

**AQUATIC MACRO-INVERTEBRATE  
SURVEYS OF DRAINAGE DITCHES FOR  
LONDON ASHFORD AIRPORT**

**Report to LAA**

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# **AQUATIC MACRO-INVERTEBRATE SURVEYS OF DRAINAGE DITCHES FOR LONDON ASHFORD AIRPORT**

## **SUMMARY**

London Ashford Airport (LAA) requested an aquatic macro-invertebrate survey of drainage ditches along part of the route of the proposed extension for the main runway at Lydd, Dungeness, West Sussex. Five samples were taken at five sample locations on LAA land, which were used previously by the surveyor in 2007 and using the same methods (Godfrey 2007).

Three-minute samples were taken from the banks using a standard pond net (1mm mesh). The samples were taken on 9th December 2010. The samples were placed into sample bags and processed later by washing, sieving and sorting. A total of 51 species were recorded from five samples and these all comprise common and local species. The low species richness and absence of rare and uncommon species which have been recorded previously is explained by the time of year.

# AQUATIC MACRO-INVERTEBRATE SURVEYS OF DRAINAGE DITCHES FOR LONDON ASHFORD AIRPORT

## INTRODUCTION

London Ashford Airport (LAA) requested aquatic invertebrate surveys of drainage ditches along part of the route of the proposed extension for the main runway at Lydd, Dungeness, West Sussex. This report describes the aquatic invertebrate survey work undertaken in December 2010 and presents the results of the survey.

## METHODS

The five sample locations (1-5) are the same as those sampled previously (Godfrey 2007) and these are shown in Figure 1.

The sample methodology was 3 minute sampling from the ditch-sides using a standard pond net (supplied by EFE/GB Nets, Bodmin, Cornwall) with a 1mm mesh. The net was passed along the sides, over and through the top layers of the bed of each channel, through submerged weed and open water. Samples were placed in sample bags and later placed in a freezer. Sample processing involved placing each sample in a coarse sieve (1cm) over a finer sieve (500 microns) and pointing a jet of cold water over the sample until all the mud had been washed out and the water draining from the samples was clear. The material caught in the coarse sieve was placed into a white tray and examined for large invertebrates. Small portions of the fine material retained by the 500 micron sieve were then placed into gridded petri-dishes until all the sample was dealt with (typically this would involve 20-50 petri-dishes per sample), clean ditch water was added and the samples were examined and sorted under the stereo-microscope. Vouchers of all taxa were taken and specimens were counted.

Sampling took place on 9th December 2010 in cold but clear weather conditions.

## RESULTS AND DISCUSSION

### SPECIES ASSESSMENT

A total of 51 taxa were recorded, all of which have either Common or Local status according to Natural England. The long list of uncommon and rare species recorded in May and August 2007 (Godfrey 2007) were not recorded in the present survey as were many common and local species. This is almost clearly a reflection of the time of year since physical conditions in the ditches appear not to have changed since then in terms of habitat and there appeared to be no problems with pollution, eutrophication, etc. Examination of the means by which the uncommon and rare species recorded in 2007 overwinter may reveal that they are inactive as adults over the winter months, overwinter as eggs, larvae or pupae or have other behaviour which means that they are not likely to be recorded in December.

### UPDATE ON 2007 AQUATIC MACRO-INVERTEBRATE SURVEY

An aquatic weevil belonging to the genus *Bagous* was recorded in 2007 but because identification of *Bagous* species is difficult, specimens had to be taken to Manchester Museum for checking with

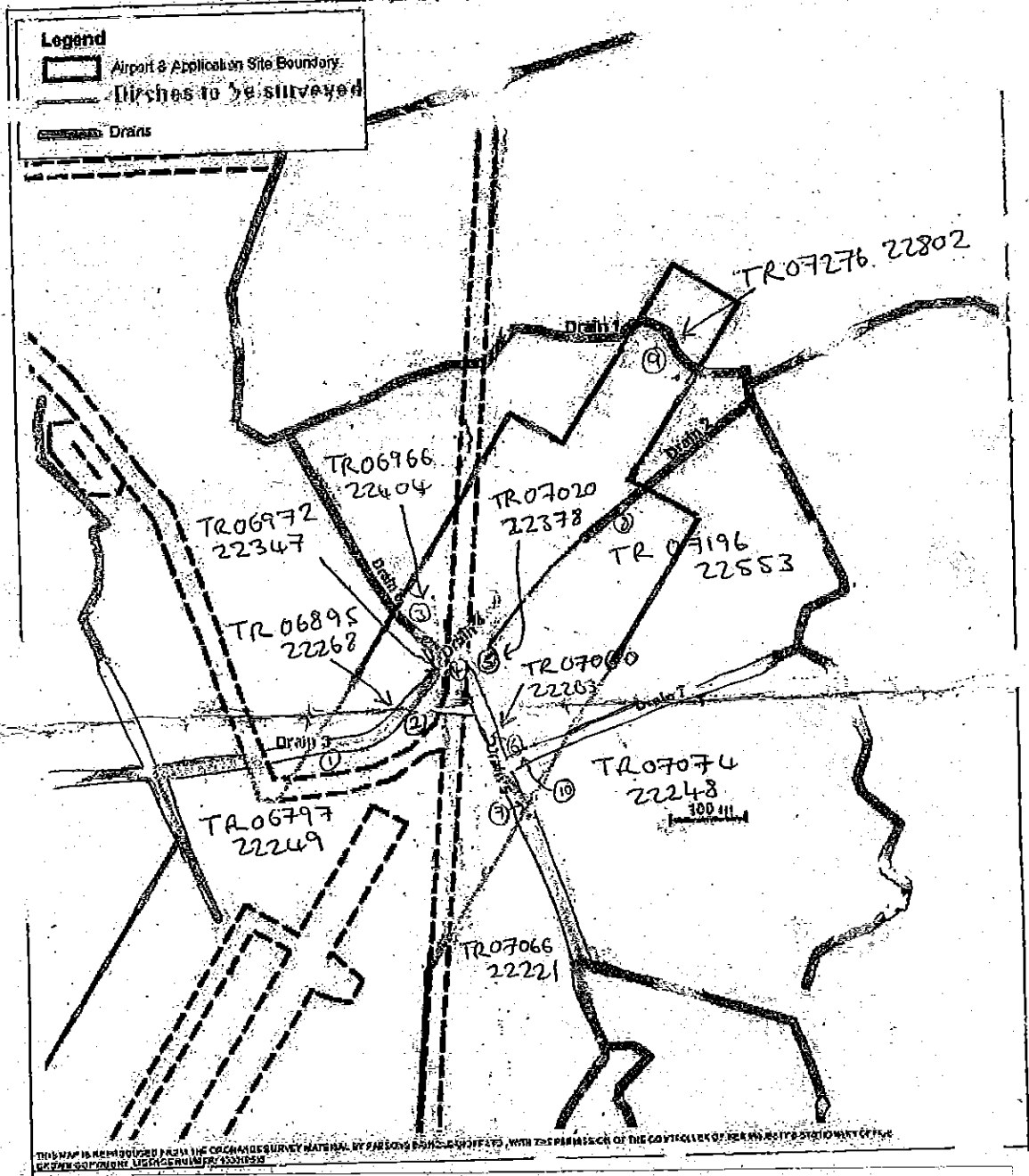
museum voucher material. The species has been subsequently identified as *Bagous alismatis* which is the most frequently recorded species although it is still Nationally Scarce (Hyman and Parsons 1992). All *Bagous* species are uncommon or rare and they are restricted to good quality aquatic habitat.

