

YTHAN DSFB HABITAT IMPROVEMENT PLAN 2023

Draft for Approval



Introduction

This report is designed to illustrate opportunities for the delivery of restoration techniques on the Ythan catchment through the Ythan and Don SLA during 2023. Based on restoration techniques delivered in previous seasons by the Don DSFB staff through the SLA. Four key techniques and locations have been identified for restoration. These include but are not limited to the following.

1. Willow bank Restoration on the Ebrie Burn
2. Large Woody Structures on the Fyvie Estate
3. Ranunculus Weed Cutting Ebrie Burn
4. Habitat Surveys

We have selected the following activities to promote habitat restoration at these locations and to build on existing activities. However, we fully appreciate that there may be other priorities, such as gravel jetting, or coordination of contractors such as the example from this year with site visits to the Bronie Weir removal which could be considered for this SLA activity.

1. Willow Bank Restoration.

The site on the Ebrie Burn is only a short distance above where 8 salmon redds were identified in November 2022, 4 of these redds were directly below the new willow bank repair carried out in March 2022, Figure 1 & 2. To keep the habitat in good order for returning adult spawning fish, further remedial work would be beneficial. The bank upstream requires further repair because of areas of collapse and undermining. Large sediment deposits are entering the watercourse and settling at the salmon redd sites below. Figure 3 & 4.



Figure 1, Willow bank repair on the Ebrie, March 2022.



Figure 2, Willow growth after only 7 months from completion.



Fig 3, 10m section on the Ebrie that has become unstable and undermined with a section now collapsed.



Figure 4, Ebrie burn, collapsed section below.

Site Information

| River/Tributary | Site Name | Grid Reference | Length of Repair | Job Description |
|-----------------|------------|----------------|------------------|--|
| Ebrie Burn | Glen Ebrie | NJ93590 40270 | 10 meters | Drive willow posts along face of bank erosion, weave willow canes between. Fill between bank and weave with woody brush. Estimated time 6-man days 2 staff |

2. Large Woody Structure on the Fyvie Estate

Fallen trees have been identified on the Fyvie Estate where there are concerns that they may be restricting the passage of fish. Most natural structures such as this do not typically pose an issue for fish passage but may require monitoring.

These natural structures are what most fisheries managers are now trying to replicate in the form of Large Woody Structures (LWS). The installation of LWS is a recognised and accepted salmonid management technique designed to introduce habitat and flow diversity, provide cover and protection from predators, and create temperature refuges as well as act as nutrient traps that benefit of salmonids at all life stages.

We would advise that rather than seek to remove these structures that we use the time allocated to this task to assess these structures in advance of key migration periods i.e., smolting and spawning to review the structures and ensure that there are no issues for fish passage. We would also seek to remove any less porous manmade materials from these structures such as fencing materials, plastics etc, which may increase the risk of the structure becoming an obstacle to fish migration.

We would like to offer the Ythan DSFB members an opportunity to see some of these artificial LWS in situ on the Dee catchment to help illustrate the value of LWS in a catchment.

In total five separate potential obstacles have been identified, Figure 5. It's anticipated that by the time these works take place, the structures will have increased in complexity in terms of the challenge posed to fish passage and there may also be new structures within this reach. Therefore, we have allocated resources accordingly to this task.



Figure, 5 Fallen trees on Fyvie Estate.

Site Information

| River/Tributary | Site Name | Grid Reference | Job Description |
|-----------------|--------------------|----------------|--|
| Fyvie Estate | Opposite home farm | NJ 76322 40245 | Monitor LWS at key periods of fish migration to ensure passage, intervene where required. Estimated man days x 2 staff 6 |

3. Ranunculus Cutting

The removal of this aquatic weed when targeted at key points within the catchment can help improve the availability of key habitat types, such as spawning substrate. The Ythan catchment and the Ebrie Burn suffer from an excise build-up of fine sediments from existing land use and underlying geology. In the Ebrie Burn coupled with historical canalisation, this results in a very uniform channel with limited habitat diversity and poses problems for suitable spawning substrates, Figure 6-9.

Ranunculus impacts upon the flow, which is slowed by the plants which in turn causes mobilised sediments moving through the watercourse to drop out of suspension and gather on the stream bed and around these plants. This results in the stream bed being smothered out with very fine sediment restricting the essential oxygenated water reaching invertebrates or salmon or trout eggs buried in potential spawning gravels. It also benefits the plants by creating more suitable habitat for which to colonise resulting in their spread throughout the watercourse.

The cutting and clearing ranunculus are activities targeted at suitable spawning substrate on the Ebrie Burn, particularly those at risk of being impacted by the plant as described above. Please see images of works carried out in 2022.

We recognise that this approach only deals with the problem and doesn't tackle the issue in the longer term. A potential longer-term solution would be the development of a tree planting programme along the banks of the Ebrie. The primary aim of this approach would be to shade sections of the burn where spawning locations have been identified, thereby reducing the potential growth of ranunculus at these locations. Identifying key locations for planting trees to create shaded reaches could be undertaken during walk over surveys by Don DSFB staff.

Figure 6, Before cutting



Figure 7, After cutting





Figure 8, Before cutting



Figure 9, After cutting

Site Information

| River/Tributary | Grid Reference | Activity | Job Description |
|-----------------|--|--------------|--|
| Ebrie Burn | Between NJ 93590 40270- Glenebrie to NJ 93300 35820- Drumwhindle Bridge | Weed Cutting | Cut Ranunculus at key spawning locations to prevent fine sediment smothering eggs. 5-man days allocated for completion |

4. Habitat Surveys

To date habitat surveys have been focused upon part of the Ebrie catchment with the aim to identify situations which require restoration interventions from the Don DSFB staff, namely ranunculus clearing and gravel jetting at spawning sites. These surveys have also enabled staff to also target ad hoc stands of INNS plants such as HB.

However, it would be more beneficial if these INNS plants could be identified and then shared with the River Ythan Trust to allow Scottish Invasive Species Initiative staff to undertake control with volunteers.

Habitat walkover surveys could be undertaken to identify areas for potential restoration 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.

Site Information

| River/Tribuatry | Grid Reference | Activity | Job Discription |
|----------------------------|----------------|-----------------|--|
| Ebrie Burn and other tribs | NA | Habitat Surveys | Targetting the Ebrie to complete habitat surveys, additional tribs to be included. 3 man Days allocated. |

Summary

This proposal for habitat restoration works is based upon existing improvements made to date. It has been prepared on the basis that works for the year 2023 and has be allocated the same 20-man days as allocated in the Ythan SLA agreement for 2022. The number of days proposed for each activity are estimated, if tasks are completed earlier than scheduled, time will be carried over onto the next activity, until all activities are completed..

Timing of Works

1. Willow bank Restoration on the Ebrie Burn - (February-April)
2. Ensuring free passage of fish from fallen trees on the Fyvie Estate - (June)
3. Ranunculus Weed Cutting Ebrie Burn - (July-August)
4. Habitat Surveys - (August)

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