitat survey and electro-fishing for 5 proposed micro-hydro schemes

Fisheries Management Planning

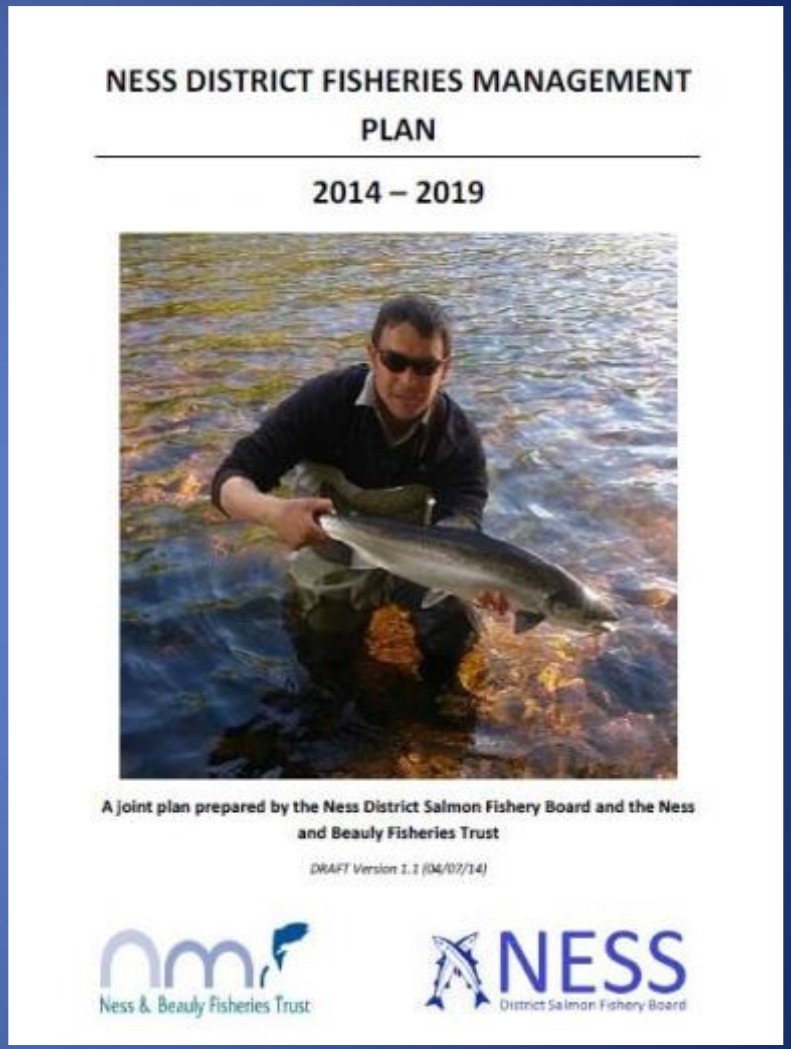
- Identify priority actions required for the management of fish populations within the Ness and Beauly districts.

- Framework for protection and enhancement and ensures that exploitation is undertaken in a sustainable manor.

- Key components include:

  - *A description of the key factors limiting fish production;*
  - *Proposed management actions for each of seven management units;*
  - *Routine monitoring requirements; and*
  - *Key review periods for the plan.*

- Six year plans, regularly reviewed and updated to keep relevant.



Pearls in Peril LIFE+ Project

Introduction

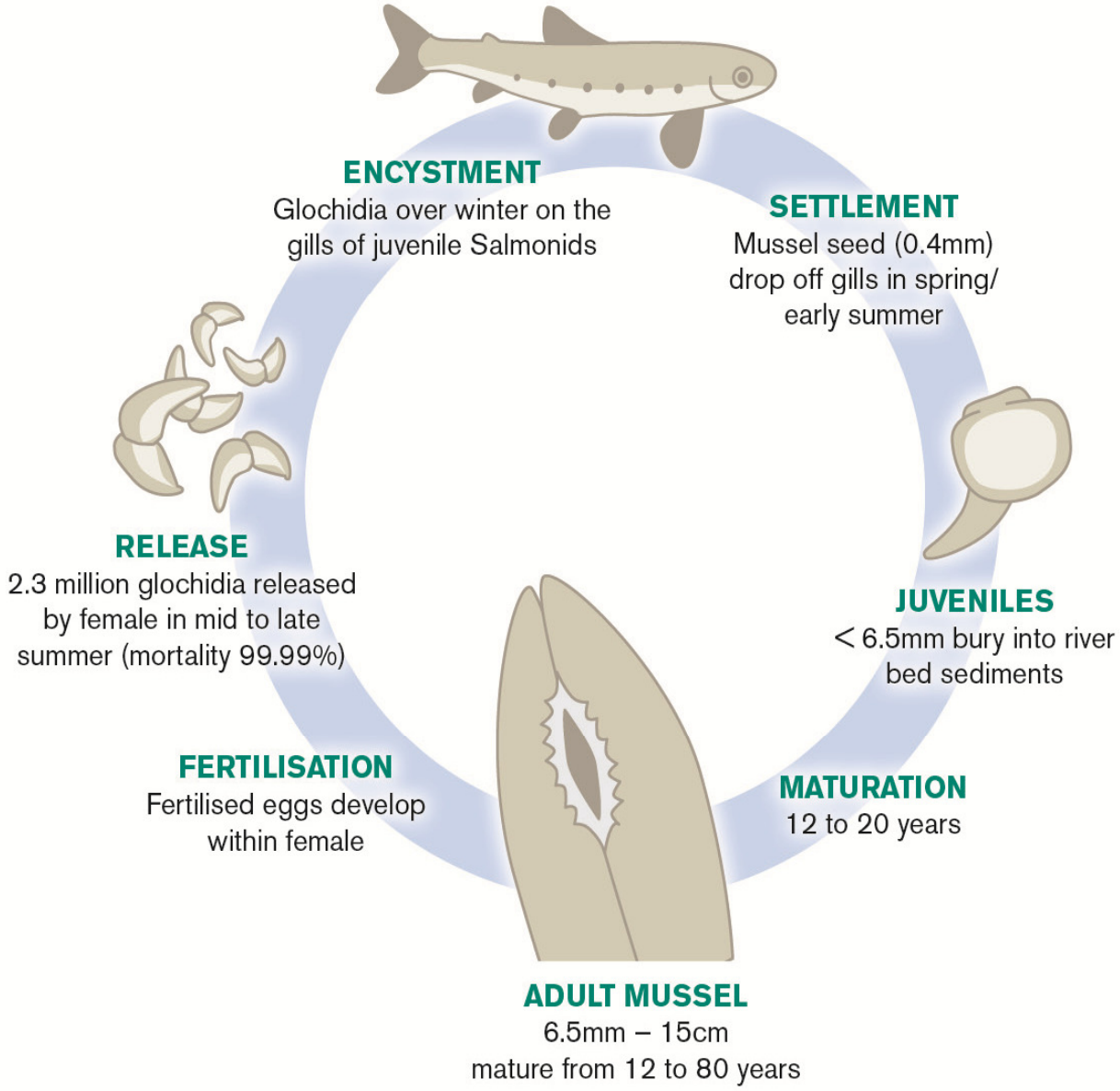
- Co-funded by 22 organisations across Scotland, England and Wales.

- The project spans four years from 2012 to 2016. Wide range of conservation measures will be implemented in key river systems. The measures will aim to:

1. RESTORE the habitat of freshwater pearl mussel and salmonids (salmon and trout);
2. SECURE the long term survival of existing freshwater pearl mussel populations; and
3. COMMUNICATE with local, national and international audiences to raise awareness of freshwater pearl mussel conservation issues.

Lifecycle of the pearl mussel

Margaritifera margaritifera



pearls in peril

Pearls in Peril LIFE+ Project:

NBFT Actions

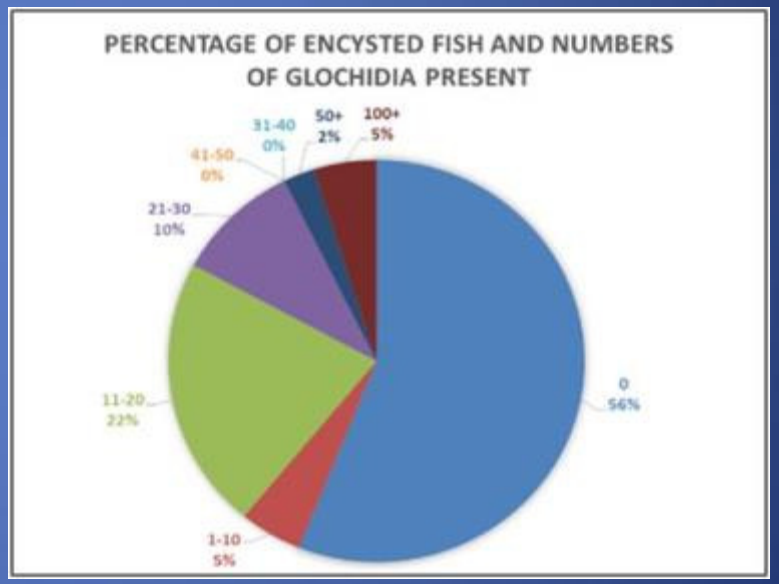
4 key stages in 2014:

1. Baseline monitoring of natural encystment in Moriston;
2. Glochidial development monitoring;
3. Artificial encystment; and
4. Artificial encystment monitoring.

Educational Remit – 28 days over 3 years

Pearls in Peril LIFE+ Project:
Monitoring of Natural Encystment

- Where there are lots of mussels – are they managing to reproduce successfully?



