

HADDO LAKE AND UPSTREAM FISH MIGRATION.

The Kelly Burn which flows through the lake in the Haddo Country Park and its two upstream tributaries, the Raxton and Keithfield burns, comprise the fourth longest tributary system on the Ythan, being just over 26km long (16 miles.) and joins the Ythan 3km (1.85 miles) below Methlick.

Haddo Lake.

The lake, mere 2.2km upstream of the Kelly Burn junction with the Ythan, had, and continues to have two outfalls, the north central weir and the north east weir.

From information available to us, it appears that the north central outfall has probably never been passable for upstream fish migration and remains virtually the same today.



NORTH CENTRAL OUTFALL WEIR. 1986

The 4th Marquess of Aberdeen, had, before his death in 1974, set in motion negotiations to transfer part of Haddo Estate grounds and the lake to Grampian Regional Council to form a country park. His wishes were fulfilled when, in 1979, the Haddo Country Park was created.

At that time the north east outfall had no fish passage provision, the outfall had a system of stop logs in place that prevented fish migration.

In the late 19th and early 20th century, when the estate had very extensive sporting interests, and employed three or four full time fishery bailiffs, it is likely that these stop logs were removed in autumn to allow upstream fish migration.

A fish pass exists (still to be evaluated) further upstream on the Keithfield Burn, adjacent to Keithfield Lake on Haddo Estate; this fish pass may possibly have been part of the estate's strategy regarding fish migration in the past.



NORTH EAST OUTFALL, SHOWING STOP LOG SYSTEM. 1986.

In 1986, following the introduction of the Reservoirs (Scotland) Act, Grampian Region were required to have the lake inspected to ensure its safety. The lake and dam wall were found to be unsatisfactory, and the dam wall and north east outfall underwent significant structural changes in 1988.

This resulted in the north east outfall being widened significantly and made water levels very shallow, such that upstream fish passage became almost impossible. Electro fishing in the period 1996 to 2011 found no juvenile salmon above the lake, but small numbers were found below the lake on a number of occasions, most recently in 2011 and in 2014 during the fish rescue operation.



NORTH EAST OUTFALL. APRIL 2014



NORTH EAST OUTFALL WEIR. APRIL 2014.

(Also shows side view of small fish pass installed around 2002/2003, as part of the Ythan Project.)



DOWNSTREAM VIEW OF WEIR AND SMALL FISH PASS. 2003.

(This was a year with exceptionally low water levels.)

PREVIOUS ATTEMPTS TO RESOLVE THE PROBLEM OF UPSTREAM FISH MIGRATION.

Angler Representations.

- In 1989, the year after the completion of the modifications to the north east outfall, an Aberdeen and District Angling Association member, John Chandler of Newburgh, raised his concerns about the problems of fish passage at the site.
- Following the installation of the small fish pass, I contacted Aberdeenshire Council in writing on a number of occasions from 2003 onwards expressing my concerns, but with no successful outcome.

Scottish Environment Protection Agency (SEPA) Nationwide Fish Passage Restoration Project. 2008/2009.

- The Ythan District Salmon Fishery Board asked that the Haddo Lake outfall be included in the study – this was carried out in September 2009 and a report delivered in June 2010.
- Without going into great detail, the proposal was to install an Alaskan “A” prefabricated aluminium fish pass with additional weirs. The fish pass would have been similar in appearance to those installed on the Coy Burn and Culter Dam in the Dee catchment.
- The report was passed to the recently formed River Ythan Trust in summer 2010 to take the project forward.
- A great deal of work was carried out by the trust establishing costs, programme of works etc, and had the application complete in November 2010.
- Unfortunately SEPA’s funding goal posts moved, and the project, budgeted at over £60k, had to be abandoned.

HADDO LAKE OUTFALL PROJECT 2013/2014.

Following completion of the Ythan and tributaries habitat surveys in 2012, and collation of all information in spring 2013, we decided to look into other options to solve the fish migration problem.

Aberdeenshire Council Landscape Services Department.

- We contacted the Landscape Services Officer for the Country Park, Brian Shand, in late summer 2013 and met on site to discuss the matter in October of that year.
- We considered the original proposal to install an Alaskan “A” fish pass and weirs, however Mr Shand was of the view that the appearance of the equipment was not in keeping with the natural appearance of the falls. In addition, the budget cost in the region of £60k was not possible for Aberdeenshire Council to fund.
- Mr Shand advised that there was a small amount of funding for the financial year 2014/15 that could possibly be made available if an alternative solution could be found.
- Part of this funding was earmarked to deal with the severe erosion of the right bank downstream of the lower fall which was threatening the stability of the recently installed path in that area.

