Ebrie Burn - Mill of Elrick

Walkover Survey Assessing Abstraction and Fish Passage Concerns on behalf of the Ythan DSFB

20/08/2024

On 20.08.2024 at 13.30 hours I carried out a follow up walk over inspection of the Mill of Elrick Archimedean Screw hydro scheme on the Ebrie Burn, Grid reference NJ 93328 41286. Since my last site visit on 9th of January 2024, the water level has dropped, and I was able to get a better look at both channels.

The right channel feeds the depleted section of the Ebrie burn, and the left channel feeds the abstraction intake, for the now defunct Mill of Elrick Fishery and Hydro Scheme. Figure 1 below showing the two channels in question.

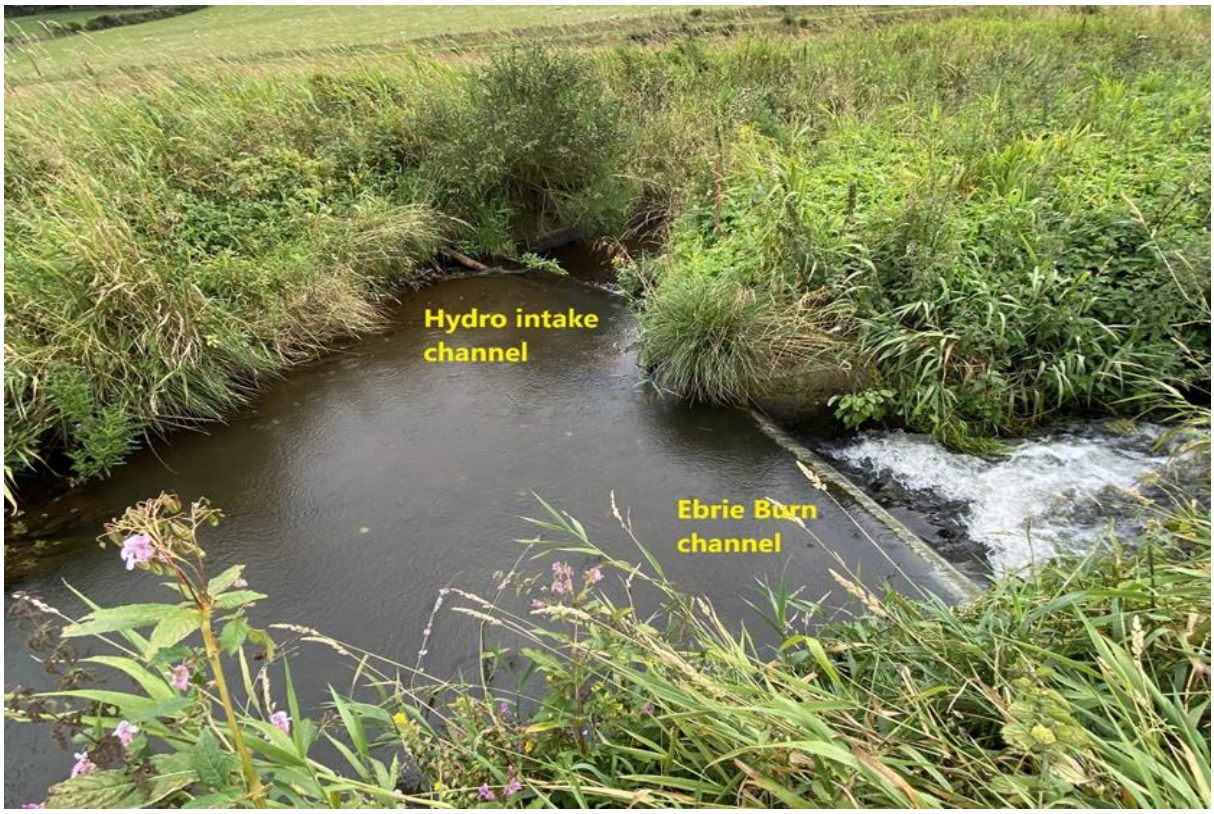

Fig 1. Denoted channels on the Ebrie burn at Mill of Elrick water abstraction site.

The now defunct Mill of Elrick Fishery and Hydro Scheme are still abstracting water unnecessarily currently. This has resulted in a depleted reach of approximately 900m on the Ebrie Burn posing issue for fish migration.

The intake structure is poorly designed and has inadequate controls over the flows being abstracted. At the top of the Hydro intake channel there are two thin wooden boards which have been placed to check the flow. Pressure from behind the boards has caused a noticeable bow in the centre, the boards also show signs of decay and are at risk of failing. If these boards were to breach, it will result in most of the water being drawn into the abstraction channel, leaving very little flow if any down the depleted channel of the Ebrie burn. This would be devastating for the fish and invertebrates in the depleted Ebrie Burn. See figures 2 & 3 below of the two boards in question.

Fig 2, above showing bow in centre of boards at top of abstraction channel

On the Ebrie channel there are also wooden boards that have been placed, these boards have no notch in the centre to allow fish to freely ascend over this obstruction.

Fig 3. Below showing boards placed at the top of the Ebrie burn channel causing obstruction.

Approximately 900m further downstream is a spillway where water exits from the hydro scheme lade. This is a very steep decline with rocks at the bottom and wire mesh on the face. Salmon and sea trout smolts migrating downstream through the hydro scheme lade, have to exit over this spillway which could possibly cause serious injury, entrapment or death, figure 4.

Fig 4, Spillway from hydro scheme.

Concerns

- Uncontrolled abstraction when neither commercial activity requires flows currently.
- Extensive depleted reach and channel 900m with minimal flows in comparison to abstraction channel.
- Inadequate intake design.
- Current intake design in state of disrepair and at risk of failing, which could result inadequate flows through the Ebrie channel for the existing fish and aquatic life living in the depleted stretch.
- Current intake design causing obstruction to fish passage on Ebrie channel, no notch placed in centre of boards.
- No abstraction controls present at point of intake.
- Lack of screens to prevent fish being drawn through the hydro scheme.
- No hands-off controls or measure indicator.
- Inadequate spillway design and potential serious damage or death to fish.

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Acting on behalf of the Ythan DSFB