

# East Kilbride Frog Survey 2012

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Common Frog (*Rana temporaria*) © Erik Paterson



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# 1. Summary

As part of ongoing monitoring of the Common frog population in the South Lanarkshire town of East Kilbride a survey which followed up a 2000 report was initiated and undertaken by Erik Paterson to ascertain the changes in Common frog population and distribution throughout the town between 2000 and 2012.

The 2000 report listed some eighteen sites within the town where frogs had bred and the 2012 report discovered 30 sites within the town, it was noted that many of the sites were not able to be relocated, in part due to industrial development resulting in total loss of the breeding pond and in part also due to unclear site names.

Common frogs were found to be widespread and abundant within the town, breeding in most water bodies capable of sustaining them in numbers ranging from just one spawn clump in a pond to well over 200 in the one pond with a calculated total number of more than 672 female frogs having bred within the surveyed sites this season.

## 1.1. Introduction

Following a Millennium survey of Common frog, *Rana temporaria* breeding sites around the South Lanarkshire town of East Kilbride, initiated and co-ordinated by South Lanarkshire Council Countryside Ranger Mark Brand, a second survey was initiated and undertaken by Erik Paterson to assess whether there had been a change in breeding locations and numbers during the twelve years following the original report.

The initial report (Brand, 2000) indicated that there were eighteen sites in East Kilbride and surrounds which contained breeding populations of frogs. However there was little indication as to the number of breeding adults at each given site. The report was also unclear as to the location of several of the sites which made relocating the previously surveyed sites challenging. Some of the sites were also found to have been developed upon during the twelve intermittent years resulting in the loss of these breeding ponds.

The aims of the 2012 survey were:

- Identify locations where Common frogs bred in East Kilbride.
- Collect data on population size at each breeding location.
- Provide South Lanarkshire Council and other interested parties with collected data with a view to protecting or even improving habitat and habitat connectivity.

## 1.2. Methods

Survey protocols enacted were:

- Visual Survey – this method was appropriate for most sites.
- Netting – Netting was used to ascertain tadpole presence or absence at sites where this could not be established by visual survey either due to large amounts of vegetation or high turbidity of the water.

Where possible, sites were visited repeatedly to ascertain whether the breeding was successful and larvae were successfully metamorphosing. With a view to increasing the data collected, a press release was published in the East Kilbride News (dated: March 14<sup>th</sup> 2012) calling for East Kilbride residents to send records of Common frogs breeding in garden ponds to the author. As a result several ponds which would otherwise have gone unrecorded have been verified and added to the report. East Kilbride MSP, Linda Fabiani also publicized the survey on her website.

## 2. Results

The results of the 2012 survey are detailed in the following pages which include: The name of each site; an image of the site; the date and time at which the record was taken; a 10-digit OS grid reference of the location at which most individuals were present; the survey methodology used to collect data; and the data gathered during the survey.

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1. 'Amphibian Site', Hurlawcrook Road.



Marshy corner of a brownfield site.

Date/Time.	OS Grid Reference.	Details.
28/02/2012, 12:00pm	NS 639** 509**	Visual survey. Approx. 25 Spawn clumps & 70+ adults present in a shallow, approx. 2m x 2m pool.
18/03/2012, 10:45am	As above	Visual survey. No adult frogs remaining 5 large beds of spawn each 50cm <sup>2</sup> +, using accepted calculations of 40-50 clumps of spawn per 50cm <sup>2</sup> cluster, calculated at the lower end of 40, this totals at 200 clumps of spawn.
15/04/2012, 10:05am	NS 639** 509**	Visual survey. Many free-swimming tadpoles present.
14/06/2012, 6:20pm	As above	Visual survey. Very many fully metamorphosed juvenile frogs present.

## 2. Hairmyres Wood.



Marshy corner of small wood adjacent to Hairmyres Railway Station.

Date/Time.	OS Grid Reference.	Details.
29/02/2012, 11:30am	NS 604** 544**	Visual survey. 20 Spawn clumps, approx. 16 adults including one deceased animal present. Single adult female <i>Lissotriton sp.</i> Newt also noted.
09/03/2012, 11:00am	As above.	Visual survey and netting. At least 45 spawn clumps present alongside ten adults and two corpses. Two <i>Lissotriton sp. larvae</i> netted.
10/04/2012, 11:40am	As above.	Visual survey and netting. One adult frog's corpse present, no tadpoles found. Four mature male and four larvae <i>Lissotriton helveticus</i> netted.

### 3. Fire Pond, Calderglen Country Park.



Overgrown pond located next to the play area at Calderglen.

Date/Time.	OS Grid Reference.	Details.
04/03/2012, 09:35am	NS 654** 528**	Visual survey. Few clumps of spawn at the surface though I expect more will be present and more deeply submerged. Several adults noted.
29/05/2012, 3:30pm	As Above	Visual survey. Pond's edge inaccessible. No herpetofauna evident from vantage point however it is entirely possible that they were present.