Search for an Affordable Solution.

- The SEPA Fish Passage Restoration Report of 2010 had suggested that in addition to the shallow water depth immediately below the north east outfall weir, the two falls immediately downstream also possibly presented a problem for upstream fish migration – hence the suggestion to use the Alaskan “A” fish pass.
- We, and the biologist who carried out our habitat surveys in 2012, (did not include a detailed survey of the falls) were of the view that in elevated water levels, fish, especially salmon, may be able to ascend both falls.
- We were confident that we could increase water levels between the top of the upper fall and the lake weir by the installation of a number of small weirs with suitable fish passage notches, but further investigation of the falls was necessary.



UPSTREAM VIEW OF LOWER AND UPPER FALLS. MAY 2012.

(Photo taken during habitat survey.)

Full Dimensional Surveys and Fish Passability Studies.

- Fortunately Haddo Estate Office had a file that contained copies of the 1986 reservoirs report and recommendations complete with the design drawings of the alterations to the north east outfall; from these we produced drawings to assist with the surveys.
- Within our trust and volunteers, we were fortunate to have the necessary skills to carry out the full dimensional survey over the 100m long site and produce accurate drawings.



**TAMSIN MORRIS CARRYING OUT FISH PASSABILITY STUDY. UPPER FALL. APRIL 2014.
(Aberdeen and District Angling Association kindly gave us the use of their boat.)**



LOWER FALL. APRIL 2014

Fish Passability Study.

- The fish passability study on the two falls was carried out under the leadership of Tamsin Morris of “Walking the Talk”, Tarves, again on an unpaid volunteer basis.
- The conclusion was that the upper weir would be unlikely to be a serious problem for salmon upstream migration, given typical autumn elevated water conditions – some minor alterations could be made to improve trout upstream migration. The lower fall study conclusion was that under typical autumn elevated water conditions the fall was unlikely to present serious problems for either salmon or trout.

Design, Drawings, Budget Costs, SEPA CAR Licence, Construction and Method Statement

Documents

- Having satisfied ourselves that significant improvements could be made regarding fish migration without the need to install a very expensive Alaskan “A” fish pas, we again used our in house skills to produce the detailed design drawings for the installation of pre weirs and existing weir modifications.
- We then produced budget costs based on the premise that all labour and almost all plant would be provided by the trust volunteers, provided net cost of materials , fuel and transport costs be funded by Aberdeenshire Council.
- Aberdeenshire Council were receptive to these proposals so we then on their behalf, met with SEPA and produced the Controlled Activities Regulations Licence (CAR licence) applications which included method statements, construction and environmental benefit abated charges documents etc.
- In due course SEPA granted the CAR licence allowing the project to proceed.

Contract Arrangement.

- Since the River Ythan Trust was not a contractor as such, registered with Aberdeenshire Council, we could not be awarded the contract; however we could work as volunteers for a registered contractor.
- Fortunately, Jim Adie, one of our directors is also a joint owner of Inverurie Precast Ltd, and following costs provided by them on the same basis as our budget costs (labour free of charge mainly by volunteers, plant such as tracked digger, Manitou, mixer and security fencing provided at no cost by Inverurie Precast Ltd, pump hire, materials, fuel and mileage costs being reimbursed at cost price) the contract was awarded to them.

Construction Phase.

- Work period. 21st August – 12th September 2014. (16 days during this period working on site.)
- Haddo Estate gave permission to access the site via various tracks within their grounds; this minimised the disruption of the working of the country park.
- Haddo Estate also gave access to, and provided free of charge, the 25 – 30 tonnes of rock and boulders required for parts of the work.
- The Ythan District Salmon Fishery Board bailiff, Sandy Milne, assisted by volunteers, carried out the fish rescue procedure, to enable the north east outfall to be blocked off.



WEIR BLOCKED OFF AND PUMP OPERATING TO BYPASS THE WORK AREA.

(Work area 100m long.)



UPPERMOST PRE WEIR UNDER CONSTRUCTION.



