

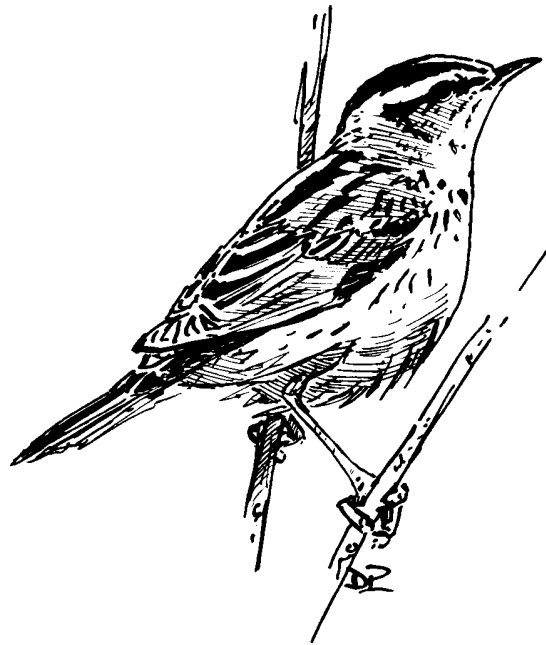


NATURAL
ENGLAND

**Monitoring of aquatic
warbler *Acrocephalus
paludicola* in southern
England in 2007**



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Illustration by Dan Powell

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Summary

Aquatic warbler (*Acrocephalus paludicola*) is the rarest and only globally threatened passerine bird found in mainland Europe. It breeds in wetlands of central and eastern Europe but occurs as a regular passage migrant in the UK. Although numbers in the UK are low (average of 33 birds/year 1996–2000), conservation effort in the UK is recognised as an important part of international effort to support this species, and is included in an international action plan.

The project aims were to establish a systematic and repeatable survey of aquatic warblers across key sites in southern England and to gather further information to inform site protection and management across this network.

Standardised monitoring of aquatic warbler was carried out at five key sites along the south coast of England during the autumn of 2007. Data gathered have been provided to Natural England (NE) to inform site management and designation issues.

Only four birds were trapped as part of this survey and only 11 birds recorded in total during 2007. Based upon current knowledge of records, this was the poorest year since 2002 for aquatic warbler in England.

The report makes a number of recommendations to contribute to the international effort for this species.

- Continue to monitor on existing sites for a further two years followed by a review.
- Investigate the feasibility of including additional locations in Devon and Somerset.
- Further clarify recent trends when data available.
- Improve understanding of habitat requirements and management of sites for aquatic warbler on migration through work with international partners. In particular, disseminate best practice advice to all site managers arising from the 2008 conference in Brittany.
- Facilitate further information exchange through the aquatic warbler e-mail group and the Aquatic Warbler Conservation Team.
- Explore funding to further support aquatic warbler monitoring and habitat management.

This was a joint Natural England and RSPB project funded through the *Action for Birds in England* programme.

1 Introduction

Aquatic warbler (*Acrocephalus paludicola*) is the rarest and only globally threatened passerine bird found in mainland Europe. It is listed as Vulnerable at global level, and classified as endangered at European level. It is included on Annex 1 of the EU Birds Directive, in Appendix II of the Bern Convention and in Appendix 1 of the Bonn convention.

Once widespread and numerous in the fen mires and wet meadows throughout Europe, aquatic warblers have disappeared from much of their former range. The current population estimate is of only 10,500 – 14,200 vocalising males. It is confined to fewer than 40 regular sites in only six countries, with four sites supporting over 80% of the global population.

On migration, aquatic warblers follow a westerly route through western Europe including the UK, and winter in west Africa south of the Sahara.

International effort to conserve aquatic warblers is coordinated through an international action plan. Much of this effort is focused on conserving and managing the areas of suitable wet fen and meadows on the breeding ground, but action in the UK to support aquatic warblers on passage is a key part of this plan. However, given the low numbers of birds involved, their secretive behaviour, and erratic pattern of occurrences, it has proved difficult to determine accurately total numbers and site usage in the UK.

Through ringing and visual observations, aquatic warblers have been recorded regularly at a number of sites in southern England (see table in section 4.1) and on this basis, some sites have been designated or are being considered as Special Protection Area (SPA) for the autumn passage of this species. Monitoring the numbers passing through sites relies mainly on ringing during August and September. Although a number of sites have recorded aquatic warbler, there has been no co-ordinated long-term effort for this species.