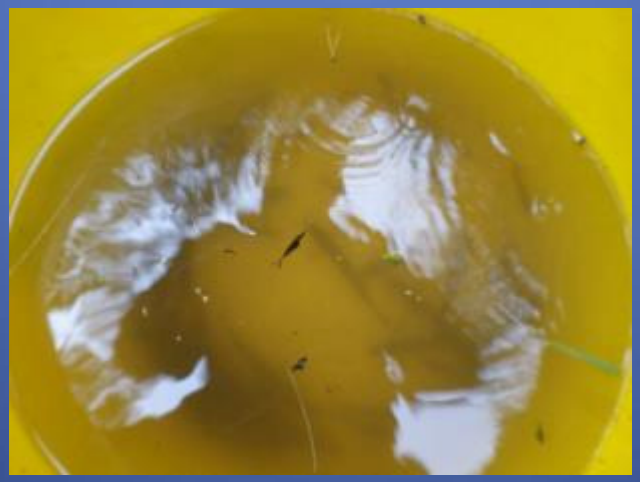
Pearls in Peril LIFE+ Project:
Glochidial Development Monitoring

- We need to know when the mussels will ‘spat’

Pearls in Peril LIFE+ Project:

Artificial Encystment

1. Find some mussels
2. Force the spat
3. Encyst the Fish
4. Release the Fish



Pearls in Peril LIFE+ Project:
Education

- To date, we have reached c. 300 children.
- By 2016 we hope to have increased that figure to c. 700 – possibly more.
- Field trips, school visits and public events e.g. Moy Game Fair

Pearls in Peril LIFE+ Project:

River Watcher

- 16 SACs across Scotland from North Harris to Montrose basin
- Site visit each SAC twice
- Report on the SAC's general habitat and condition
- Look for threats to pearl mussels
- Report pearl mussel crime and work closely with Police Scotland
- Launch 16 Riverwatch schemes

Scottish Mink Initiative:

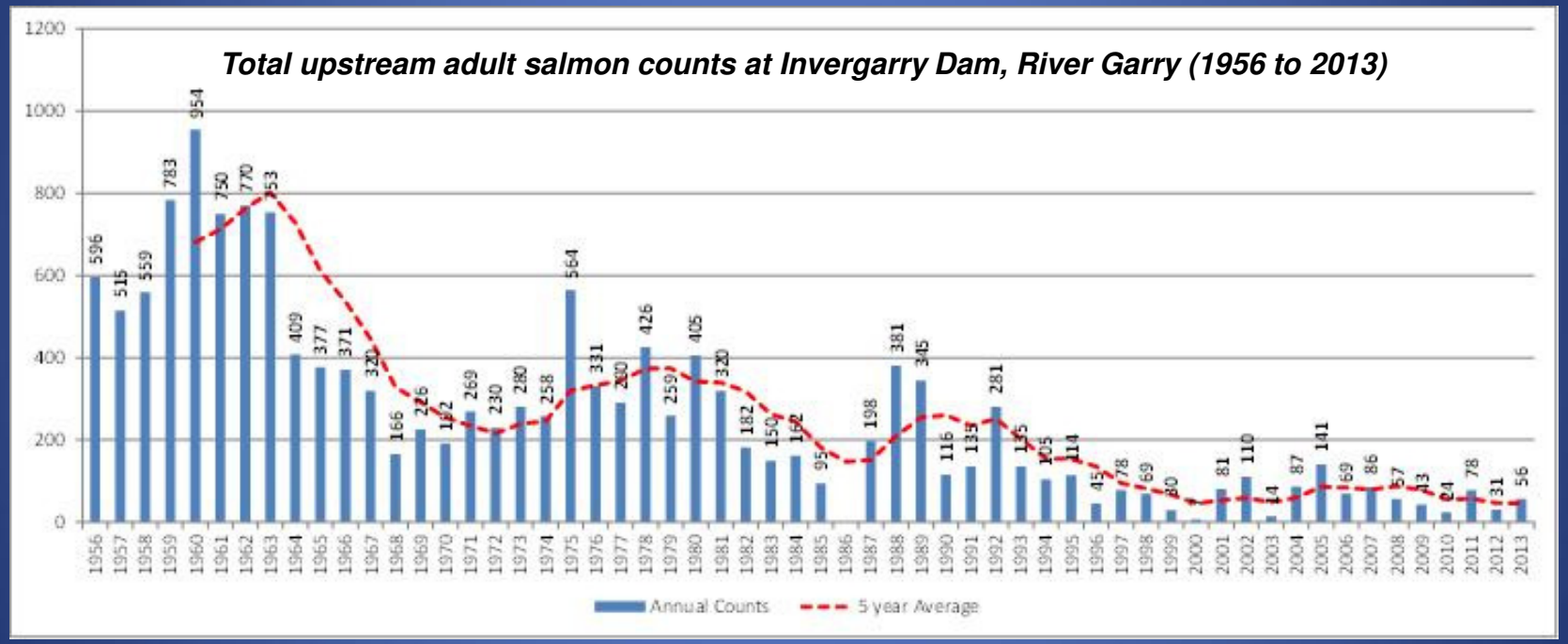
Introduction

- 40 volunteers – increase since 2013 – still need more especially in the Beauly catchment
- Successfully raised the profile of the project in the last 8 months
- Ness catchment considered a key target area as transit from West Coast to East is easily achieved due to Great Glen.
- Lots of sightings and marks on rafts but not enough captures...

Upper Garry Restoration Project:

Introduction

- The abundance of salmon in the Upper River Garry has declined over the last fifty years and is showing little sign of recovery.



- Historical annual counts of 600 to 800 salmon reduced to a five year average of 40 salmon.
- Factors limiting its recovery appear to be multiple, including: impacts of hydro, land management, predation and genetic interactions.

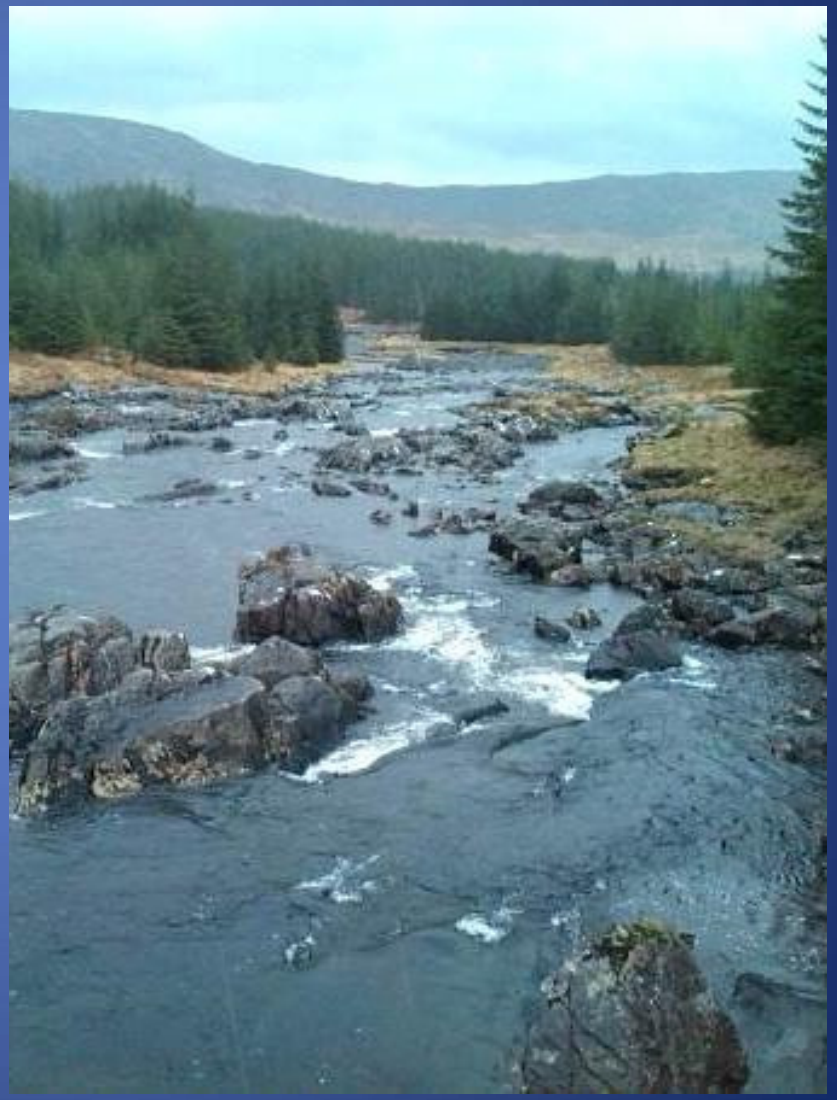
Upper Garry Restoration Project:

Electro-fishing Results

River/Burn	Site	Salmon Fry/100m^2	Salmon Parr/100m^2	Trout Fry/100m^2	Trout Parr/100m^2
Upper Garry	UG1	1*	3*	1*	3*
Kingie (Kinbreak Burn)	AACBH1	20 ± 3	19 ± 1	0	0
Kingie	KI6	1*	7*	4 ± 0.3	0
Lower Garry	GAR3	92 ± 5	9 ± 1	0	0
Lower Garry	GAR2	117 ± 17	10*	0	0
Allt na Caillichie	ANC1	50 ± 14	8*	4 ± 0.3	3*
Allt Choire a' Bhalachain	ACB2	2*	0	27 ± 4	0
Gear Garry	GG2	1*	0	12*	1*
Gear Garry	GG/TIMED11	0	0	0.2/min	0
Gear Garry	GG/TIMED8	0	0	1/min	0
Allt na Slataich	ASL1	2.3*	0	24 ± 4	1*
Allt Daingean	ADAI1	0	9 ± 1	3*	3*
Garbh Allt	GA1	0	0	9 ± 2	9 ± 2
Allt a' Ghobhain	AAG1	0	0	1*	0
Allt Garaidh Ghulaich	AGG2	0	0	0	3*
Greenfield Burn	GRB2	0	0	46 ± 8	5 ± 1
Aldernaig Burn	ALDR1	0	5*	10*	5*

Upper Garry Restoration Project:
Enhancement Initiatives

- Partnership project encompassing habitat improvement and stock rehabilitation through supportive breeding and supplementary stocking.
- Capture of a proportion of the salmon smolts as they migrate downstream towards the sea between March and May. These fish will then be grown on to maturity in captivity.
- Eggs from these fish stocked to areas accessible to salmon upstream of Garry Dam for a period of 4 years in an attempt to "kick-start" the population.



Upper Garry Restoration Project:

2014 Smolt Capture

Upper Garry Restoration Project:

2014 Smolt Capture

Upper Garry Restoration Project:

2014 Smolt Capture

Salmon Netting at Rosemarkie

- On the 13th August 2014 sweep net operation for salmon and sea trout at Rosemarkie Beach on the Black Isle, partnership project.
- The key purpose the operation was to capture, tag and release fish in an attempt to further our understanding of salmon and sea trout movements within the Firth.
- A 4.75lb grilse was anesthetised before being measured, weighed and tagged with an external anchor tag carrying a unique code number. A scale sample, sea lice and a DNA sample taken before it was released.

Moray Firth Trout Initiative:

Introduction

- The MFTI is working with local fisheries trusts, DSFBs and community angling associations to protect salmon and sea trout through environmental education and the conservation of trout populations and their habitat. Their key aims are:

  - The conservation of Moray Firth trout populations;
  - Improved education and awareness of trout ecology, freshwater environments and associated threats in the local community;
  - A network of community volunteers and river ambassadors;
  - A sustainable and locally managed Moray Firth rod and line fishery for trout; and
  - The improved understanding and management of Moray Firth trout populations.

- One of the key aims of the MFTI is to learn more about our local sea trout populations and how they use the marine environment and in particular the inner firths.

Moray Firth Trout Initiative:

Beauly Firth Sea Trout Netting

Moray Firth Trout Initiative:

Education

Moray Firth Trout Initiative:
'All About Trout' Event in Inverness

- The event was very well attended with presentations on sea trout, brown trout and ferox trout biology, restoration and angling.
- Aya Thorn's talk on 'Ferox Catch and Release' (Marine Scotland Science)
- Eric Verspoor's thought provoking presentation on genetic structuring in trout populations (Rivers and Lochs Institute)
- Martin Hughes' presentation on trout research being carried out by IBIS at Glasgow University.

Habitat Enhancements:

Culburnie Burn Barrier Removal

- Former apron bridge dating back to at least the 1800s.
- 'Eased' in September, funded by SEPA's Water Environment Fund plus 'in kind' contributions from NBFT.
- A 'naturalised' fish pass channel has been created through the structure.
- Facilitate the passage of both juvenile and adult salmon and sea trout to an extra 4km of pristine spawning and nursery habitat.