UPPERMOST PRE WEIR COMPLETE.



SECOND PRE WEIR NEARLY COMPLETE.

(Jim Adie and Sandy Reid at work.)



SECOND PRE WEIR AND BOULDER PLACEMENT BELOW.



DOWNSTREAM VIEW. WEIRS COMPLETE.

Erosion Repairs.

- As part of the project we undertook to deal with severe erosion on the right bank below the lower fall using boulders and stones etc.



VIEW DOWNSTREAM OF LOWER FALL, SHOWING SERIOUS EROSION OF RIGHT BANK.



BANK REINFORCEMENT NEARLY COMPLETE.

(Plant operators, Jim Adie and Sandy Reid.)

In Operation. 12th October 2014.



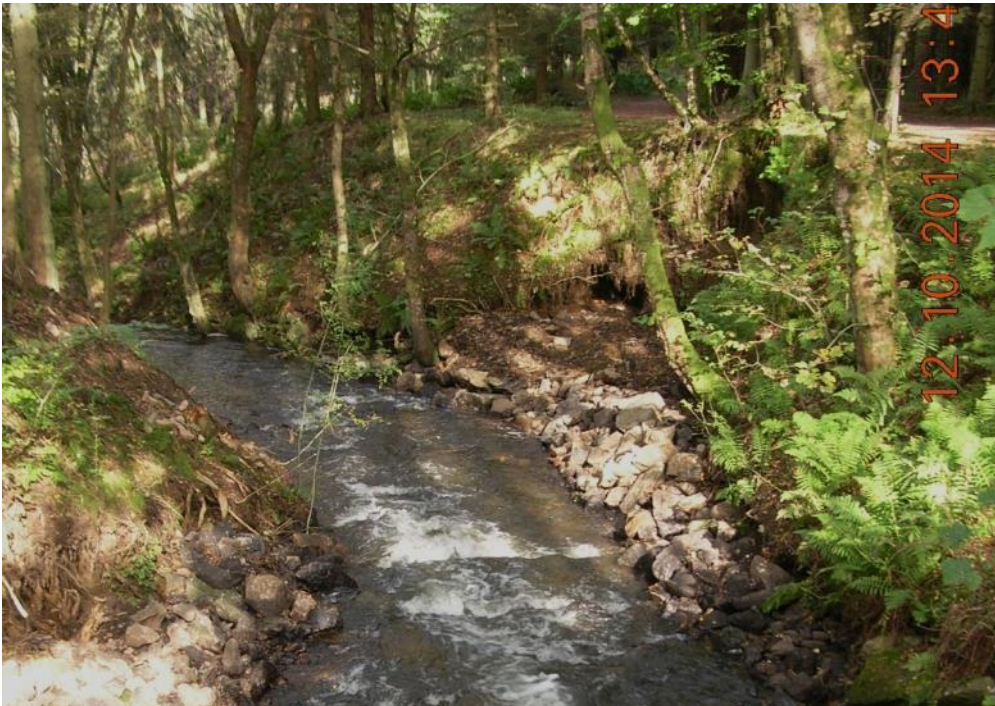
NEW UPPER PRE WEIR AND LAKE OUTFALL WEIR.



NEW SECOND PRE WEIR AND BOULDER PLACEMENT.



UPSTREAM VIEW OF UPPER FALL AND NEW PRE WEIRS.



DOWNSTREAM VIEW OF BANK REINFORCEMENT.

Project Summary.

- Several bodies have been instrumental in making this project possible, firstly Aberdeenshire Council for their cooperation and provision of funding for materials etc, Haddo Estate for providing access and boulders, Jim Adie and Inverurie Precast Ltd for provision of plant and equipment, also some of their staff time, SEPA for assistance in preparing the rather complex CAR Licence applications, the River Ythan Trust and their volunteers, without them, and their input of over 400 man hours devoted to the project since autumn 2013, nothing would have been achieved.
- We now have confidence that salmon will, given typical autumn water levels, have access to a further 14km (9 miles) of useful habitat that has been almost inaccessible to them for at least 25 Years, perhaps longer.
- Our habitat survey of 2012 indicated that a fish pass further upstream on the Keithfield Burn may be an obstacle to fish migration – if this is the case, and can be resolved, access to a further 11km (6 miles) may be achieved.

Alec. Paterson. Secretary. River Ythan Trust. 18th October 2014.