

# The Ythan District Salmon Fishery Board

## Ebrie Burn Habitat Restoration Proposals 2024

It was agreed that the Don DSFB would undertake annual habitat walkover surveys to identify areas for potential restoration as part of the Ythan SLA. These would include short term techniques such as ranunculus clearing and gravel jetting at spawning sites, identifying new and monitoring existing large woody structures, or identification of sites for potential medium to long term restoration projects to create climate and catchment resilience where tree planting, large woody structures, buffer strip, natural flood management techniques and appropriate livestock watering solutions etc could all be considered. This document forms the basis for the latter with a focus on the Ebrie Burn for the establishment of medium to long term projects.

In early 2022 Scottish Government produced a Wild Salmon Strategy, stating that "there is sadly now unequivocal evidence that populations of Atlantic salmon are at crisis point". Salmon numbers returning to the Scottish coasts are now around a third of what they were in the 1970's and 2021 saw the worst Scottish salmon catches on record. The River Ythan has been graded as a Category 3 River under 'The Conservation of Salmon (Scotland) Regulations 2016'. A category 3 grading defines the stock as unsustainable, and puts legislation in place prevent exploitation. With exploitation on the Ythan at zero, other measures are required to protect this declining stock.

As a statutory body charged with the protection of Atlantic salmon and sea trout stocks within its district, the Ythan District Salmon Fishery Board (Ythan DSFB) has a duty to ensure that there are no significant adverse impacts upon the populations of these species. It also represents, co-ordinates and promotes the interests of salmon and sea trout fisheries within its district and undertakes such steps as may be desirable for the protection, preservation and development of these fisheries whilst having regard for the environment and other fauna and flora. The Ythan DSFB are committed to restoring and improving the habitat available to support populations of juvenile and adult Atlantic salmon within the catchment.

### **1. Site information**

The Ebrie Burn is a small watercourse which flows between the Buchan and Formartine districts of Aberdeenshire. The Ebrie Burn forms from drainage ditches to the northwest of Ebriehead, in the rolling hills 2km south of Maud. It flows southeast passing the west of Nethermuir and then south picking up numerous small tributaries before falling into the River Ythan at Bridgefoot, 3km northwest of Ellon. The Ebrie burn is 8½miles (14km) it has approximately five smaller tributaries that drain into the Ebrie, largest being Burn of Fortree that enters the on the upper part of the Ebrie, a short distance below the village of Auchnagatt.

The Ebrie is known to support populations of Atlantic salmon, sea trout, brown trout, brook lamprey and eels. The Ebrie historically had excellent numbers of juvenile and adult Atlantic salmon utilising the habitat available, however due to changes in flow regime and habitat quality along with the decline in returning adult salmon numbers in recent years this is no longer the case.

Over recent years the Ebrie like many other lowland tributaries has been under pressure from several factors, which can influence habitats and water levels dramatically. Extensive agricultural drainage has resulted in water leaving the catchment quicker and reducing storage capacity of the surrounding

# The Ythan District Salmon Fishery Board

## Ebrie Burn Habitat Restoration Proposals 2024

land, reducing the ability to buffer periods of drought. Climate change has also resulted in more frequent flooding events which impact on the water environment through deterioration from eroding banks and loss of instream habitat.

Options to restore some of these natural processes and habitats are identified in this document. Any river restoration options agreed in principle by the landowner and taken forward, (e.g. large wood structures, bank stabilisation) will be subject to detailed design by specialists before implementation takes place.

### **2. *Habitat walk over survey undertaken September 2023.***

An assessment of potential restoration options was made during a habitat walkover survey on the Ebrie Burn on the 27th of September 2023 between the reach of Glenebrie Bridge Grid Ref NJ93480/39920 down to Drumwhindle Bridge NJ93310/35830

A walk over survey established that the reach was impacted by examples of active erosion and deposition of substrate, land drainage from agriculture, a lack of complex riparian vegetation including native broadleaved trees and areas over shading, a noted absence of instream cover for juvenile and adult salmon along with the absence of different grade size gravel for fish spawning.

It is assumed that increasing frequency and intensity of high flows in the Ebrie burn catchment in recent decades have led to hydrological conditions that now regularly mobilise substrates, observed during the walkover survey and from studying recent satellite imagery of the catchment. These conditions can increase the likelihood of redd washout, reduces potential fish cover and creates substrate uniformity within the channel negatively impacting upon Atlantic salmon populations.

### **3. *Suggested restoration techniques.***

The following techniques could be used to restore the habitat at the Ebrie site.

The surveyed reach was split into three sections which could be tackled separately or ideally in combination.

