

AXMOUTH BROOK SURVEY: 2013



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Introduction

Axmouth Brook, emerging as a spring and flowing for just over a mile to the Axe estuary, is a unique and essential part of Axmouth Life.

Unique in that *it is a chalk stream*, one of the most western in Britain, and as such a very rare habitat in Devon. Once it leaves the Bindon Estate most of residential Axmouth lies along its course.

Like the road that follows it, it is a linear feature, a long and thin habitat and potential wetland corridor for wildlife to move up and downstream from the estuary to Springhead and even beyond.

There remain areas beside the brook into which species that need more than just the brook bed and water to complete their life spans can move. However through the village only 35% of the brook is now above ground and suitable for animal or plant life. In Higher Axmouth a large area is now private gardens and not accessible or viewable to other residents of the village. Between Bindon Gate and Springhead, an

area listed of significant wildlife importance (SSSI), the brook appears in parts neglected and shaded out.

Mike Clements our well-known historian remembers the watercress beds here and withies cut for use in rural crafts such as thatching. He also recollects catching a 2lb trout at Combe Farm along with the plentiful frogs and toads, as well as playing in the 'muddies' that are the slightly wetter areas that still drain the slope above the show field into the brook. The population of trout has been lost, perhaps due to pollution, and these days rubbish may impact on the purity of the water and flow. Nevertheless, the chiffchaff fall in March in the valley around the brook, and the gathering of swallows and house martins on the wires immediately opposite the brook demonstrate that the flying insects that emerge from the brook continue to be a significant source of foods for birds.

The survey that was carried out in May 2013 was co-ordinated by Natural Axmouth. It was a start - to see *what is the quality of the water - what does remain of the animals living in the brook and of the wetland plants that crowd along its sides?* Axmouth residents, through their Parish Council, also need to know how best to manage the brook in these changing times of potential flood and drought without it being to the detriment of the other important aspects of Axmouth life.

It would be great if the children of Axmouth could once again enjoy some of these natural delights that Mike did when he was younger!



The Survey

Professional expertise on rivers and aquatic life was contributed by Devon Wildlife Trust (Scott West) and East Devon Countryside Service (Penny Evans). Botanical expertise was provided by Marjorie Walters (Devon Wildlife Trust) and in a pilot survey in April by Mike Lock (Axe Vale and District Conservation Society). Members of Natural Axmouth also contributed their wildlife expertise on a day which was advertised to the community as an opportunity to learn about the life of their brook.

The brook was divided into seven sections. For the aquatic survey three were selected for their varying physical features: the brook mouth at Coronation Corner, a concreted section along Church and Chapel Street, and the meandering greener section by the show field.

Eight children and seven adults (in addition to Natural Axmouth members and the professionals) came to the afternoon session for which EDDC provided nets and trays to identify invertebrate and fish life.



Results

Plants

The pilot survey had identified 57 plant species in the watercourse and its margins. The main survey confirmed these, finding 83 non-woody species. None were dominant, none are rare nationally, although some are scarce in the Axmouth area. The watercress and water crowfoot species were the most valuable plant indicators of good water quality. However lots of nettle was observed which might indicate some agricultural run-off or past management practices of leaving the cleared material on the banks. No polluting runoffs were observed but Scott suggested it be checked again in very wet weather.

Invertebrates and fish

The numbers of invertebrate species were roughly the same 9 or 10 in each location with a total of 11 altogether. The caddis flies with both stone and stick cases were particularly appealing to the children. However we still know very little about these invertebrates, nor about amphibians, dragonflies, or birds of the brook.

The numbers of mayflies and bullheads (fish) suggests no shortage of oxygen throughout the length of the brook, although it was noted that no high water quality species, such as stone flies, were recorded. That families/individual species were found in similar numbers at each section surveyed, suggests that although there are areas of very good habitat, notably close to the Show Field, the potential of these is for some reason restricted. Families/individual species indicated 'good' rather than 'excellent' water quality (using the biotic index).



Conclusion and recommendations (accepted by Axmouth Parish Council June 2013)

Overall this was an enjoyable community day spent enjoying the natural asset of Axmouth's brook, a fast-flowing chalk stream and very rare habitat in East Devon. The attractive meandering sections along Chapel Street (about 30% of the village section of the watercourse) where the water undercuts the bank are wider than first appears and provide very good habitat with bankside shelter for mayflies, caddis, damsel and dragonflies etc when they emerge as adults.

However, the invertebrate survey showed that although many species were recorded, there were similar numbers throughout of low to mid scoring water quality species. This highlights a possible water quality issue somewhere in the catchment. Recording the adjacent land use practices and run off into the brook would be a good starting point for understanding the influences on water quality.

1. As long as the water flows freely the risk of overflow is minimal.
Recommendation: the parish council continues to be vigilant about clearing of gullies and culverts.
2. Dumped and fly-tipped garden waste on the banks and litter, especially plastic bags, contribute to flooding: Recommendation: litter and excess woody debris clearing are the main focus of community brook maintenance.
3. Dumped garden waste and mowings from verge cutting also contribute to pollution and excess growth of undesirable species eg nettle and dock.
Recommendation: the parish council should (a) ask the community that depositing waste by the brook ceases (and any disposing of chemical waste in it as on the occasion when the brook was observed to run white for some time) and (b) investigate community composting facilities or an occasional skip for collection of garden waste.
4. Brook maintenance should aim to ensure the free flow of water and also aim to enhance bio-diversity by letting light into the middle of the watercourse. The overhanging sections of bankside growth should be left undisturbed.
Recommendation: on the community day the brook is divided into three sections (as in the aquatic survey), with a Natural Axmouth member to advise on appropriate strategy for each, ie which plants to remove (eg docks), to cut back (eg fool's watercress), or to leave alone and admire (eg water crowfoot).
5. Many invertebrates require vegetation alongside the water for their life-cycle (in turn providing food for birds and bats). Recommendation: The parish council should give consideration to a wild-flower-friendly mowing regime for certain sections of the brook verge. Natural Axmouth can advise on this and on the means of removal of waste.