Culburnie Bridge Apron:

Before

Culburnie Bridge Apron:

'Eased'

Culburnie Bridge Apron:

After Spate No. 1

9th October 2014 – Damage to fish pass channel and apron after high water event

Culburnie Bridge Apron:

Spate No. 2

Culburnie Bridge Apron:

After Spate No. 2

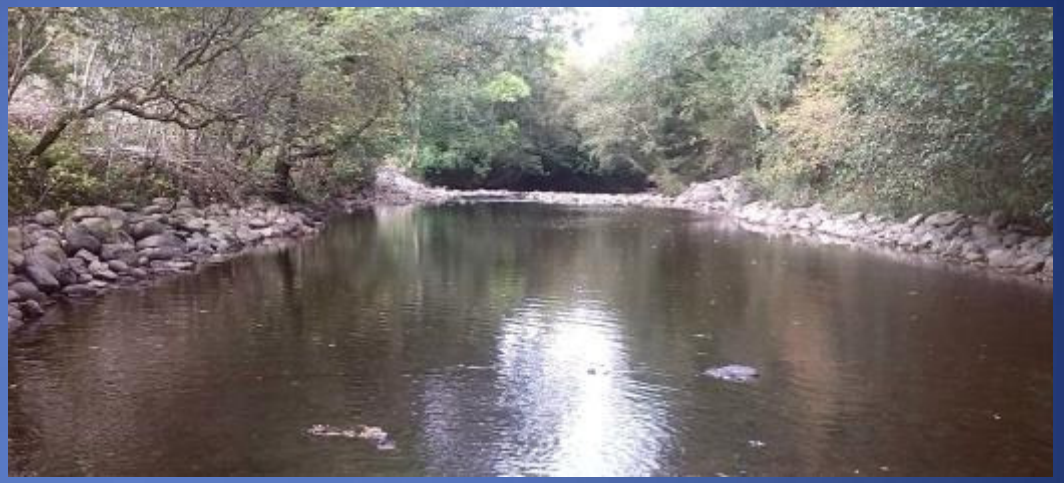
30th October 2014 – Damage to fish pass channel and apron after EXTREME high water event

Habitat Enhancements:

River Tarff, Fort Augustus

BEFORE

- Approx. 200 metres of the River Tarff in Fort Augustus dredged.
- Cobbles and boulders removed from the main channel and deposited on each bank.
- Widening of the channel: shallow, featureless glide with a loss of juvenile habitat.



AFTER

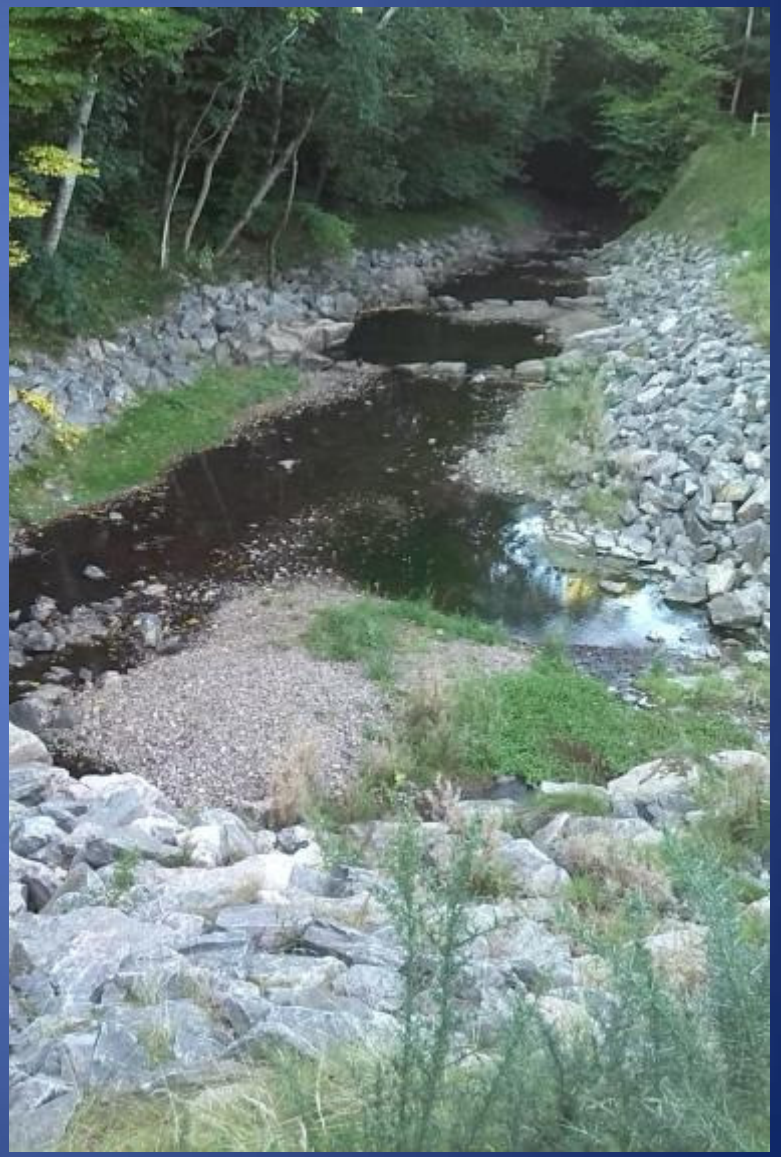
- Material from the banks put back into the main channel.
- Graded from the banks towards the centre of the channel.
- A meandering 'low flow' channel was created in the middle allowing adequate depth for juvenile salmon and trout under all conditions.

Holm Burn Restoration Project

- Partnership between the NDSFB, NBFT and Moray Firth Trout Initiative.
- The Holm Burn was an important spawning and nursery area for salmon and sea trout.
- A number of pressures including abstraction, morphological alterations and barriers to fish migration resulting in severely degraded habitat.
- A compensation flow agreement is believed to be the key to the long-term restoration of the Holm Burn; however this is unlikely to be reached until at least 2016.

Holm Burn Restoration Project

- A number of short-term actions are therefore being taken, specifically:
  - Assessing and Improving (if required) fish passage in the Holm Burn;
  - Carrying out a restoration stocking programme to support the recovery of a self-sustaining salmon population; and
  - Mitigating the impacts of low flows through the delivery of a habitat enhancement programme.
- Significant progress was made towards the implementation of these actions in 2014.



Holm Burn Restoration Project:

Fish Pass Assessment

Holm Burn SNIFFER Barrier Assessment.

Conducted by: Marcus Walters (MFTI) & Bob Laughton (FNLT) on Tuesday 15th April

Location: At confluence of Holm Burn & River Ness (57°26'59.8"N 4°15'39.9"W)

Overall Result: The weir and associated fish pass were assessed as impassable for all life stages of salmonids

The maximum depth of water over this concrete edge to the weir was a maximum of 3cm. This results in a passability score of 0 (impassable) for most species and life stages. Juvenile eel US were assessed as 0.3 (Partial Barrier High Impact) and Juvenile eel DS as 1 (No Barrier). If under higher flows the depth increased to >0.08m then the US passability for salmonids would be 0.3 (Partial Barrier High Impact).

The lack of effective pool depth (0.1m) combined with the hydraulic head (jump height) (0.6m) resulted in a passability score of 0 (impassable) for all up stream migrating species and life stages. If under higher flows the pool depth increased to 0.25m in High Flows the US passability score for adult salmonids would be 0. 3 (Partial Barrier High Impact).

Holm Burn Restoration Project:

Fish Pass Assessment

- A small number of fish did managed to ascend the weir during extremely high water in late October 2014, probably to seek shelter from flows.
- Lack of downstream passage has meant that they can't move back downstream.

Holm Burn Restoration Project:

Fish Pass Assessment

- Currently considering cost effective fish passage solutions, particularly as funding is an issue.

Holm Burn Restoration Project:

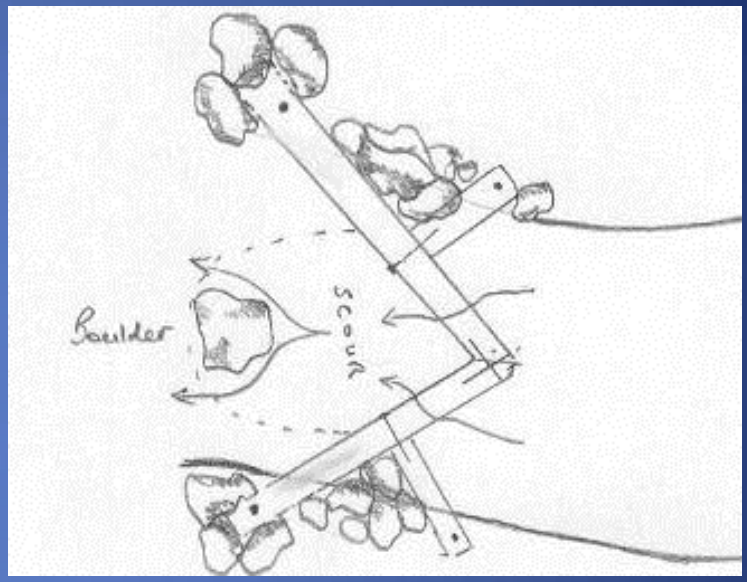
Restoration Stocking

Holm Burn Restoration Project:

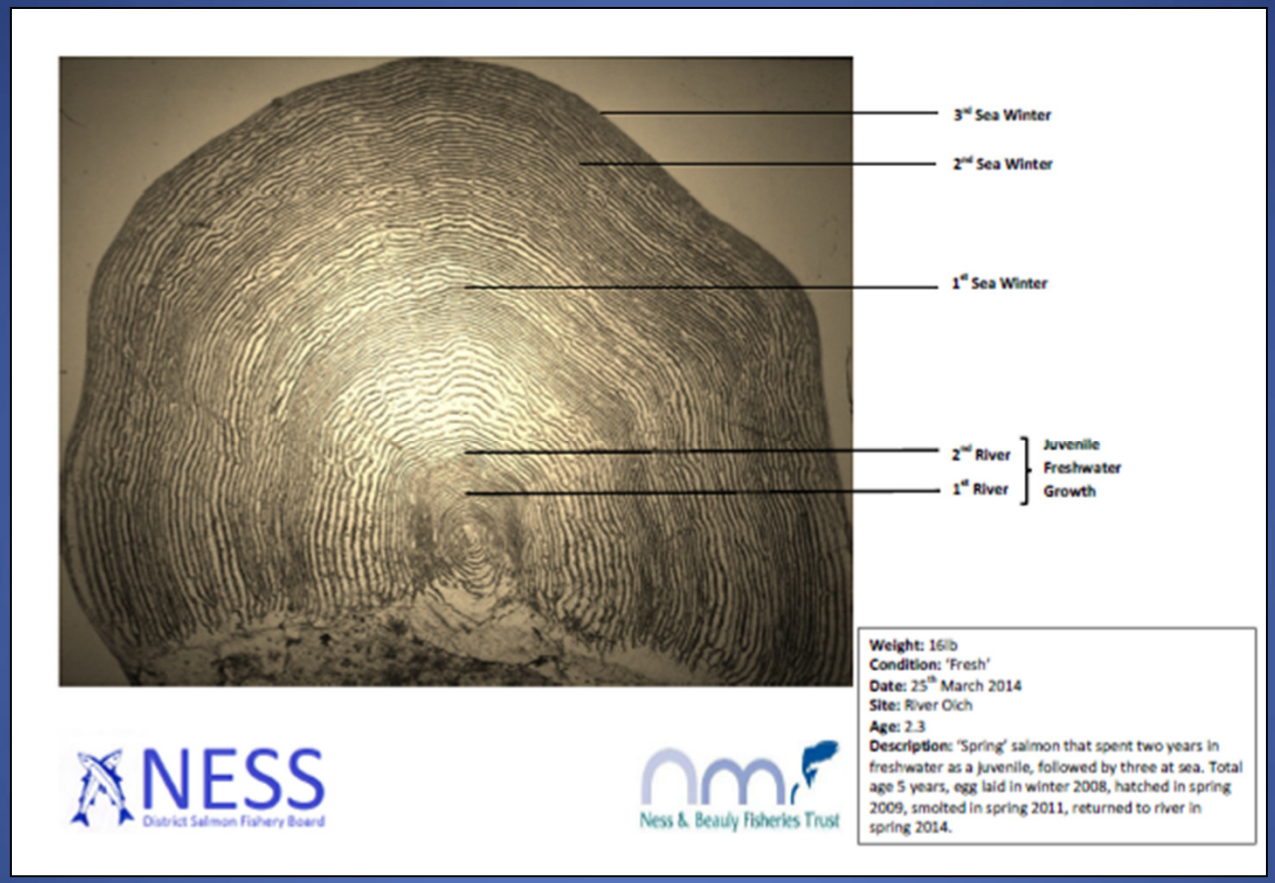
Habitat Restoration

- To mitigate against the effects of low flows, in-stream structures will be constructed that will create deeper refuge areas and maintain a narrower low flow channel.

- The structures will also create more habitat diversity, excavating and cleaning spawning gravel and providing parr cover.



Scale Sampling Programme



- Allows growth rates to be calculated, estimates of annual survival to be made and strong and weak year-classes of fish to be identified.
- Physiological changes such as maturation or smoltification can also be seen.
- Scales are usually the chosen structure because they can be sampled without sacrificing the fish.

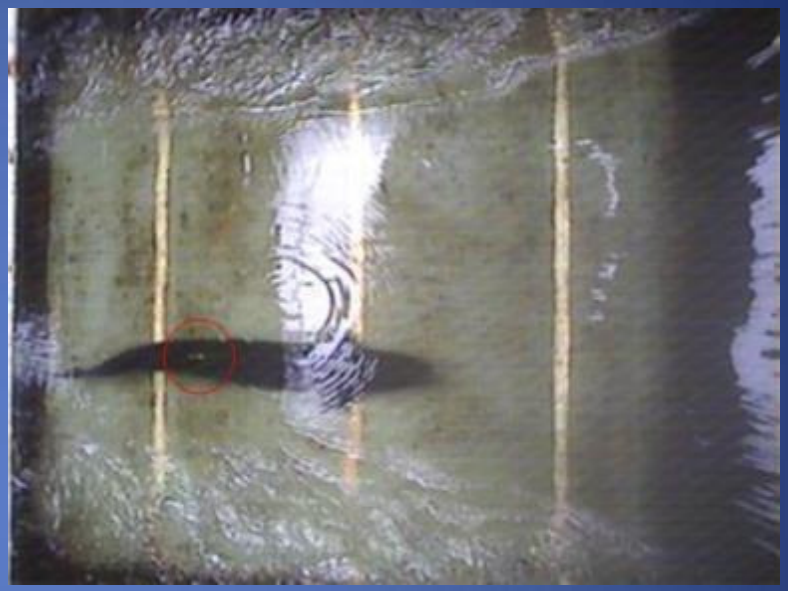
Tagging Programme

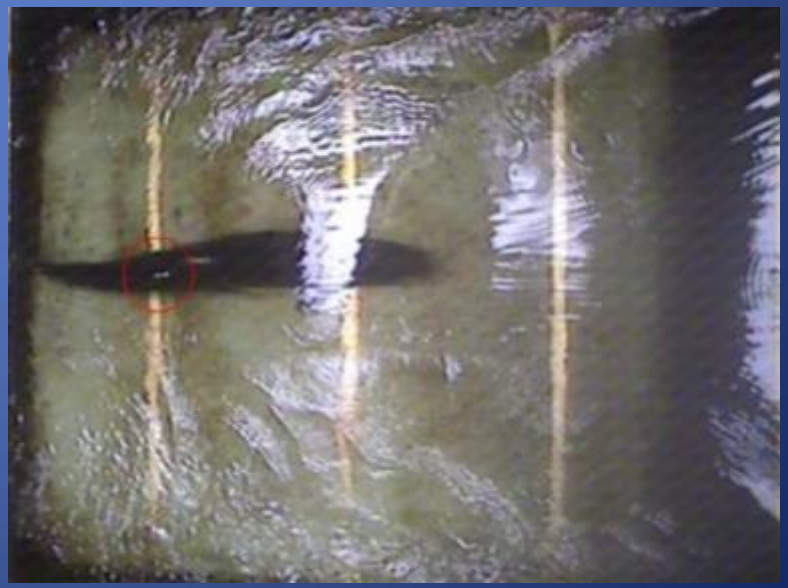
- This simple tagging technique provides basic information about where an individual fish is at two times in its life (i.e. when it is caught and tagged, and when it is recaptured).
- Information gathered following the recapture of tagged fish is used to provide information about growth, stock identity, movements, migration (both rates and routes), abundance and mortality.

Tagging Programme

- Tagged salmon photographed passing through Dundreggan Dam on the River Moriston.

- Confirms that the fish have fully recovered having been caught and released.





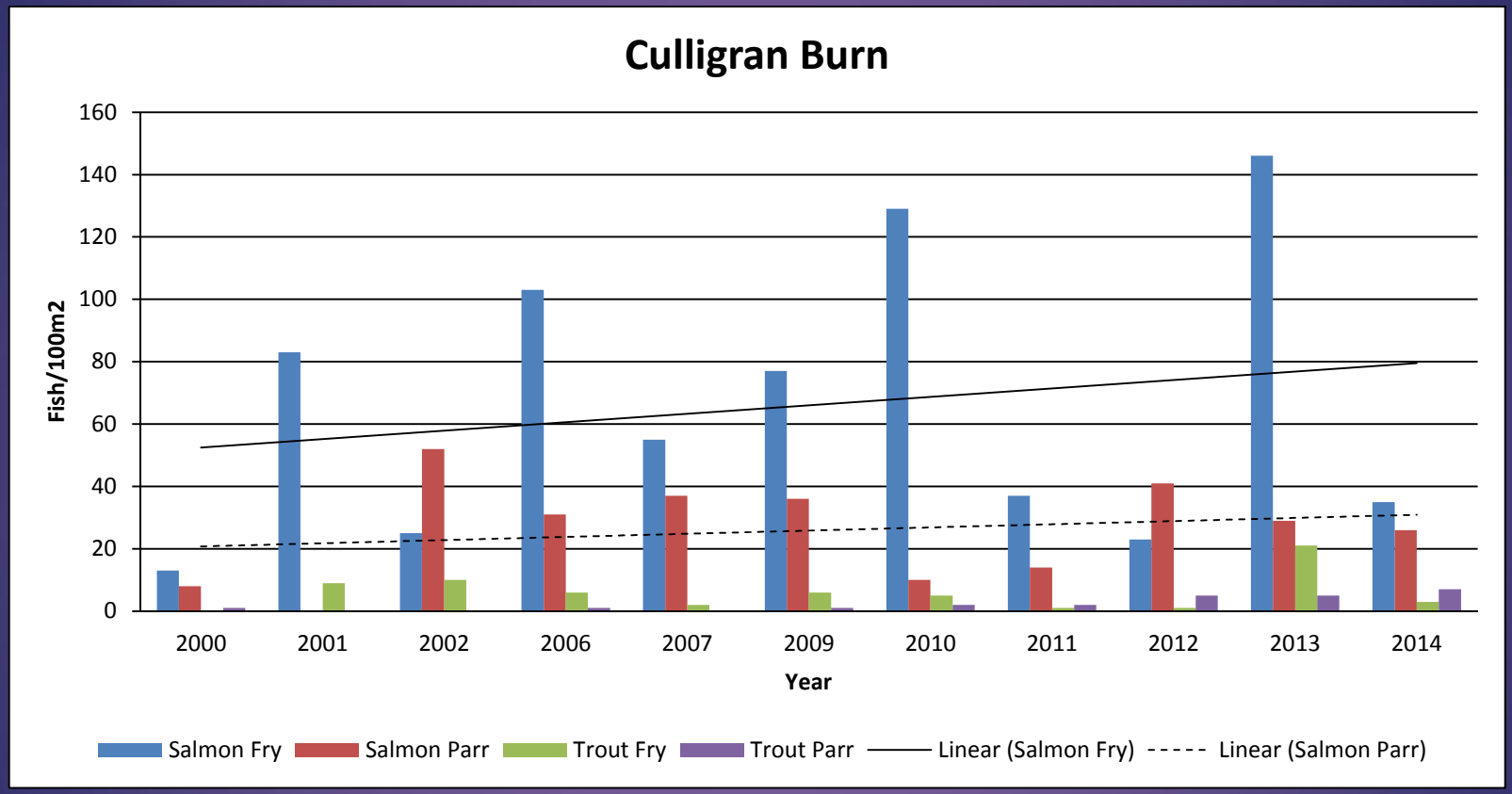
Routine Monitoring:

Introduction

- Standard electro-fishing and habitat survey methodology employed across Scotland.
- Provides spatial and temporal information which can be used to make comparisons between sites or years and inform management decisions.
- Beauly (23 Fully Quantitative Assessments)
- Ness (18 Fully Quantitative + 4 timed, including Garry Sites)

Routine Monitoring:

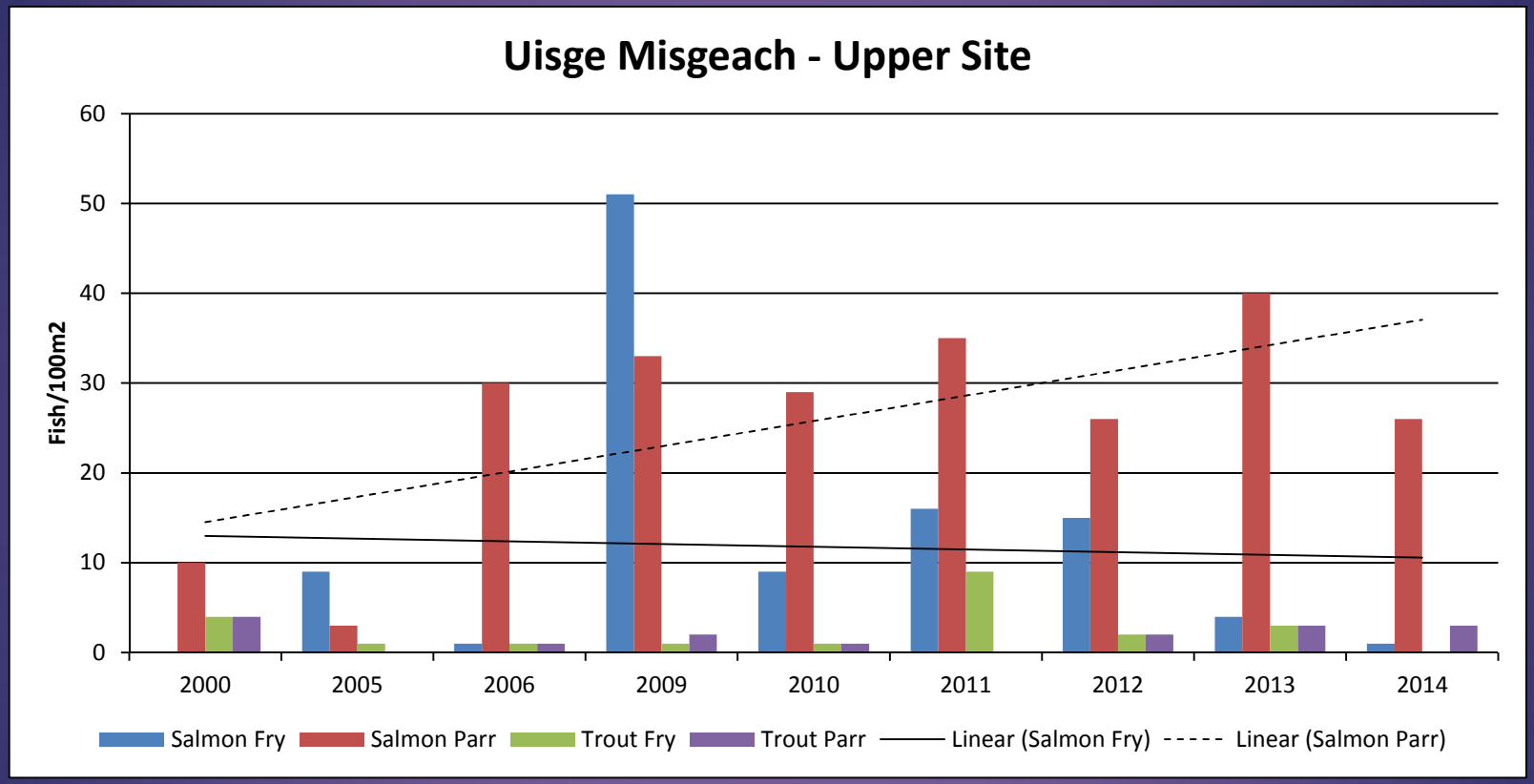
Beauly



- Site located in the Farrar Catchment.
- Trend for increasing salmon and fry densities

Routine Monitoring:

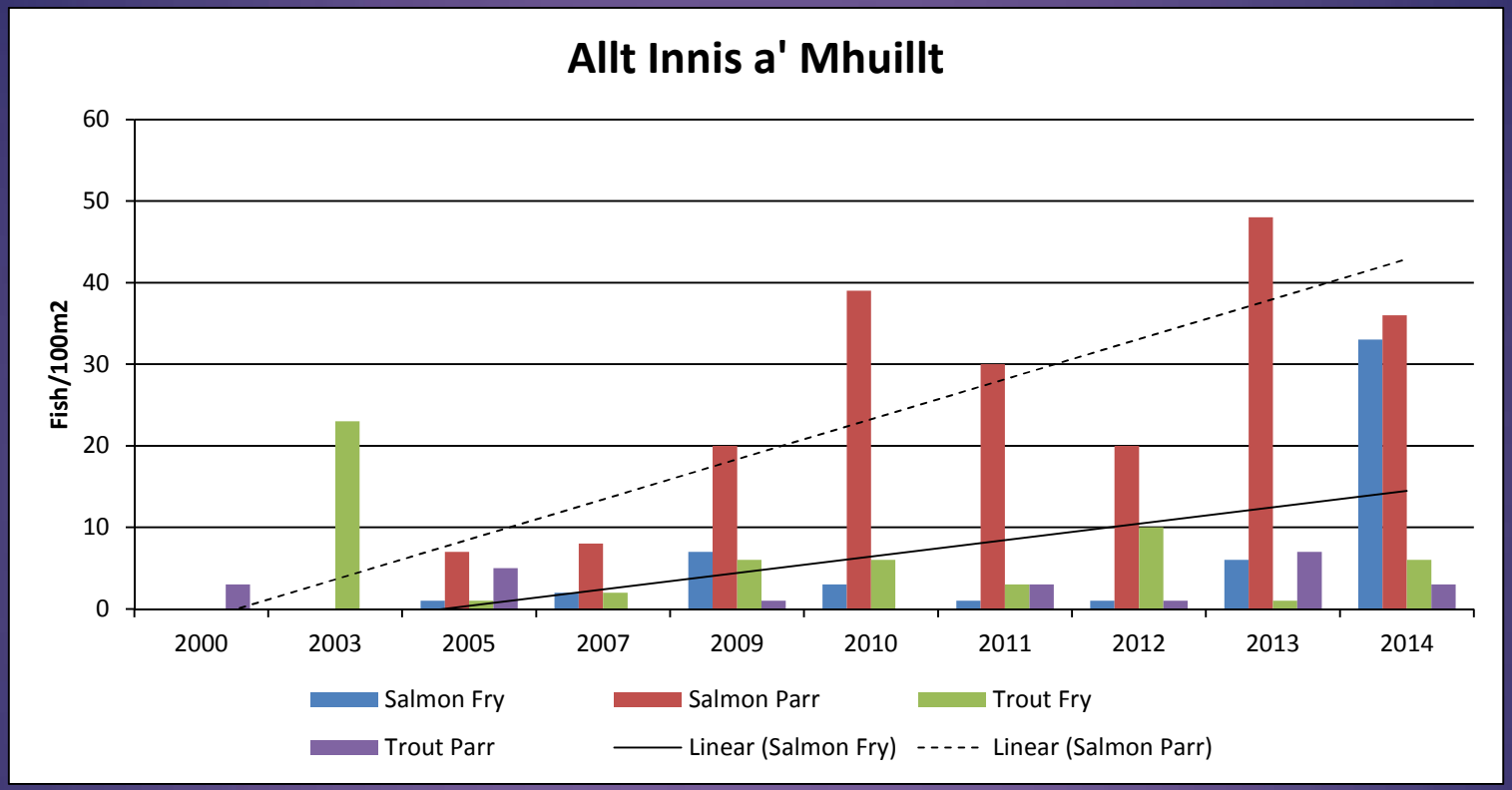
Beauly



- Site located in the Farrar Catchment.
- Trend for decreasing fry densities, however increasing parr densities
- Very much a parr site with big substrate and greater depth

Routine Monitoring:

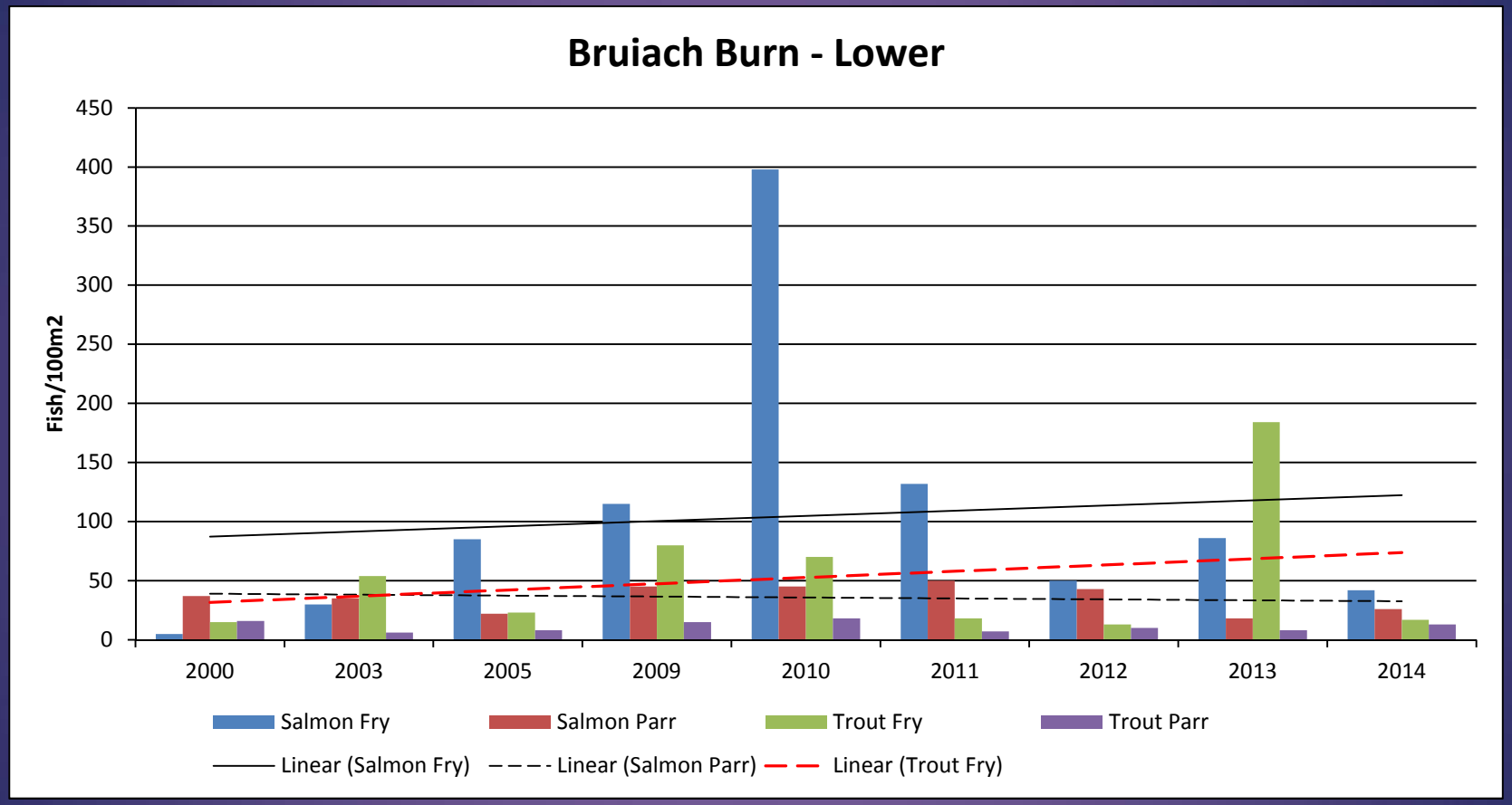
Beauly



- Site located in the Farrar Catchment.
- Burn re-watered following an agreement between SSE and Braulen Estate.
- Salmon now utilising much of its accessible length.
- Highest recorded density of salmon fry in 2014.