- Coppice and remove individual trees to reduce tunnelling effect, which will allow light into the stream.
- Installing coppiced material to pinch points, which will narrow parts of the over widening channel, to create riffles and glide features, offering fish cover, temperature refuges as well as sorting substrates for spawning.
- Planting of native broadleaved trees in pockets using biodegradable tubes with stakes, this would provide essential shade reducing water temperatures, provide nutrients, stabilise riverbanks and eventually create natural large wood structures.
- Reprofile streambank to a lesser grade to prevent further erosion from occurring.
- Introduction of spawning gravels to glides and riffles created by other means above.

# The Ythan District Salmon Fishery Board

## Ebrie Burn Habitat Restoration Proposals 2024

- Clear non-native conifers 20m back from river edge to conform with (FLS guidelines), Hand fell trees 5m or so from the stream embankment, trees further back from riverbank can be knocked over with plant to retain root plates for use as in-river Large Woody Structure (LWS).
- Creation of wader scrapes, to enhance different types of invertebrates, vegetation, and wading bird species.
- Where LWS have fallen into the stream naturally, these would be left in situ, and secured in place to prevent them washing downstream and potentially impacting on infrastructure.

Chosen section below for habitat improvement opportunity, Grid Reference NJ93320/39760 down to NJ93245/38290. Combined length of both sections measuring 1.70 kilometres or (1.05) miles.



Section 1, NJ 99320/39760 to NJ 93455/39045. Length 1km, burn flows right to left.

### Restoration Options.

- Possibly up to 9 LWS installed to create further cover – plant required to install.
- Coppice and remove individual trees to reduce tunnelling effect, which will allow light into the stream.
- Planting of native broadleaved trees in pockets using biodegradable tubes with stakes, along approx. 1km of riverbank on this section, this would provide essential dappled shade reducing water temperatures, provide nutrients, stabilise riverbanks and eventually create natural large wood structures.
- Clear non-native conifers 20m back from river edge to conform with (FLS guidelines), Hand fell trees 5m or so from the stream embankment, trees further back from riverbank can be knocked over with plant to retain root plates for use as in-river LWS.
- Reprofile streambank to a lesser grade to prevent further erosion from occurring.
- Gravel augmentation, to enhance spawning.
- Creation of wader scrapes, to enhance different types of invertebrates, vegetation, and wading bird species.

### Restrictions on section 1

- Lack of large stone on site for securing LWS.

# The Ythan District Salmon Fishery Board

## Ebrie Burn Habitat Restoration Proposals 2024

- Possible rough pasture livestock grazing during summer months.
- The Formartine and Buchan way, this track is very close to the stream, care to be taken to prevent erosion.



Section 2, NJ 93455/39045 to NJ93245/38290. Length 0.8km, burn flows right to left.

### Restoration Options.

- Possibly up to 8 LWS installed to create further cover – plant required to install.
- Planting of native broadleaved trees in pockets using biodegradable tubes with stakes, along 0.8km of this section, this would provide essential shade reducing water temperatures, provide nutrients, stabilise riverbanks and eventually create natural large wood structures.
- Gravel augmentation, to enhance spawning.
- Creation of 3 wader scrapes, to enhance different types of invertebrates, vegetation and wading bird species.
- 20-meter buffer zone to be created for tree planting

### Restrictions on section 2

- Lack of wind blown trees for LWS at site.
- Lack of large stone on site for securing LWS.
- Possible rough pasture livestock grazing during summer months.

# The Ythan District Salmon Fishery Board

## Ebrie Burn Habitat Restoration Proposals 2024



Section 3, Auchnagatt Bridge NJ 93255/41650 to NJ 93550/40350. Survey length 1.5km, burn flows right to left.

This survey area of the Ebrie burn, commencing from Auchnagatt bridge downstream to a length of 1.5km. It is a very complex section with a hydro lade, depleted reach of the Ebrie burn, three bridges in proximity and the Formartine and Buchan pathway runs directly through the section. I have identified two areas for habitat restoration proposal, which you can see in the map above in yellow. The top section measures 400ms and further downstream is another small area measuring 300m. Restoration options below.

### Restoration Options.

- Possibly up to 4 LWS installed to create further cover – plant required to install.
- Planting of native broadleaved trees in pockets using biodegradable tubes with stakes, along 2 sections chosen.
- Gravel augmentation, to enhance spawning.
- Creation of wader scrapes, to enhance different types of invertebrates, vegetation, and wading bird species.
- Buffer zone to be created for tree planting.

### Restrictions on section 3

- Lack of wind blown trees for LWS at site.
- No visible large rock for LWS on site.
- Active agriculture land on both banks
- Flood bank built to protect the Formartine and Buchan way.
- Possible issues for LWS concerning bridges.

### Contact information.

Jim Kerr, Senior Fisheries Officer with the Don District Salmon Fishery Board.

[jim@riverdon.org](mailto:jim@riverdon.org) or 07836645510

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