6. When a contractor is engaged by the parish council to clear or maintain any section of the brook, Natural Axmouth recommend that they are directed by the parish council in consultation with the Natural Axmouth group.

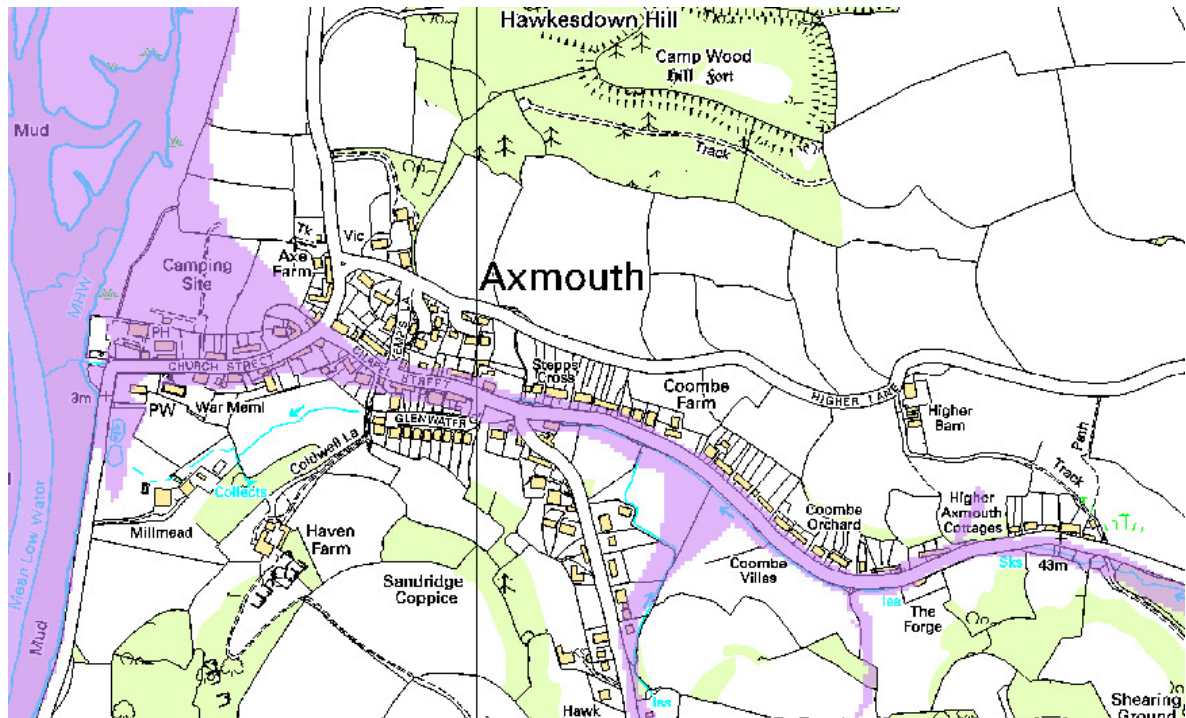
Fish and invertebrates identified

Bullhead
Mayfly nymph
Caseless caddisfly lava
Cased caddisfly larva
Damselfly, blue
Freshwater shrimp
Sludge worm
Leech
Midge larva

Plants Identified (not including woody species)

Bramble
Broad-leaved dock
Bush vetch
Chickweed
Columbine (Aquilegia)
Common figwort
Common watercress
Corn salad
Cow parsley
Creeping buttercup
Creeping cinquefoil
Creeping comfrey
Cuckoo flower (Lady's smock)
Daisy
Dandelion
Dog's mercury
Dove's-foot Cranesbill
Entermorpha
Field Garlic
Field speedwell
Filamentous algae
Fools watercress
Garlic mustard
Germander speedwell
Giant horsetail
Golden saxifrage
Goosegrass (sticky Willie)
Great hairy willowherb
Great scented liverwort (snakewort)
Greater stitchwort
Green alkanet
Ground elder
Ground ivy

Groundsel
Hart's tongue
Hedge bedstraw
Hedge woundwort
Hemlock water dropwort
Herb Robert
Hogweed
Ivy
Ivy-leaved toadflax
Lesser celandine
Male fern
Mallow
Meadowsweet
Mexican fleabane
Mind your own business
Nettle
Nipplewort
Ox-eye daisy
Pellitory of the wall
Pendulous sedge
Pineapple weed
Polypody
Pond sedge
Prickly sowthistle
Primrose
Ragwort
Red campion
Red dead nettle
Red valerian
Ribwort plantain
River feathermoss
Sea arrowgrass
Sea beet
Sea radish
Shining cranesbill
Silverweed
Smooth sow thistle
Soft shield fern
Spanish bluebell
Spear thistle
Tutsan
Watercress
Waterfigwort
Wavy bittercress
White dead nettle
Wild angelica
Wild arum
Willowherb
Yellow flag



Map of Axmouth Brook showing areas susceptible to surface flooding (by permission of the Environment Agency).

Natural Axmouth Committee

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