Efforts to monitor aquatic warbler at RSPB nature reserves were carried out over two seasons in 1995 (Elmley, Dungeness, Radipole and Marazion) and 1996 (Marazion and Dungeness). However, since then, there has been little or no ringing effort, and as a result, only a few site records being reported here and elsewhere.

In 2006 ringing was again trialled at Marazion for aquatic warbler, as part of the English Nature (now Natural England)/RSPB *Action for Birds in England* Programme with a view to expanding the work across a network of sites in southern England from 2007.

The primary objective of this project is to monitor the use of a network of sites across southern England by aquatic warbler through setting up a standardised repeatable monitoring programme. This will enable improved understanding of their status, site, and network importance and is necessary for the condition assessment of SSSIs and SPAs.

To assess accurately and compare the numbers of aquatic warblers passing through the sites, the ringing effort was based upon those used in previous surveys, e.g. 1995/96, using the same methodology as before. However, tapes were used to maximise number of birds caught.

Although the number of birds passing through the UK appears to be low, a clearer understanding of numbers involved, site and habitat usage is important part of the international action for the species. Aquatic warblers migrate through a series of short hops, and therefore require a network of stopover sites throughout the migratory range. Also, whilst the key wetlands in general receive full statutory protection and are under positive management, a lack of understanding of the specific requirements for aquatic warblers on migration is limiting our ability to manage sites for aquatic warblers alongside management for other priority species.

It is hoped that this project will bring together a network of ringers and site managers across southern England to improve our understanding of aquatic warblers in the England, and to link this group with effort going on elsewhere in western Europe on other migration sites.

2 Objectives

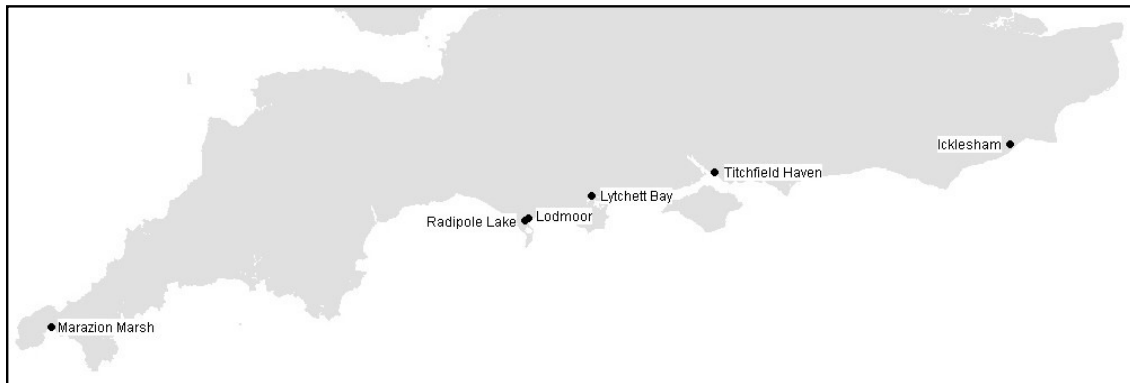
- Set up standardised repeatable monitoring across the most important aquatic warbler sites in southern England.
- Present summary of aquatic warbler records in England since 2000 to support designation of key sites.
- To monitor aquatic warbler within Special Protection Area (SPA) sites designated for this species and provide information on additional sites used by aquatic warbler to inform further designations.
- Review current management for species at the above sites.
- Make recommendations for future action, particularly with regard to monitoring and future management, of the above sites, and for extending the project to include additional sites.
- Establish a network of site managers and those involved in monitor aquatic warblers in southern England, and link this with European sites used on migration.

3 Methodology

Information summaries were collected using the questionnaire set out in Appendix I.

3.1 Site network

The main sites identified include Marazion Marsh (Cornwall), Radipole Lake, Lodmoor and Lytchett Bay (Dorset), Titchfield Haven (Hampshire) and Icklesham (East Sussex). These are shown on the map below.



The designated nature conservation status of these sites is set out in the table below.