#### USE OF DITCHES BY MEDICINAL LEECH

The possible use of the drainage ditches affected by the airport extensions by the medicinal leech was raised in discussions with LAA. The surveyor recorded this species in the main ponds on the opposite side of the runway from the main airport buildings in 2005 (Godfrey 2005) but it was not found in the surveys in 2007 (the present survey in December is outside the survey season for recording this species). I understand that they were observed in the drainage ditch in 2006, during an amphibian survey. LAA understand that the personnel conducting that study were not invertebrate specialists, and there is a possibility that they mis-identified medicinal leech. However, several detailed surveys for medicinal leech in the Dungeness, Romney Marsh and wider area have been conducted (e.g., Nixon 1998, Ausden et al 2002 and Leyshon 2004) and these clearly show that medicinal leech can be present in drainage ditches as well as ponds. Therefore, in my professional opinion, it is certainly possible that medicinal leech could be present in the ditch network. I have contributed to the mitigation design which includes the possibility that medicinal leech is present in the ditch network which would be affected by the proposed runway extension.

#### CONCLUSIONS

The results of an aquatic invertebrate survey of ditches affected by proposals to extend the main runway at London Ashford Airport (LAA) are presented. A total of 51 species were recorded from five samples collected in December 2010 and these all comprise common and local species. The low species richness and absence of rare and uncommon species which have been recorded previously is explained by the time of year.



**FIGURE 1: LOCATION OF AQUATIC INVERTEBRATE SAMPLE SITES AT LONDON ASHFORD AIRPORT: MAY AND AUGUST 2007**

**APPENDIX 1: AQUATIC INVERTEBRATES RECORDED FROM LONDON ASHFORD AIRPORT EXTENSION**

## App1

## APPENDIX: AQUATIC MACRO-INVERTEBRATES RECORDED FROM LYDD AIRPORT DITCHES

SAMPLE NO.	1	2	3	4	5
Nematoda				1	
Glossiphonia complanata		1			1
Theromyzon tessulatum	1				2
Anisus leucostoma		2	195	1	
Anisus vortex	1	14		1	9
Aplexa hypnorum			1		
Armiger crista	1		1	2	2
Bithynia leachi	6	153	420	20	51
Bithynia tentaculata				5	
Hippeutis complanata			1		
Planorbis planorbis		12	180		8
Radix balthica			36		
Stagnicola fuscus/palustris			2	1	3
Valvata cristata					1
Pisidium sp		2	4		6
Sphaerium corneum				1	
Asellus aquaticus	4	14	27		22
Asellus meridianus	2		14		1
Crangonyx pseudogracilis	5	19	16	2	19
Copepoda	3	3			2
Ostracoda			1		
Caenis horaria	1	1		1	
Cloeon dipterum	102	34	10	10	59
Coenagrionidae	5				
Ischnura elegans			1		6
Libellulidae (early instars)					2
Limnephilus lunatus		2	1	2	
Triaenodes bicolor		1			1
Cataclysta lemnata		5	3	7	5
Hesperocorixa linnai				1	1
Notonecta glauca				1	1
Plea leachii					2
Sigara dorsalis		1			
Haliphus lineatocollis	1		3		
Haliphus sp (larvae)			1		
Noterus clavicornis	1		1		
Agabus bipustulatus			1		
Graptodytes pictus	1	2			
Hyphydrus ovatus			1		
Laccophilus minutus	2	2	1		1
Dytiscinae (larvae)					2
Anacaena limbata		1		1	
Laccobius biguttatus		1	1		
Hydraena sp (part)	1	1			
Dryops sp (female)		1			
Ptychoptera sp (larvae)			1		
Chironomini (larvae)	1		1		6
Dixella autumnalis (larvae)			2		
Beris geniculata (larvae)			1		
Scatella sp (pupae)		1			
Diptera unidentified (larvae)		1	1	1	