Routine Monitoring:

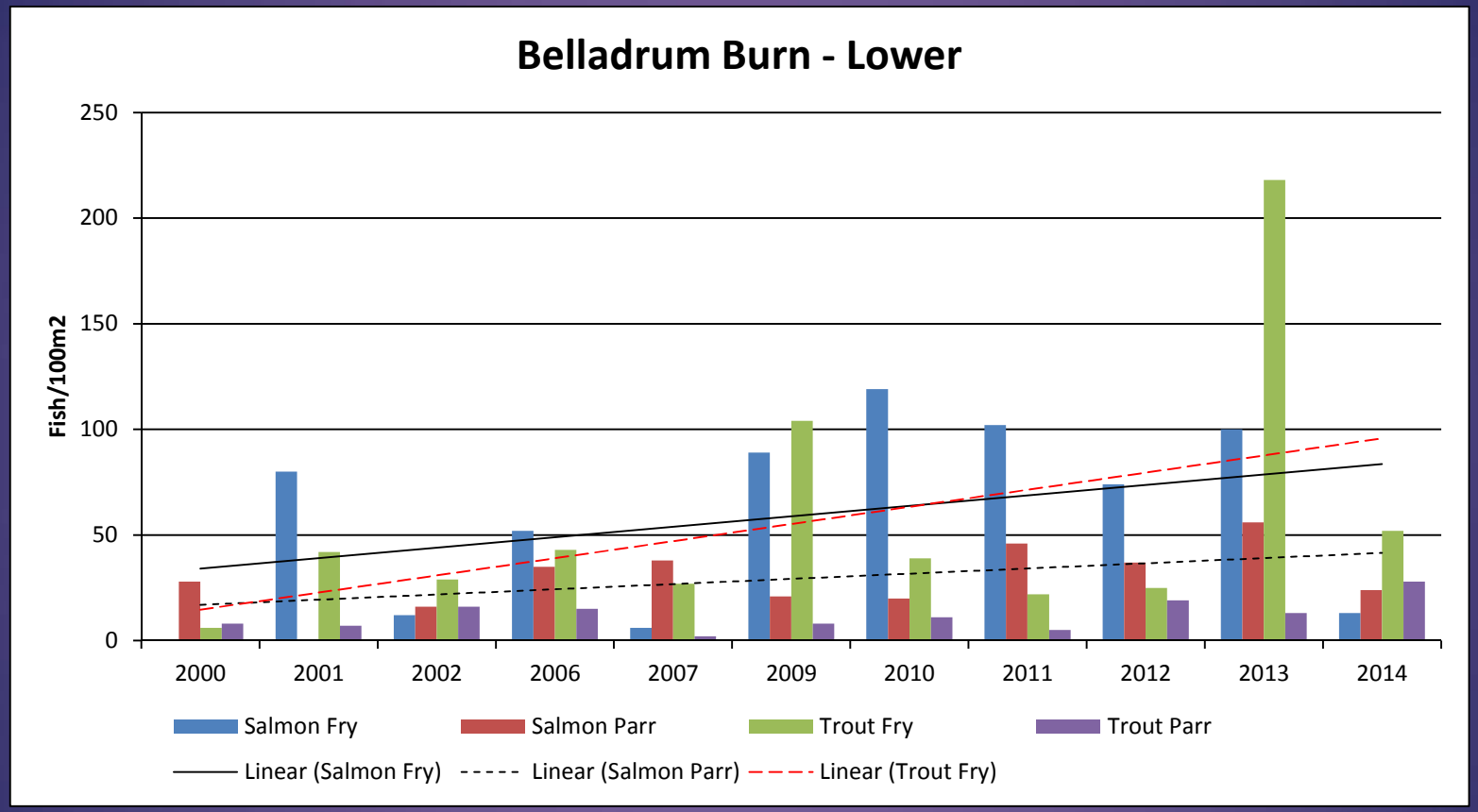
Beauly



- Lower River Beauly, major tributary.
- Seemingly downward trend in salmon parr density.

Routine Monitoring:

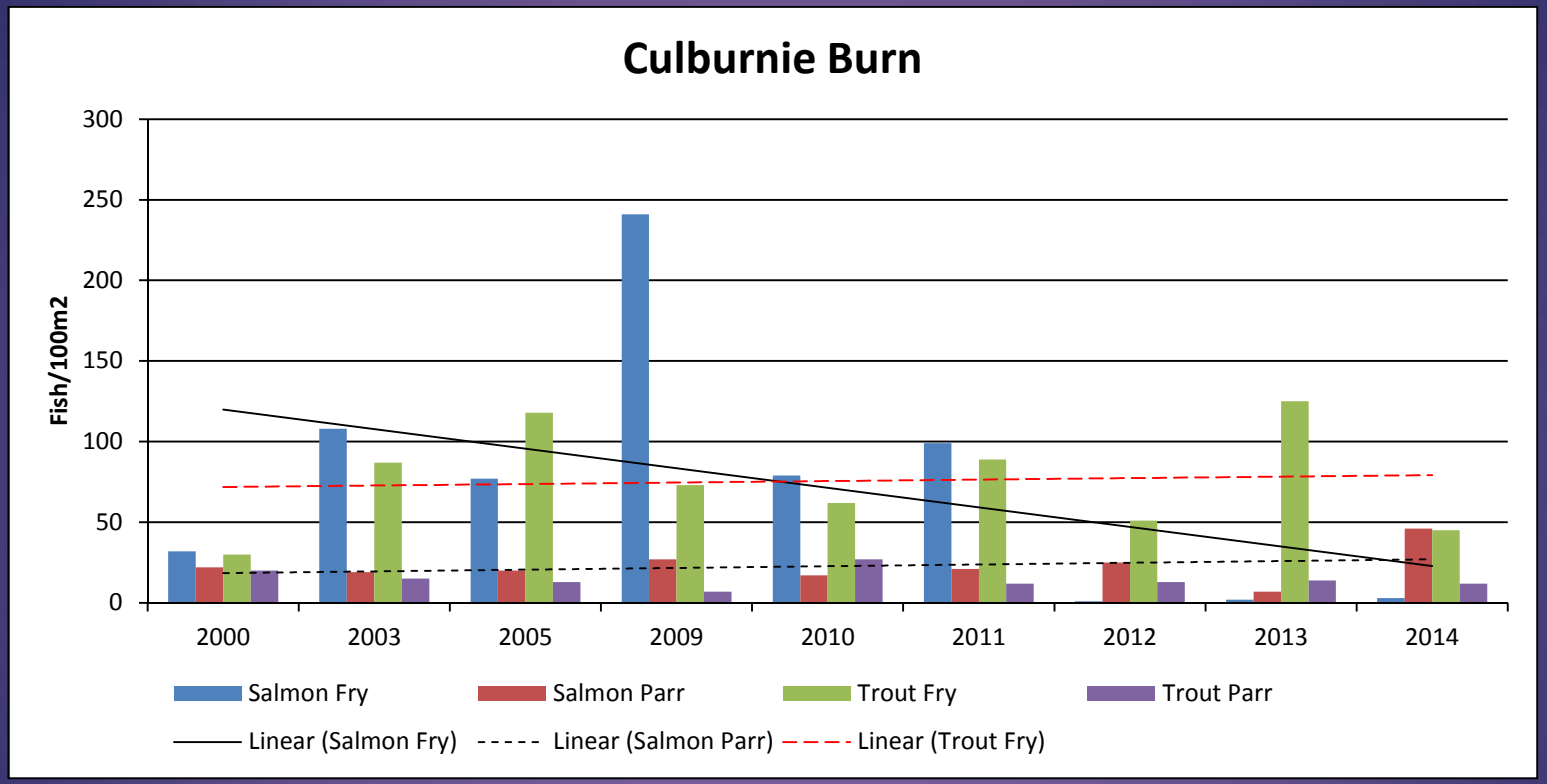
Beauly



- Lower River Beauly, major tributary.
- Trend for increasing salmon and trout fry densities, together with increasing salmon parr densities

Routine Monitoring:

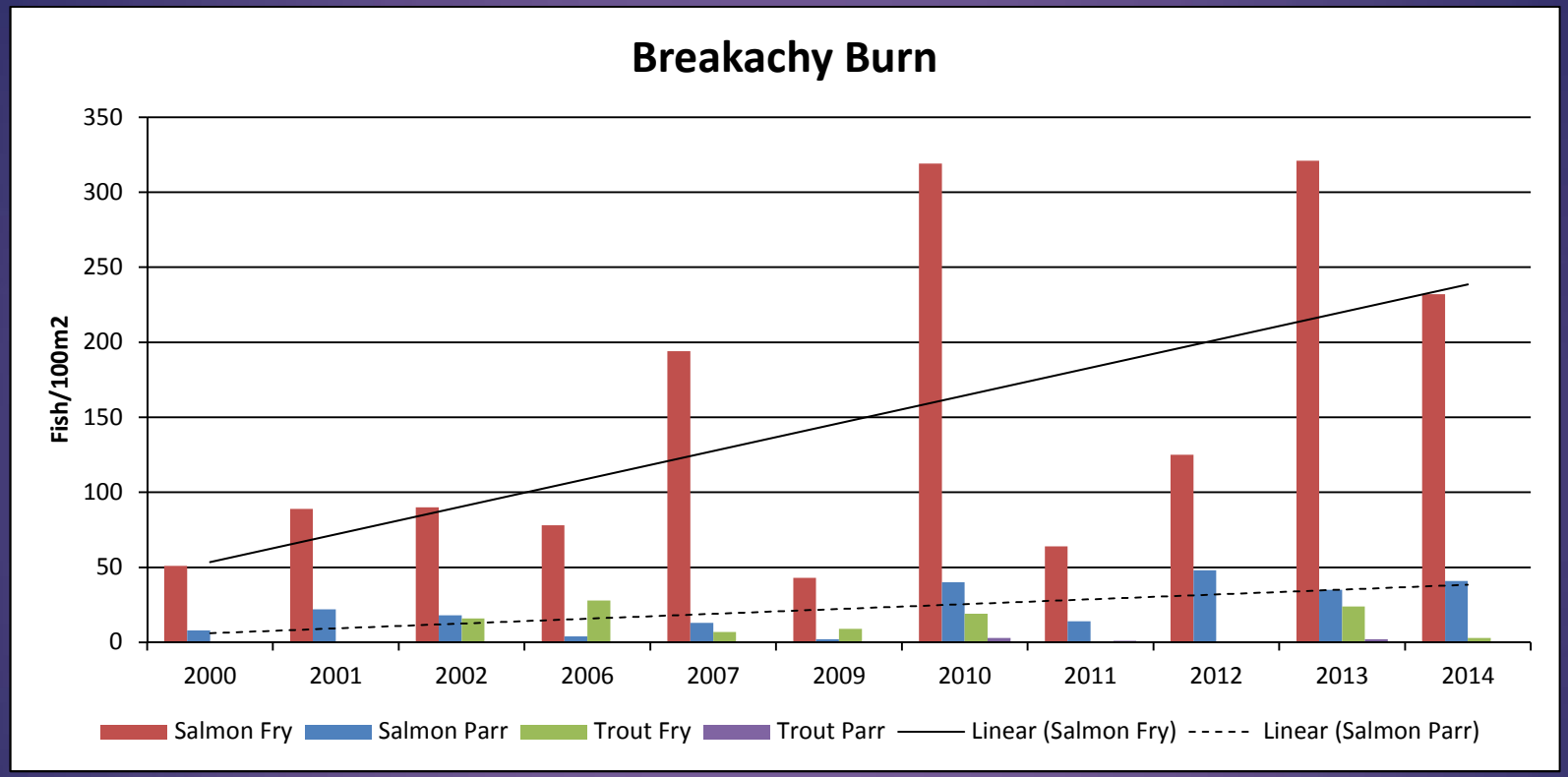
Beauly



- Tributary of Bruiach Burn.
- Stocked by Lower Beauly Syndicate until 2009.
- Densities of salmon fry crashed since 2011.
- Is Culburnie a natural spawning burn for salmon?
- Salmon parr densities have remained very stable.