Site	Special Protection Area (SPA)	Site of Special Scientific Interest (SSSI)	Nature reserve
Icklesham	Part of Dungeness to Pett Level	Part of Dungeness, Romney Marsh and Rye Bay SSSI	
Lodmoor	Part of Weymouth Wetlands pSPA	Lodmoor	RSPB Nature Reserve
Lytchett Bay	Part of Poole Harbour	Part of Poole Harbour	
Marazion Marsh	Marazion Marsh	Marazion Marsh	RSPB Nature Reserve
Radipole Lake	Part of Weymouth Wetlands pSPA	Radipole Lake	RSPB Nature Reserve
Titchfield Haven	Solent and Southampton Water	Titchfield Haven	National Nature Reserve

3.2 Monitoring effort

Nets were set just prior to first light and ringing continued for a minimum of three hours thereafter. Ringing effort was set at a minimum to focus on the known migration periods of aquatic warbler. The minimum day effort identified for each period is set out below:

16 – 29 July: 1 day per week

30 July – 12 August: 2 days per week

13 August – 7 September: 3 days per week

8 September – 30 September: 2 days per week

3.3 Ringing methodology

All ringing was carried out using standard guidelines set out by the British Trust for Ornithology (BTO). Mist nets set in ringing 'rides' cut through the *Phragmites* and *Schoenoplectus/juncus* beds were based, where applicable, upon the locations used in 1995/96 survey (or in previous ringing effort at the sites). The net lengths were recorded and set, locations mapped and repeated hereafter. Tapes were used to maximise numbers of birds caught and used in accordance with the guidance issued in the Ringers Bulletin (V11, N12), particularly with regards volume and location and would, in any case, not be switched on more than 30 minutes prior to first light. A standardised tape was provided to all ringers in the project (a mixture of aquatic warbler and grasshopper warbler but may contain other species if thought appropriate and more effective).

3.4 Data collection

All ringing was carried out using guidelines set out by the BTO, and by BTO registered and qualified ringers. All of the work was undertaken by locally based ringers registered with the BTO, with some RSPB staff time in set up and management of volunteers and data analysis and report writing. Only ringers on RSPB sites were registered as RSPB volunteers. Health and safety for RSPB sites was covered by the RSPB. Private and non-RSPB sites covered their own health and safety requirements.

3.5 Data collected

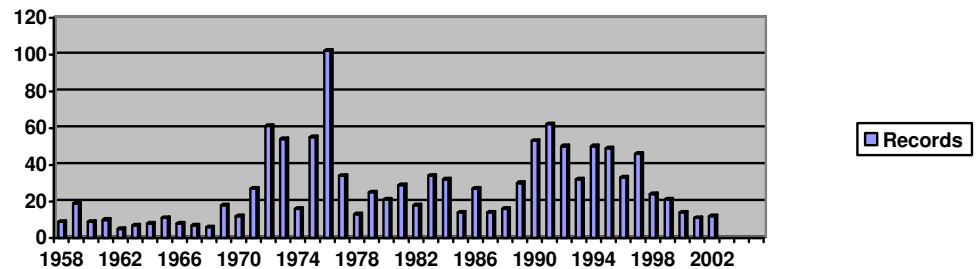
Standard data (e.g. time of capture, age, sex and ring number [either new or existing]) were collected as with any ringed bird. A standardised set of biometrics was also taken, including wing length (maximum chord), weight, fat and muscle scores and overall moult score (primary moult score optional). In addition, ringers were asked to take a series of photographs of each bird showing key plumage characteristics (e.g. degree of wear in feathers, streaking of flanks etc), and to take a single feather from each bird, and label and store it for future isotope studies to determine the origin of the birds.

4 Results

4.1 Historic information

Between 1958 - 2002, there were 1,200 records of aquatic warbler in the UK (scarce migrants website). Records for the last five years are currently being collated. The annual totals and the latest five-year rolling mean are set out below:

Annual totals for aquatic warbler records 1958-2002



Aquatic warbler UK rolling five year mean 1998 – 2002

	1998	1999	2000	2001	2002	Mean
Records	24	21	14	11	12	16

Source: Scarce Migrants website

4.2 Aquatic warblers recorded in 2007

Across the project sites, four birds were trapped in 243 trapping hours at four sites. In total including these birds, only 11 birds were recorded in 2007 in the UK.

Birds trapped	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
All sites	0	0	3	1
Icklesham	0	0	2	0
Lodmoor	-	-	-	-
Lytchett Bay	0	0	0	0
Marazion Marsh	0	0	0	0
Radipole Lake	0	1	0	0
Titchfield Haven	0	0	0	1

The 11 individuals were recorded between 7 August (Kent) and 1 October 2007 (Isles of Scilly) [per birdguides]. These came from Devon (two), Hampshire (two), Dorset (two), West Sussex (two), Gwent (one), Kent (one) and the Isles of Scilly (one) and included the four individuals recorded already as part of this project monitoring. This is the lowest count since 2001 following the recent trend of low numbers.