#### 4. Bottom Field Pool, Calderglen Country Park.



Large seasonal puddle in field prone to drying out.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
04/04/2012, 09:45am	NS 655** 529**	Visual survey. Around 20 clumps of frog spawn and one string of toad spawn, site is drying out and most of the frog spawn is no longer fully submerged.
17/04/2012, 01:00pm	As Above	Visual survey. No tadpoles or spawn present in pond.
29/05/2012, 3:35pm	As Above	Visual survey. Pond almost completely dry, no herpetofauna present.

**5. Lindsayfield Development S.U.D.S.**



Large, muddy S.U.D.S. pond for housing development site with slight Mallard Duck impact.

Date/Time.	OS Grid Reference.	Details.
04/03/2012, 09:00am	NS 606** 519**	Visual survey. Approx. 35 clumps of frog spawn present in one corner of the pond. Three adult frogs dead at the ponds edge, predation seems likeliest cause; two further adults trapped in flooded drain; One adult common toad D.O.R. and three further trapped in dry but heavily silted drain.
02/04/2012, 11:00pm	As Above	Visual Survey. Many frog tadpoles present in deeper areas of water amongst very many strings of <i>B. bufo</i> spawn.
27/05/2012, 09:15am	As Above	Visual survey. No tadpoles or spawn noted in pond. Water is shallow and clear.

**6. Fred's Pond, Calderglen Country Park.**



Woodland Pond, heavily shaded by trees and filled with leaf litter.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
04/03/2012, 09:15am	NS 658** 547**	Visual survey. Approximately 40 clumps of spawn counted with around eight adults still in the pond, a group of which had formed a 'mating ball' in the centre of the spawn.

**7. Mossneuk Park.**



Marshy corner of Park.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
08/03/2012, 10:35am	NS 610** 531**	Visual survey. Four clumps of spawn present in shallow marshy pools.

**8. GSO Business Park S.U.D.S.**



Large, slow flowing S.U.D.S. Pond with some submerged vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
08/03/2012, 11:05am	NS 600** 554**	Visual survey. One clump of spawn present.
27/05/2012, 10:20am	As Above	Visual Survey. No tadpoles seen.

**9. Thornton Road S.U.D.S.**



Large, marshy S.U.D.S pond adjacent to Thornton Road.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
08/03/2012, 11:20am	NS 594** 541**	Visual survey. More than 100 clumps of spawn present alongside two carcasses.
27/05/2012, 9:40am	As Above	Visual Survey. No spawn or tadpoles seen. One adult female <i>Bufo bufo</i> present amongst reeds.

**10. Peel Road S.U.D.S.**



Large, muddy S.U.D.S. pond in field. Slight Mallard Duck impact.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
08/03/2012, 11:30am	NS 594** 539**	Visual survey. One clump of Spawn alongside one carcass.
27/05/2012, 9:50am	As Above	Visual survey. No spawn or tadpoles noted.

**11. James Hamilton Heritage Park, Nature Reserve.**



Large area fenced off from the public. Sizeable waterfowl population coupled with large population of sticklebacks & minnows.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
11/03/2012, 2:20pm	NS 626** 557**	Visual survey. At least 90 clumps of spawn and 60 adults present, frogs gathering along the southernmost fringe of the pond.

**12. Stuarton Park Pond One.**



Garden pond reported by resident and verified following press release. Pond is around 2m x 1m and approx. 4 feet deep at it's deepest end containing both submerged and emergent vegetation alike.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
17/03/2012, 2:00pm	NS 632** 548**	Visual survey. Approx. 26 clumps of spawn some of which beginning to hatch counted with several adults remaining.

**13. Stuarton Park Pond Two.**



Garden pond reported by resident and verified following press release. Pond is approx 2m x 1m containing primarily emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
17/03/2012, 2:10pm	NS 633** 549**	Visual survey. Approx. 23 clumps of spawn with around ten adults remaining including one pair in amplexus.

#### 14. Langlands Path Drainage Channel.



Heavily vegetated drainage channel running down the northern edge of the half-circular path leading to Langlands Moss.

Date/Time.	OS Grid Reference.	Details.
18/03/2012, 10:05am	NS 636** 514**	Visual survey. Four clumps of spawn counted.

**15. Langlands Woods Drainage Channel.**



Mostly shaded drainage channel at Langlands Moss' boardwalks entry to the woods.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
18/03/2012, 10:15am	NS 634** 513**	Visual survey. Approx. six clumps of spawn present.

## 16. Langlands Woods Pool.



Partially shaded seasonal pool within the woods at Langlands Moss L.N.R..