Routine Monitoring:

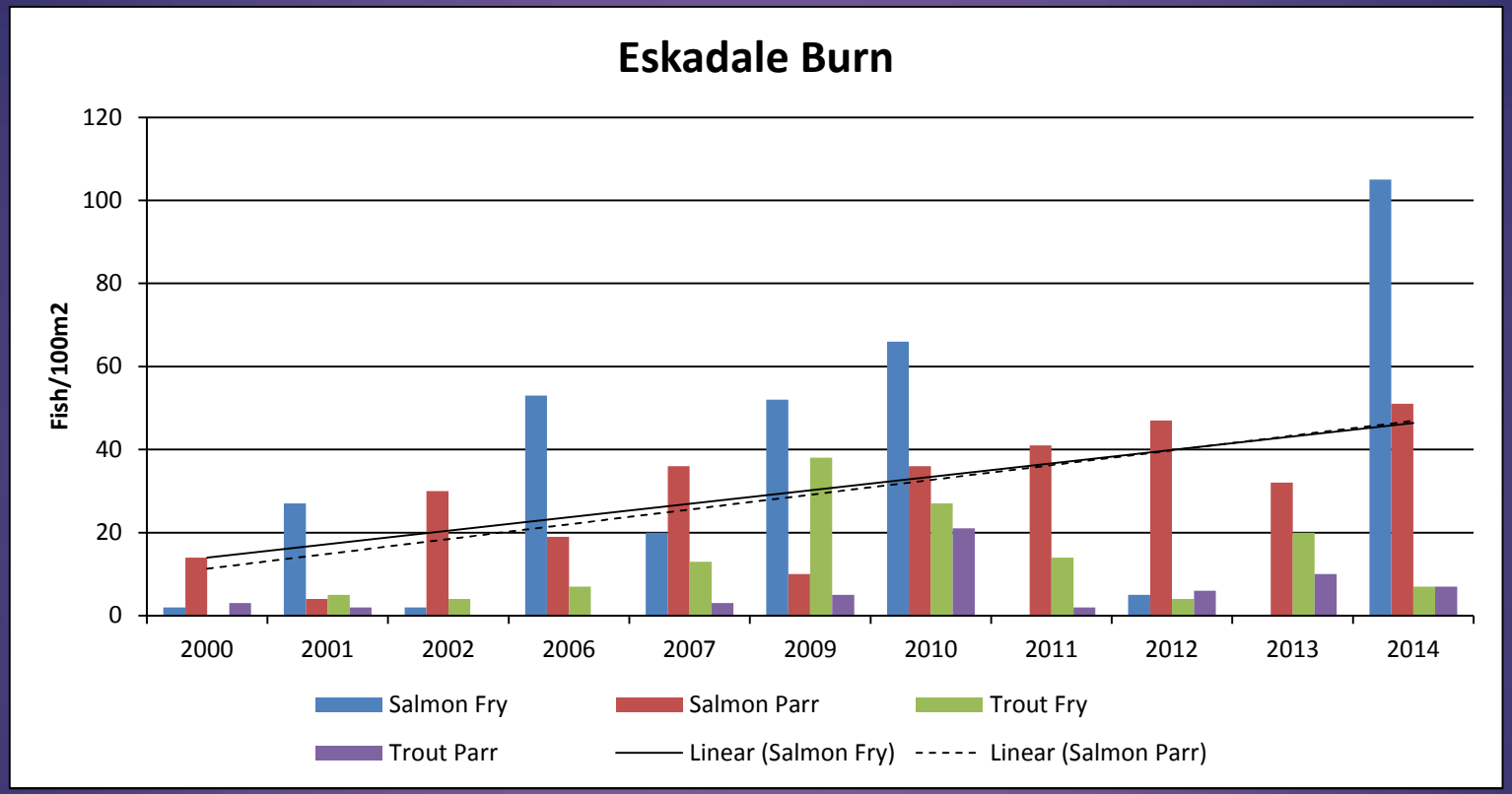
Beauly



- The only tributary of any size between Kilmorack Dam and Aigas Dam.
- Clearly well utilised in 2013.

Routine Monitoring:

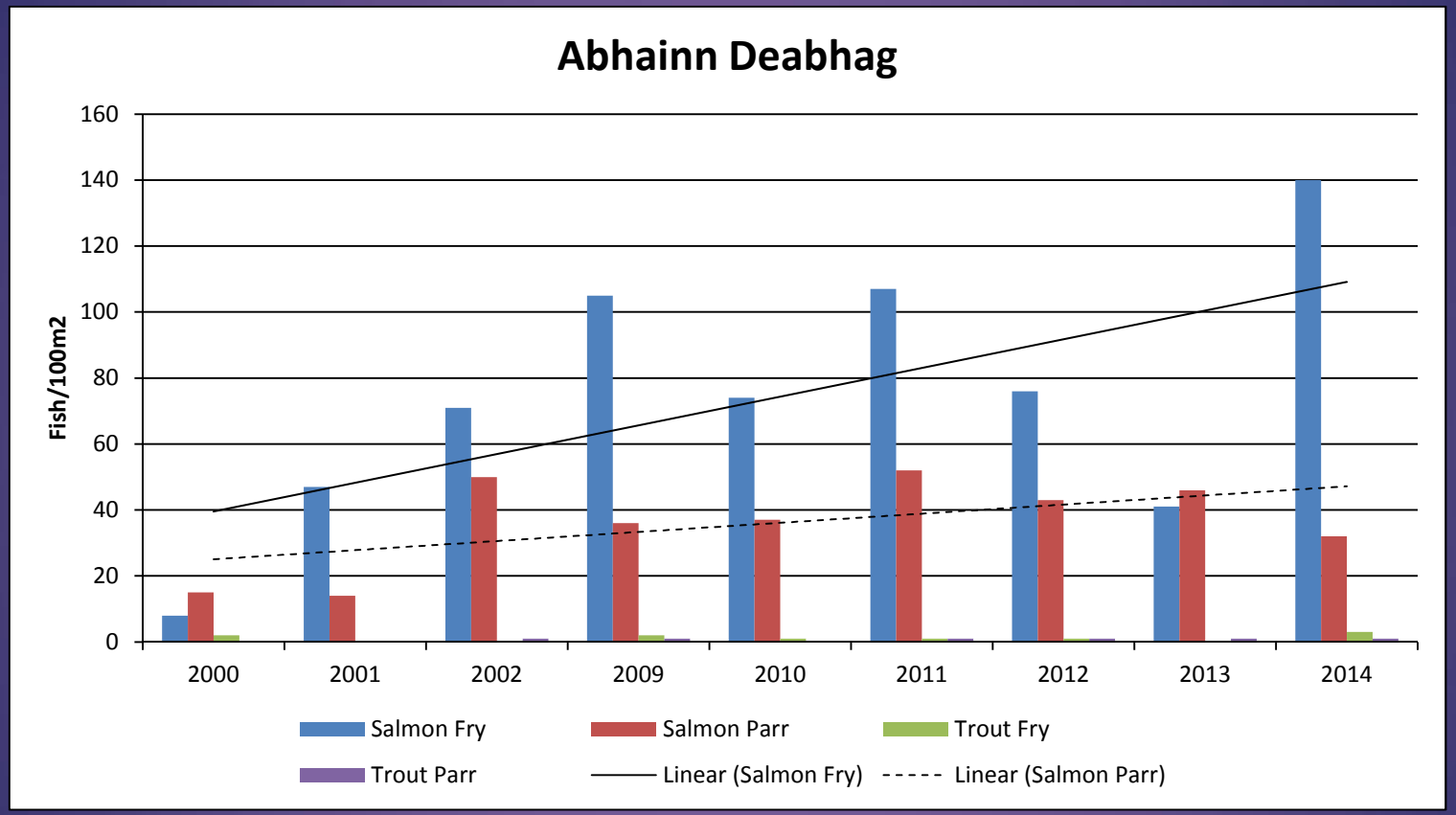
Beauly



- Upper Beauly Tributary.
- Highest ever density of salmon fry following two years of zero counts.

Routine Monitoring:

Beauly



- Upper River Glass.
- Fairly consistent in terms of salmon parr, highest recorded densities of fry this year.

Routine Monitoring:

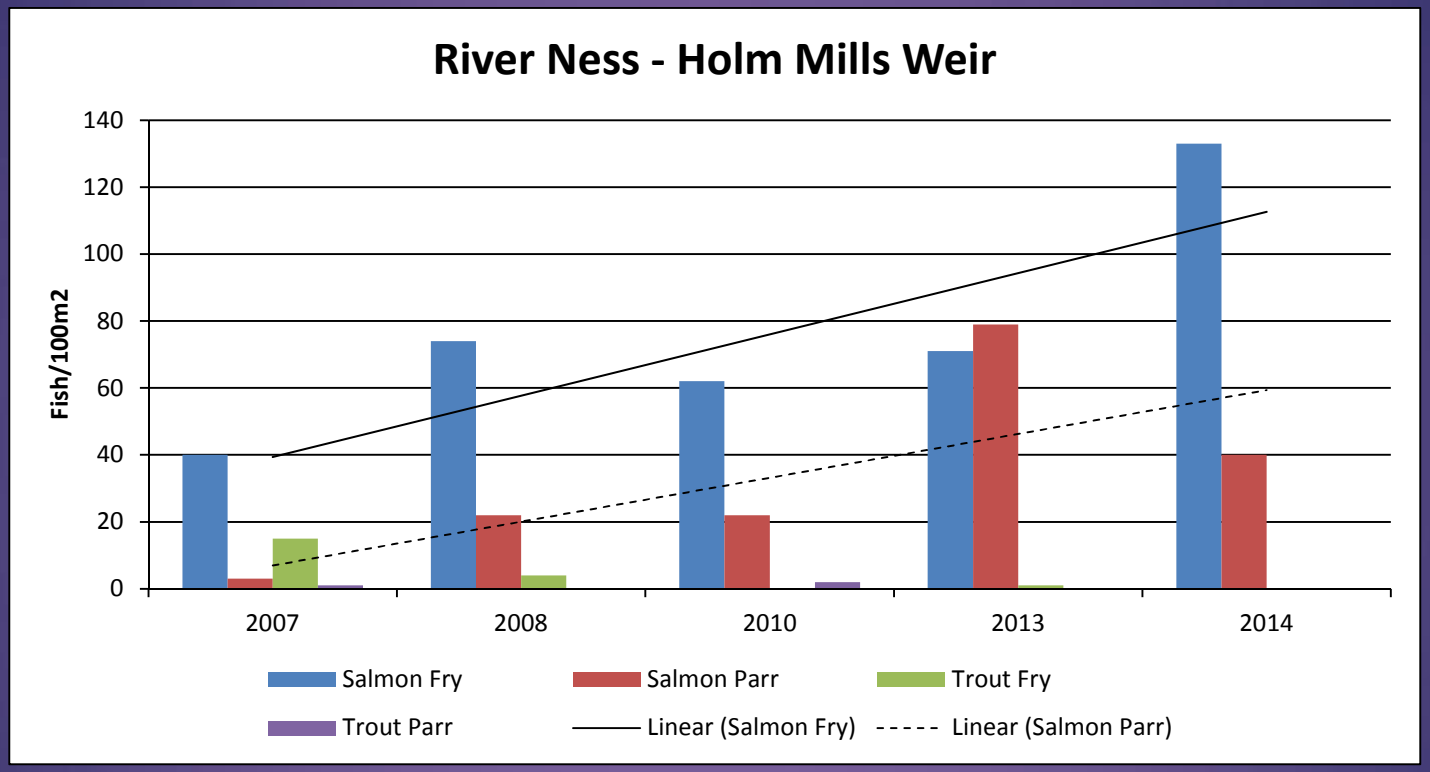
Beauly

Site Code	Location	Salmon fry/100m²	Salmon parr/100m²	Trout fry/100m²	Trout parr/100m²
BE1	US Ministers	26	6	0	0
BE2	US Fly Pool	132	7	0	0
BE3	L/B Cruives	12	24	0	0
BE4	US New Pool	59	45	0	0

- Beauly main stem sites.
- Figures in red are results that are considered lower than expected given the quality of habitat fished.
- BE1 has never been very productive – very close to tidal limit – could explain lack of fry but not parr.
- BE3 – disappointing in terms of fry but habitat more conducive to parr production.
- Other results Okay.

Routine Monitoring:

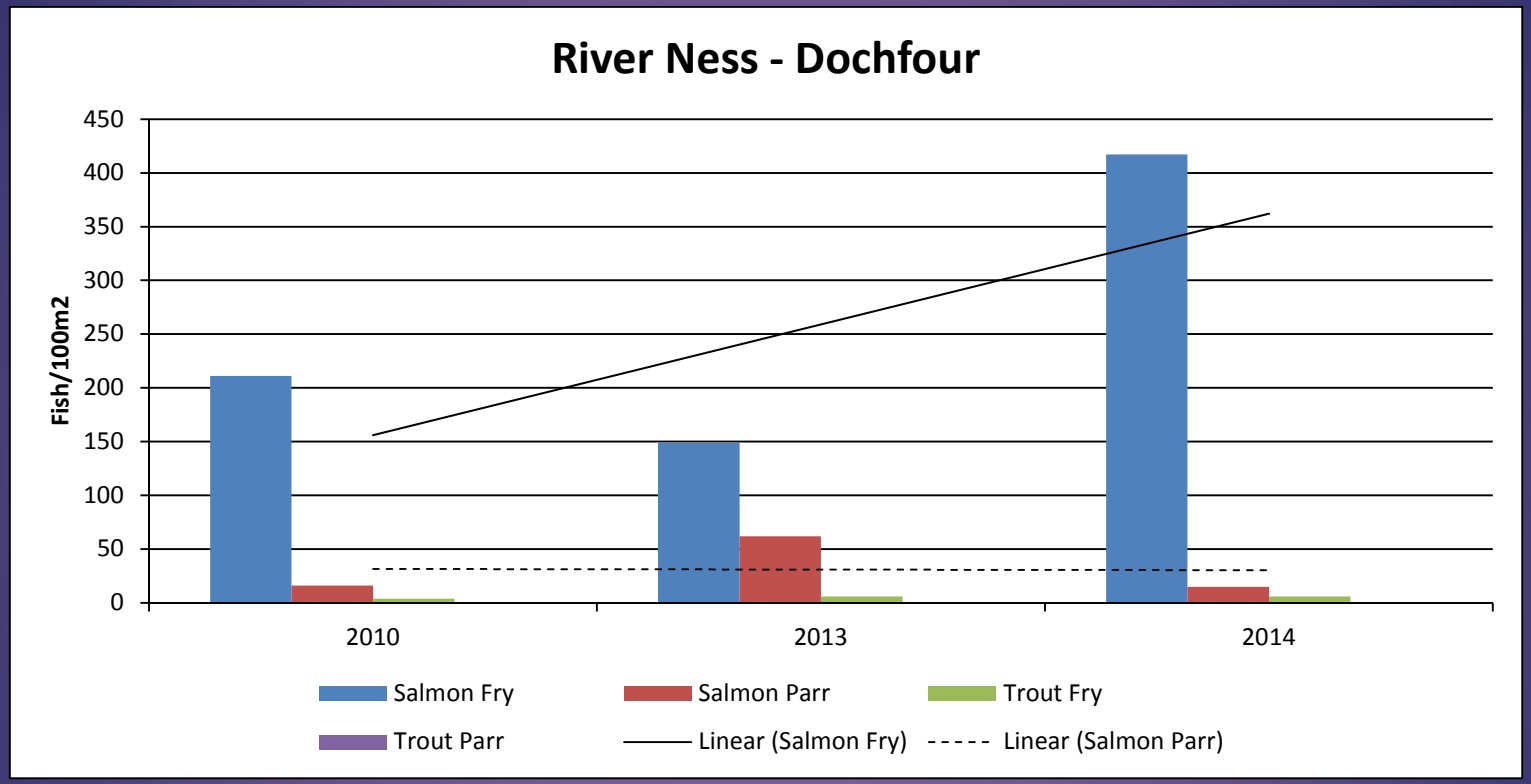
Ness



- Salmon fry densities at Holm Mills were the highest recorded for
- Overall trend for increasing fry and parr densities.

Routine Monitoring:

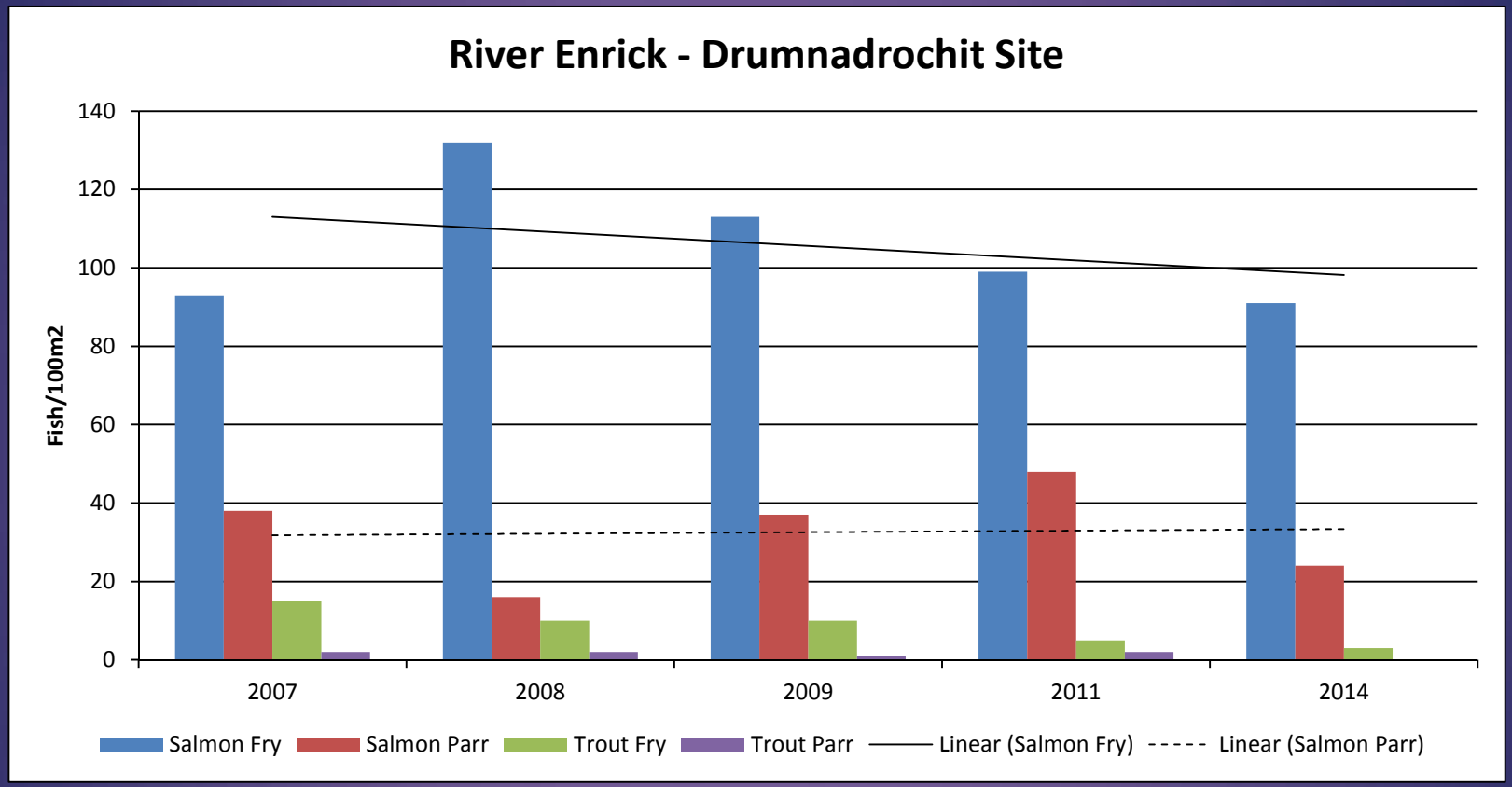
Ness



- Salmon fry densities at Dochfour were the highest ever observed for both the Ness and Beauly catchments (417 per 100 m^2).
- Although slightlylower than previous years, salmon parr density (greater than one year old) was also encouraging.

Routine Monitoring:

Ness



- Perceived reduction in salmon fry density, but still good.
- Parr density more level and slight upward trend.

Fish Rescues:
Electric Burn

- SEPA reported that the old lade at Whin Park, also known as the 'Electric Burn', was running dry.
- Large numbers of fish dead including sticklebacks, eels and lamprey
- The Ness Board and Trust responded by carrying out a fish rescue and a long-term management solution is being discussed.

Plans for Future Period

In addition to delivery of its core monitoring programmes, the Ness & Beauly Fisheries Trust Intends to progress the flowing key objectives over the coming year:

- Efficiently and effectively manage the Trust through full compliance with all statutes, compliance with the RAFTS Code of Governance for Trusts, provision of effective administration, ensuring sound financial control and being a good employer;

- Ensure the delivery of ongoing projects, including EU Funded Pearls in Peril LIFE+ Project, the Upper Garry Restoration Project and the Ness and Beauly Invasive Plant Project; and

- Develop a new business strategy to diversify income streams (through contract work and charitable donations) and secure the financial future of the Trust.

Any Questions?