

WP2 – River Habitat Survey

RHS surveys were undertaken throughout the catchment in all three summers of the project. Aims of the survey work were:

- To collect survey data which could be used to guide the production of a long list of river restoration sites
- To assess the quality of habitat available in the Ythan catchment
- To involve local people in the survey work, thereby raising awareness of river habitat issues amongst residents

Survey data was collated and analysed by the Environment Agency and a summary of the key findings from the data is included below. Additional information on the exact methodology of the surveys can be found in the Field Survey Guidance Manual which is available from the Environment Agency. Additional representations of the data can be seen in the graphs in figures 1 to 8.

Ythan Summary Points

Bank Profiles (see Figure 1)

- ◆ Resectioned banks dominate the catchment with 52 sites extensively resectioned both banks.
- ◆ Only 8 sites did not have any resectioning recorded.
- ◆ Embankments were recorded in some sites in the lower half of the catchment on the Foveran Burn, Youlie Burn and the Ythan whilst 4 sites had set-back embankments (YP5 – Esslemont, Ythan main stem, YP7 – Ardlethen, Ythan main stem, YP17 – Fyvie, Ythan main stem and YP041A Below Tarves, Youlie burn).
- ◆ Whole bank reinforcement is fairly common throughout the catchment (present in 19 sites)
- ◆ 29 sites had toe reinforcement present with another 3 having extensive toe reinforcement.
- ◆ Top of bank reinforcement was absent from the catchment.
- ◆ Poaching was present in a third of the sites surveyed but was not extensive.
- ◆ There were no incidences of artificial two-stage channels within the catchment.
- ◆ Vertical and undercut banks were present at two thirds of the survey sites, throughout the catchment.
- ◆ Steep and gentle banks were recorded at a few sites in the middle of the catchment.
- ◆ Composite was only recorded as present in the 1995 site 2246 on the Ythan.
- ◆ Natural berm was found to be present only in site YP042 near Auchedly on the Wedder burn tributary.

Bank Material (see Figure 2)

- ◆ The catchment has predominantly earth banks.
- ◆ Only a few occurrences of bedrock, boulder and cobble as bank material.
- ◆ Man-made bank materials recorded were brick-laid stone, concrete, gabions, rip-rap and tipped debris, although these were in <15% of sites.
- ◆ Site YP0315 (Ellon) on the Modley Burn was dominated by brick-laid stone.

Landuse (50m) (see Figure 3)

- ◆ The catchment is dominated by agricultural landuse.

- ◆ Improved grassland, tilled land and tall herb were the most commonly found landuse and are distributed throughout the catchment.
- ◆ Only seven of the surveyed sites had neither improved grassland nor tilled land present.
- ◆ Trees were fairly common throughout the catchment but appear more extensive in the middle.
- ◆ Broadleaf woodland occurs in half of the sites with coniferous plantation only in fifteen.
- ◆ Rough pasture was extensive in a quarter of the sites and was present in a further quarter.
- ◆ Suburban/urban and parkland/gardens were found mostly in the southern half of the catchment.
- ◆ Moorland/heath and orchard were absent from all sites.
- ◆ Wetland and scrub/shrub were present at 10% of sites.
- ◆ Open water and rock, scree & sand dunes were found present at only a handful of sites.

Flow Features (see Figure 4)

- ◆ Flow is uniform throughout the catchment and is fairly low energy.
- ◆ Flow appears to be slightly more diverse in the southern half of the catchment.
- ◆ Glides and runs dominate the surveyed sites.
- ◆ Riffles were present in over half of the survey sites.

Bank Features (see Figure 5)

- ◆ Less than half of the survey sites had any bank features recorded (31 sites).
- ◆ Vegetated side bars were the most common bank feature, being present in 15 sites. These were quite common in the upper reaches of the Ythan.
- ◆ Unvegetated side bars were present in 7 sites.
- ◆ Eroding cliffs were present in 10 sites.
- ◆ Stable cliffs were present in 6 sites in the southern half of the catchment.
- ◆ There was only one site that had unvegetated point bars present; YP038 Asleid House, on the Little Water.
- ◆ There were no vegetated point bars found in the surveyed sites

Channel Features (see Figure 6)

- ◆ 41 of the survey sites had channel features(s) present. No channel features were extensive.
- ◆ Exposed boulders were found at 26 sites, mostly in the southern half of the catchment, and were the most common feature.
- ◆ A couple of sites had exposed bedrock (YP031 Foveran church, on the Foveran Burn and YP0412a (Cairnfechel) on the Bronie burn).
- ◆ Nine sites had vegetated boulders/bedrock, mostly on the Foveran Burn and Little Water.
- ◆ Vegetated mid-channel bars were more common than unvegetated ones (14 sites had vegetated compared to 4 with unvegetated). Mid-channel bars were found throughout the catchment.
- ◆ Mature islands were missing from all of the sites.
- ◆ There was only one occurrence of discrete sand deposit (YP038 Asleid House on the Little Water) and of discrete gravel deposit (YP041a below Tarves on the Youlie Burn).

- ◆ Discrete silt deposits were found at 7 sites with the majority being in headwaters.