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
18/03/2012, 10:20am	NS 633** 513**	Visual survey. One clump of spawn present.
20/05/2012, 2:20pm	As Above.	Visual survey. No spawn present, dog walker notified me that he had removed the single clump of spawn on account of this pond regularly drying out.

### 17. Calderside Road Disused Pit.



Small disused pit with plenty of emergent vegetation. Slight waterfowl impact from Mallard Ducks.

Date/Time.	OS Grid Reference.	Details.
23/03/2012, 12:30pm	NS 667** 552**	Visual survey. Around nine clumps of frog spawn noted, most of which is starting to hatch with many free-swimming tadpoles present. Toads also present in pond with ten animals spotted including one pair in amplexus, one string of toad spawn also present.
27/05/2012, 11:30am	As Above	Visual Survey. Several tadpoles present, of both <i>B. bufo</i> and <i>R. temporaria</i> .

## 18. Langlands Golf Course.



Tire tracks and adjacent drainage ditch in the golf course filled with water.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
20/03/2012, 1:35pm	NS 638** 511**	Visual survey. Five clumps of spawn in the ditch with some free-swimming tadpoles present.
17/04/2012, 11:15am	NS 639** 511**	Visual survey. Few free-swimming tadpoles present.
14/06/2012, 6:25pm	As above	Visual survey. Pools totally dry, no evidence of frogs present.

**19. Langlands Square Ditch.**



Seasonal pool behind Unit 3D of Langlands Square.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
25/03/2012, 1:55pm	NS 637** 514**	Visual survey. 25 clumps of spawn present. Much of the spawn is no longer submerged as the pool begins to dry.

**20. Peel Park Pond.**

Large, deep and heavily overgrown pond part of Industrial Estate Landscaping located along Redwood Crescent.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
28/03/2012, 9:05am	NS 604** 549**	Visual survey. Reported by regular visitor as having lots of frog spawn however only two clumps of spawn noted. Much spawn may be submerged in the deeper parts of the pond however.
27/05/2012, 10:10am	As Above	Visual survey. Open water inaccessible due to vegetation.

**21. Langlands Moss L.N.R. Main Drainage Ditch.**



Dammed up drainage ditch which forms a cross section through the reserve.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
28/03/2012, 9:30am	NS 634** 511**	Visual survey. Seven clumps of spawn noted in deep ditch at the top of the reserves dome.

**22. Glen Turret Pond.**



Garden pond reported by resident and verified following press release. Pond designed and installed specifically with amphibians in mind, plenty of emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
30/03/2012, 9:45am	NS 654** 546**	Visual survey. One clump of spawn present.

**23. Glen Esk Park.**



Marshy Corner of overgrown park.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
30/03/2012, 9:55am	NS 655** 549**	Visual survey. Four clumps of spawn in marsh which is quickly drying out. Most of the spawn is completely above water.

**24. Teesdale Main Pond.**



Garden pond reported by resident and verified following press release. Large, deep decorative pond with some emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
30/03/2012, 2:55pm	NS 624** 550**	Visual survey. 17 clumps of spawn counted alongside eight adult frogs and a pile of seven corpses at the ponds edge.

**25. Teesdale Wildlife Pond.**



Garden pond reported by resident and verified following press release. Dedicated wildlife pond with much submerged and emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
30/03/2012, 3:05pm	NS 625** 550**	Visual survey. Many well developed free-swimming tadpoles present alongside the corpse of one adult female and one live adult male.

**26. Simpson Drive Pond.**



Garden pond reported by resident and verified following press release. No obvious vegetation in pond.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
02/04/2012, 12:45pm	NS 622** 533**	Visual survey & netting. No spawn found however three adult frogs & two male palmate newt seen/netted.

**27. B&Q S.U.D.S.**



Large S.U.D.S. Pond located near the B&Q site. Bordered by roads on all sides, very murky and full of litter.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
07/04/2012, 11:55am	NS 641** 562**	Visual survey. Three clumps of spawn present.
27/05/2012, 10:40am	As Above	Visual Survey. No tadpoles noted, water is very shallow but clear.

**28. Field by the Rotten Calder.**



Water filled ditches in field made by the tracks of a vehicle.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
17/04/2012, 11:35am	NS 640** 506**	Visual survey. Several tadpoles present.
14/06/2012, 6:15pm	As above.	Visual survey. Several fully metamorphosed juvenile frogs present.

**29. Livingstone Drive Secondary Pond.**



Garden pond reported by resident and verified following press release. Small garden pond with submerged and emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
05/05/2012, 7:30pm	NS 630** 533**	Visual survey. Many tadpoles present swimming at the surface.

**30. Livingstone Drive Main Pond.**



Garden pond reported by resident and verified following press release. Large, deep garden pond with primarily emergent vegetation.

