

# Gearrchoille Community Wood



Photo: B.Geddes

**Amphibian survey**

**March – April 2009**

## Introduction

[Names for areas within the Gearrhoille can be found in the appendix to the 2007 report]

In 2007 the Gearrhoille Community Wood amphibian population was surveyed in May. It was recommended that to properly assess the population a number of visits should be carried out between late February and early May (McAllister, 2007). This would permit the following to be assessed:

### 1 Frog spawning

From spawn clump counts and/or spawn area a reasonable estimate of the number of breeding females can be made and from that an estimate population size. (Cooke, 1975; Griffiths & Raper, 1994)

### 2 Toad spawning

Toadspawn chains appear between 10 and 33 days after first frogspawn (Cooke, 1977). Survival and development of frogspawn can also be assessed.

### 3 Frog and toad hatching and survival

Towards the end of the survey period, i.e. late April/early May.

### 4 Newts and adult activity of frogs and toads

Evening visit in the middle of the period to look for adult amphibian activity especially newts. Newt eggs in vegetation can be searched for on any or all of the other visits.

In 2009 Brigitte Geddes photographed 3 clumps of spawn in the "Spawn pool" on Saturday 28th February and it was decided that survey work should be carried out immediately.

## Survey work

### Common Frog *Rana temporaria*

Three visits were made to the wood during March and early April by myself (DWMcA). Details of the spawn found and the estimates of the population breeding females frogs are outlined in Table 1. In these visits the main survey method used was visual search for spawn and tadpoles plus dip netting for tadpoles. Spawn clump size, age, clump numbers and hatching date were estimated and to provide population statistics.

### Common Toad *Bufo bufo*

During the survey work no toads were seen and no toad spawn found. George Ross and Andrew Ramsay who both visit the wood on frequent occasions were consulted, both stated that they hadn't seen toads in the wood.

### Palmate Newt *Lissotriton (Triturus) helvatica*

An additional two visits were made by Brigitte Geddes and Dr. Phil Gurr on 13<sup>th</sup> and 22<sup>nd</sup> April to assess possible breeding sites for newts. No newts were found.

**Table 1: Visits to the Gearrhoille and cumulative estimates of the population spawning female frogs.**

Water body	3 <sup>rd</sup> March	Pop.	12 <sup>th</sup> March	Pop.	1 <sup>st</sup> April	Pop.	Notes
Green burn crossing (1)							
Green burn embankment (2)							Build up weir to deepen
Bridge on side burn (3)							
Small pool opposite picnic table	No spawn		No spawn		No spawn		Enlarge
Open water E of path bend	No spawn		No spawn		No spawn		
Spawn pool	Frog spawn 3 clumps (each 10x10)	4	Frog spawn (30x15 old) near outflow. (15x15 several days old)	5	Only a little degraded spawn A few small tadpoles	5	>29 days
Still ditch opposite above	No spawn		No spawn		No spawn or tadpoles		
Curling pond – open shallow ± still area beside burn in NE corner.	Frog spawn (25x15) at least 3 ages	4/5	Frog spawn (30x25 old) 4/6 old, 1 fresh (15x10 2-3 days old) 2/3	6/8	Frog spawn (30x15 hatched) 20x15 newly hatched tadpole mass. (25x15 mostly hatched)	6/8	c29-32 days
Curling pond – open still water area in NW corner.	Frog spawn (20x20)	4/6	Frog spawn (30x20) 5+ old, 2 fresh	6/8	40x20 old spawn mass with much algae growth. Newly hatched tadpole masses 10x15; 10x10.	6/8	>29 days
Curling pond – open still water below trees on N side	No spawn		No spawn		No spawn		
Curling pond – open water below inflows, some flow	No spawn		No spawn		No spawn		
Seepage areas draining to curling pond on other side of path	No spawn		No spawn		No spawn		
Dead pine at upper end of path							
Pool to SW of old pine	Frog spawn (20x10)	2	Frog spawn (25x20) old completely white (15x10) fresh – 2cl 1 female frog (post spawning)	4/5	Triple spawn mass Old completely white, central well developed, top 1-2 weeks old, new. No hatching yet.	5/6	Some probable frosting of early spawning.
Flow marsh – to N of upper wayleave			No spawn		No spawn		
Upper wayleave pools	No spawn		No spawn		No spawn		
Marsh by dyke 5mx1m (E wood)	No spawn		No spawn		No spawn		
Wayleave bend pools	No spawn		No spawn		No spawn		
Wet area between wayleave and path	No spawn		No spawn		No spawn		
Pool above green burn exit	Frog spawn (10x10)	1	Frog spawn (15 x10) 1 old	2	25 x10 spawn, 10x10 newly hatched tadpole mass	2/3	≥29 days
	<b>Cumulative pop. estimate total</b>	<b>15/18</b>		<b>23/28</b>		<b>24/30</b>	

## Survey results and population estimates

### **Common Frog**     *Rana temporaria*

In one breeding season a female frog will produce one clump of spawn which will usually be 10-20cm in diameter. As a result the breeding female population can be estimated by recording the number of spawn clumps produced. As the sex ratio of common frog populations is normally 50/50 this permits some estimate of the breeding population within an area (Cooke, 1975; Griffiths & Raper, 1994).

Table 1 provides a cumulative estimate of the numbers breeding female within suitable pools in the Gearrchoille as between 24 and 30. This would give a total breeding population of about 48 to 60 frogs.

The spawning to hatching time can also be estimated from the data in the table as between 29 and 32 days. Throughout the survey period temperatures were mild and in many years the spawn to hatching time may well be longer. During the newt survey visits Brigitte Geddes recorded "froglets" leaving a pool on 22<sup>nd</sup> April giving a dating to metamorphosis time of about 21 days, again possibly related to the relatively high temperatures during April this year. The upper ponds in the wood suffered from frosting effects but these were not noted in the lower areas.

### **Common Toad**     *Bufo bufo*

During the survey work no toads were seen and no toad spawn found, but BG had a report of toad spawn just outside the reserve area. To breed toads typically require a relatively large area and a water depth of about 20-50 cm with suitable vegetation for their spawn strings. (Cooke, 1975). These conditions are not met in any of the present water bodies within the Gearrchoille.

### **Palmate Newt**     *Lissotriton (Triturus) helvatica*

The presence of newts was assessed using cold searches and worm traps. No newts were found. Like toads palmate newts require a large pond area with some water relatively clear of vegetation for their courtship display, they also need plants on which to lay their eggs. (Griffiths, 1995). Again these conditions are not met in any of the present water bodies within the Gearrchoille.

## Recommendations

Main recommendation in McAllister 2007 are still applicable to the wood. In addition it might be possible to enlarge several pondage areas such as those opposite the picnic tables on the all abilities path and the crossing area of the green burn.

Survey work should be carried out from late February to early May over several more years to establish the variations in pattern of frog spawning and hatching and to more clearly estimate the population.

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## References

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