The most recent national assessment of the population size was 33 (five year mean 1996 – 2000) (Baker et al 2006), which puts the figure of 11 into context.

4.2.1 Other *Acrocephalus* warblers recorded at project sites

In addition to aquatic warblers, 11,606 *acrocephalus* warblers were caught. The ratio of juveniles to adults of *acrocephalus* indicated a poor breeding season, and ringing totals were down at most sites.

<i>Birds trapped</i>	<i>16-29 July</i>	<i>30 July – 12 August</i>	<i>13 August – 7 September</i>	<i>8 – 30 September</i>	<i>Total</i>
<i>All sites</i>	870	4,325	5,087	1,324	11,606
<i>Icklesham</i>	702	3,582	4,264	1,147	9,695
<i>Lodmoor</i>	-	-	-	-	-
<i>Lytchett Bay</i>	16	60	180	1	257
<i>Marazion Marsh</i>	78	59	82	7	226
<i>Radipole Lake</i>	30	79	105	7	221
<i>Titchfield Haven</i>	44	545	456	162	1207

4.3 Feather collection

One feather was collected at Radipole Lake and is currently in storage waiting for isotope testing to identify origin of bird.

4.4 Effort

Trapping covered the period 19 July – 30 September 2007. All sites had a good spread of coverage with Radipole Lake, Titchfield Haven and Icklesham covered fully, more or less. At Marazion, trapping finished on 9 September as the wind made the site unsuitable on days available for trapping. No ringing was undertaken in 2007 at Lodmoor. Both weather and the availability of volunteers affected coverage.

Monitoring of aquatic warbler *Acrocephalus paludicola* in 2007

<i>Trapping (dates)</i>	<i>16-29 July</i>	<i>30 July – 12 August</i>	<i>13 August – 7 September</i>	<i>8 – 30 September</i>
<i>All sites</i>	19, 20, 21, 22, 24, 27, 28 July	30 July, 2, 3, 4, 7, 8, 9, 10, 11, 12 August	13, 17, 18, 19, 23, 24, 25, 26, 27, 28, 29, 30, 31 August, 1, 2, 4, 5, 6 September	8, 9, 11, 15, 16, 22, 23, 26, 27, 28, 29, 30 September
<i>Icklesham</i> (trapping was carried out most days)	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
<i>Lodmoor</i>	-	-	-	-
<i>Lytchett Bay</i>	22, 28 July	3, 4, 9, 11 August	13, 17, 24, 25, 29, 31 August, 1, 4, 5 September	22 September
<i>Marazion Marsh</i>	19 July	30 July, 3, 8 August	17, 25, 27, 30 August, 2, 6 September	9 September
<i>Radipole Lake</i>	19, 20 July	7, 9, 10, 12 August	17, 23, 24, 25, 31 August, 1, 6, 7 September	8, 15, 22, 26, 27, 28 September
<i>Titchfield Haven</i>	19, 21, 22, 24, 27 July	30 July 2, 4, 7, 9, 11, 12 August	17, 18, 19, 24, 25, 26, 27, 28, 30 August, 1, 2, 4, 6 September	8, 9, 11, 15, 16, 22, 23, 29, 30 September

The project proposed a number of trapping days per period. The table below sets out the number carried out and the grey shading indicated that the number of trapping days proposed were achieved.

<i>Trapping days</i>	<i>16-29 July</i>	<i>30 July – 12 August</i>	<i>13 August – 7 September</i>	<i>8 – 30 September</i>
<i>Trapping days target</i>	2	4	9	6
<i>Average</i>	4.5	6.5	10	8
<i>Icklesham</i>	13	14	15	23
<i>Lodmoor</i>	-	-	-	-
<i>Lytchett Bay</i>	2	4	9	1
<i>Marazion Marsh</i>	1	3	6	1
<i>Radipole Lake</i>	2	4	8	6
<i>Titchfield Haven</i>	4	7	13	9

4.5 Weather

The summer period until the end of August was dominated by wet, cool conditions with predominantly westerly and northerly airstreams considered unsuitable for movement of birds across the English Channel. The weather was also thought to have affected breeding success of *acrocephalus* warblers. Thereafter, although high pressure dominated, many of the winds were from a northerly sector.

