Survey of invertebrates in two ponds, moat and stream – 14 July 2002

This survey was carried out using standard pond dipping methods and equipment and a field studies council identification key. This key only goes to Family level at best (and as far as our 'expertise' and knowledge could take us) so that the presence of any rare invertebrates such as the beetle reported in the Aquavitae 21 survey would not be recognised**. However the quantity and variety of creatures present is a good indication of the water quality**.

The ponds were surveyed mainly by Gill Chiverell and Wendy Johnson; the moat by Graham Mowbray; the stream by Graham and Gill. Also present Dug Vann and Gareth Thomas.

A list of invertebrates and amphibians found at each site is listed in the table below

Pond 1 (nearest the moat)		**Pond 2**	
The hornwort introduced in 2001 has grown profusely and there is a thick layer of blanket weed covering the surface		The hornwort introduced here has grown well (not so much as in pond 1) and the surface is covered by duckweed (as last year)	
Creature caught	**Number**	**Creature caught**	**Number**
Lesser water boatman	10+	water boatman Greater lesser	10+ a few
Hoglouse	6	Hoglouse	4
Fresh water shrimps	10+	Fresh water shrimps	6
Mayfly nymph	4 (small)	Mayfly nymph	2
Fly larvae(various)	many	Fly larvae(various - including blood worms)	More than pond 1
Beetles	7 (6 whirligig)	Beetles	1 (whirligig)
Daphnia	100s	Daphnia	More than pond 1
Newt tadpoles	3	Frog tadpole	1
Dragonfly nymph	*1 (caught a week earlier)*	*Small frogs have been seen near the ponds*	
Moat		**Stream**	
Hornwort put in moat two weeks ago all gone		Survey here was less systematic	
Creatures caught	**Number**	**Creatures present**	
Daphnia	very large numbers	Many fresh water shrimps	
Blood worms (small)	10+	A few mayfly nymphs	
leeches	2	beetles	
Hoglouse (small)	1		

'Daphnia,' which may include other Crustacea, are small planktonic animals which live floating in the water. They feed on algae and are near the bottom of the food chain.

Blood worms are a type of fly larvae. They live in the bottom sediments where there is little oxygen and are bright red because they contain haemoglobin which helps them take up oxygen. So they can thrive in polluted water**. Mosquito** can also do well in stagnant and oxygen deficient water as they have breathing tubes to take oxygen from the air. Many other **fly larvae** can survive in poor quality water.

Leeches are also found in water of poor quality.

Shrimps and **hoglice** are common in ponds. They feed on detritus. The hoglouse is pollution tolerant but the fresh water shrimp less so.

Water boatmen and **beetles rank** with shrimps as indicating water of medium quality.

Most **mayfly nymphs** are indicators of good quality water and although the ones caught were rather poor specimens it is pleasing to see them there.

Over all the quality of the water in the ponds seems to be improving with an increase in the total invertebrate and amphibian life present. The stream is also good but there is no improvement in the moat.