<b>Date/Time.</b>	<b>OS Grid Reference.</b>	<b>Details.</b>
05/05/2012, 7:30pm	NS 630** 533**	Visual survey. Many free-swimming tadpoles present at shallow points of pond.

### 3. Discussion

The results clearly indicate that there is a healthy and widespread population of frogs in East Kilbride. Whilst the population of frogs is mainly consigned to the outskirts of the town, they can be found right in to the centre, surviving and breeding in parks and gardens. It is possible that central populations are disconnected from one another and from the outlying breeding populations, separated by roads and other man-made obstacles which can act as barriers to dispersal. However more research in to the locations and habitat connecting breeding sites would be required to establish whether or not these are fragmenting the population. In addition collection of data regarding sites where frogs and other amphibians were not found to breed may help ascertain whether there are areas in East Kilbride where these animals are absent, and the reasons why.

Of the eighteen ponds surveyed by Mark Brand in 2000, only nine were able to be relocated and accessed. Of these nine, seven were found to contain frog spawn and so two are not featured in this report. Of the remaining nine ponds three could not be located due to confusion with the names; two could not be accessed; three were found to have been developed upon resulting in the loss of these sites; and one was found not to have any frog spawn present. The twenty three new sites surveyed this year ranged in size from tracks left in the mud by tyres to S.U.D.S. and a disused quarry. The greatest number of ponds 37% (eleven ponds) were less than 1 meter square whilst the second highest number of ponds 30% (nine ponds) were greater than 5 meters square. These results indicate that Common frogs will breed in a variety of water bodies of a range of different sizes.

The total number of spawn clumps counted from the 25 ponds surveyed whilst spawn was still present totalled at 672, indicating that the number of female frogs that bred in East Kilbride this year was greater than 672 individuals. 33% of ponds surveyed whilst spawn was still evident (ten) presented with less than five clumps of spawn present, with the highest count of spawn being "Amphibian Site, Hurlawcrook Road" with a calculated 200 clumps of spawn present.

Ten of the thirty sites surveyed in 2012 were found to either: have been spawned in but dried out; or otherwise not had successful larval metamorphosis resulting in one third of all ponds being unsuccessful in regards to adding to the adult population. With additional repeat visits to the rest of the ponds it may have been found that this number would have been far higher. It may be prudent to assess the ponds which were found to have been unsuccessful and mitigate against larval failure by deepening the existing pond or by providing an additional pond nearby at an appropriate location.

During the survey it was noted that Common toads and Palmate newts were found in far fewer ponds than Common frogs. This is perhaps unsurprising given the different preferences in breeding sites between the species, it would be interesting to include all amphibians as target species to increase knowledge of their breeding habits within the urban environment of East Kilbride.

Based on the results of the 2012 survey, the following can be recommended for future studies:

- In a repeat survey data should be collected for sites surveyed found not to contain amphibian breeding populations;
- All ponds are re-surveyed with multiple visits to each pond throughout the season where possible to ascertain the success of the spawn/larvae;
- Ponds surveyed in 2012 where spawn was not counted should be surveyed earlier in the year to count numbers of spawn present and increase knowledge of breeding density per site and in the wider area;
- Ponds found to be failing are monitored and those failing repeatedly should be managed to increase their viability for breeding populations;
- Sites are surveyed for additional amphibian species and their presence/absence noted;
- Terrestrial habitat in the areas surrounding and connecting sites should be assessed for their

quality in regards to supporting an amphibian population; and

- Where possible, additional ponds should be surveyed to increase the collection of data and assist in the understanding of amphibian distribution in East Kilbride.

#### **4. Acknowledgements**

Thanks must go to John Hawell of South Lanarkshire Council's Ranger Service for his support and help whilst undertaking this survey; Chris Cathrine of Caledonian Conservation Ltd. who provided support with the formatting of the report and donated both time and funds in order to supply the map; The East Kilbride News & Linda Fabiani, MSP who helped publicise the survey and as such ensure that records were received; South Lanarkshire Council's Countryside and Greenspace Department for their support of the project and allowing me access to their land to survey; and the people of East Kilbride who got in touch and allowed me to survey ponds on their land.

#### **5. Contacts**

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[www.c-arg.webnode.com](http://www.c-arg.webnode.com)

South Lanarkshire Council's Countryside & Greenspace Service.

[www.southlanarkshire.gov.uk](http://www.southlanarkshire.gov.uk)

#### **6. References**

Brand, M. 2000. *East Kilbride Frog Survey ~ 2000*. South Lanarkshire Council Countryside and Greenspace Department, Hamilton.

## Appendix 1: Maps

Erik Paterson



Figure produced by:



Key

Frog breeding pond

Site number

Scale 1:25,000 @ A3  
0 220 440 880 m



Frog Breeding Ponds  
2012

East Kilbride  
Common Frog Breeding Sites  
2012