Trees and Associated Features (see figure 7)

- ◆ Trees were absent from 20% of sites surveyed and were isolated in 36% of sites so over half of the surveyed sites have very poor tree coverage.
- ◆ Trees were semi-continuous in 15% of sites and continuous in 7%. These were located mostly in the northern middle of the catchment.
- ◆ 22% of sites had regular, singular or clumps of trees. Clumps were more common on the eastern side of the catchment.
- ◆ Associated features of trees were distributed throughout the catchment.
- ◆ Shading of the channel was present in 48% of the sites surveyed and was extensive in a further 20%.
- ◆ Overhanging boughs were present in 50% of sites and additionally were extensive in 4 other sites.
- ◆ Exposed bankside roots were present in a third of the sites and extensive in a further 4.
- ◆ Underwater tree roots were found in only 10 sites.
- ◆ Fallen trees were present in 13 sites (18%) and were extensive in site YP0412 above Earlsford on the Keithfield Burn.
- ◆ Coarse woody debris was recorded in 11 sites being extensive in site YP0412 above Earlsford on the Keithfield Burn.

Habitat Modification Index (HMI) (see Figure 8)

- ◆ The catchment is modified with 28 sites having a HMI class of obviously modified and 30 sites significantly modified. There were 5 severely modified sites.
- ◆ Only 9 sites were found to be predominantly unmodified or semi-natural.
- ◆ The main reasons for the poor modification scores are the intensive landuse, bank resectioning and artificial features.

Habitat Quality Assessment (HQA) (see Figure 9)

- ◆ The catchment is predominantly of very poor habitat quality (45 sites).
- ◆ The poor (13) and fair (9) quality sites are spread throughout the catchment.
- ◆ Only 1 site was found to be very high quality; YP035, Tillery Estate on the Foveran Burn.
- ◆ There were 4 sites that were high quality; YP2 below Tarves on the Youlie burn, YP17 Maitland's Bridge, Fyvie and YP18 Home Farm, Fyvie on the main stem of the Ythan and YP042A Haddo, on the Kelly Burn.

Appendix – listing of site names and grid references

Site Ref	RHS ref	River / burn	Mid site grid ref	Site Ref	RHS ref	River / burn	Mid site grid ref
YP0	24656	Bronie	NJ924301	YP0311	30034	Lt Water	NJ838463
YP1	24657	Ythan	NJ822392	YP0312	30035	Lt Water	NJ836483
YP2	24658	Youlie	NJ875314	YP0313	30036	Lt Water	NJ831500
YP3	24659	Ythan	NJ947304	YP0314	30037	Keithfield	NJ881350
YP4	24660	Ythan	NJ964304	YP0315	30038	Modley	NJ950304
YP5	24661	Ythan	NJ927307	YP0316	30039	Ythan	NJ763394
YP6	24662	Ythan	NJ863367	YP0317	30040	Youlie	NJ873309
YP7	24663	Ythan	NJ922319	YP0318	30041	Youlie	NJ875314
YP8	24664	Ythan	NJ906333	YP041	30604	Wedder	NJ898338
YP9	24665	Ythan	NJ899349	YP041A	30605	Youlie	NJ875314
YP10	24666	Ythan	NJ885361	YP042	30607	Wedder	NJ894335
YP11	24667	Ythan	NJ848384	YP042A	30606	Keithfield	NJ880347
YP12	24668	Ythan	NJ834394	YP043	30608	Wedder	NJ887336
YP13	24669	Ythan	NJ806385	YP045	30609	Youlie	NJ854291
YP14	24670	Ythan	NJ793376	YP046	30610	Youlie	NJ849329
YP15	24671	Ythan	NJ787366	YP047	30611	Youlie	NJ846288
YP16	24672	Ythan	NJ771374	YP048	30612	Youlie	NJ842285
YP17	24673	Ythan	NJ761385	YP049	30613	Youlie	NJ837281
YP18	24674	Ythan	NJ762403	YP0410	30614	Youlie	NJ834276
YP19	24675	Ythan	NJ753418	YP0411	30615	Sauchentree	NJ855372
YP20	24676	Ythan	NJ746346	YP0412	30617	Keithfield	NJ832342
YP21	24677	Ythan	NJ734431	YP0412A	30616	Bronie	NJ857262
YP22	24678	Ythan	NJ719420	YP0413	30618	Keithfield	NJ829347
YP23	24679	Ythan	NJ706405	YP0414	30619	Keithfield	NJ828352
YP24	24680	Ythan	NJ697389	YP0417	30620	Keithfield	NJ826347
YP25	24681	Ythan	NJ687379	YP0418	30621	Keithfield	NJ822347
YP26	24682	Ythan	NJ668384	YP0419	30622	Keithfield	NJ816353
YP031	30024	Foveran	NJ985243	YP0420	30623	Keithfield	NJ811355
YP032	30025	Foveran	NJ970239				
YP033	30026	Foveran	NJ953243				
YP034	30027	Foveran	NJ933236				
YP035	30028	Foveran	NJ919224				
YP036	30029	Foveran	NJ904220				
YP037	30030	Lt Water	NJ841395				
YP038	30031	Lt Water	NJ842410				
YP039	30032	Lt Water	NJ849431				
YP0310	30033	Lt Water	NJ843442				