4.6 Aquatic warbler recording habitat

At Radipole, the aquatic warbler was trapped in reed bed/grazed rush pasture habitat. At Titchfield Haven, the bird was trapped along in reed fringed ditch and areas of low sedge willow scrub. No information was available for the habitat in which the aquatic warblers were trapped at Icklesham.

4.7 Ringing site habitat

Many of the ringing rides crossed different habitat types where it is thought the edge effect increases the chances of catching birds. The following habitats are included in the ringing programmes at the various sites.

	<i>Salt marsh</i>	<i>Tyfa beds</i>	<i>Schoenoplectus beds</i>	<i>Rush pasture</i>	<i>Reed bed</i>	<i>Other tall Vegetation</i>	<i>Scrub</i>
<i>Icklesham</i>						X	X
<i>Lodmoor</i>							
<i>Lytchett Bay</i>							
<i>Marazion Marsh</i>		X	X		X		X
<i>Radipole Lake</i>				X	X	X	X
<i>Titchfield Haven</i>					X	X	X

4.8 Protection and management for aquatic warbler

Aquatic warbler is a UK Biodiversity Action Plan Species. Two local Biodiversity Action Plans include this species within their plans: Cornwall and Gwent. It is also a Red listed Bird of Conservation Concern because of its global conservation status and that more than 50% of the passage population is restricted to 10 or fewer sites.

Of the sites within the current project, Marazion Marsh SPA/SSSI and Icklesham (part of Dungeness, Romney Marsh and Rye Bay SSSI) are the only sites that are so designated for their aquatic warbler interest. Other sites receive protection through SSSI status (and are managed as nature reserves); however aquatic warbler is not a designated feature, and therefore there is no requirement for specific management or monitoring. Both Marazion Marsh and Radipole Lake include aquatic warbler within their RSPB reserve management plans.

The table below sets out the current nature conservation designations and management of the sites within this aquatic warbler monitoring project.

	SPA	SSSI	Nature Reserve	Site management plan species	General habitat management	Species specific management
<i>Icklesham</i>	X	X			X	
<i>Lodmoor RSPB</i>	X	X	X	X	X	
<i>Lytchett Bay</i>	X	X	X		X	
<i>Marazion Marsh RSPB</i>	X	X	X	X	X	X
<i>Radipole Lake RSPB</i>	X	X	X	X	X	X?
<i>Titchfield Haven NNR</i>	X	X	X		X	

There is little species-specific management taking place because there is little clear advice on what aquatic warbler require. This information needs to be clarified and made available to managers.

4.9 Publicity and Communication

Due to the lack of records for aquatic warbler, no press releases were issued. A presentation and poster is being produced for the Life Project conference in Brittany in 2008.

Project sites were in e-mail contact and meetings included visits to Icklesham and Radipole Lake. A review meeting was held in October 2007 and all those involved were invited to discuss the project and future actions. This included improving communication between different projects to share information and encourage future action. Short-term and final reports were submitted to the *Action for Birds in England* steering group, and the Cornwall Biodiversity Action Reporting process is being updated with the latest information. The data have been provided to Natural England to inform the decisions on site designations including potential Special Protection Area (SPA).

5 Discussion and conclusion

In the UK 2007 was a poor year for aquatic warblers with few birds trapped or seen. Eleven birds is the lowest total since 2002 continuing a recent trend of low numbers. The weather conditions during the autumn migration of 2007 were poor for cross channel migration, with sustained westerly or northerly cool humid airstreams until at least the end of August thought to have played a role in bird records. Ringing indicated that this also affected the breeding success of *acrocephalus* warblers and their migration through sites.

The weather also affected ringing activity, which was particularly a problem at Marazion where conditions were often unsuitable when ringers were available. Most of the sites rely on the dedication of one or two individuals, which means a significant effort by these people was required. The RSPB will be promoting suitable sites under their management to ringers to help with the project next autumn. At Lodmoor, the RSPB was unable to undertake the ringing required but has now identified ringers to help with the project.

Whilst most sites have some level of protection, understanding of the requirements of aquatic warbler on migration is poorly known. Work to improve knowledge has been carried out as part of a LIFE Project in Brittany. Attendance at the LIFE Project Conference in September 2008 is planned, to share findings of the work in the UK and gather information from elsewhere in Europe to improve land managers' knowledge on the requirements for aquatic warbler.

While the proportion of the global aquatic warbler population regularly migrating through England is admittedly low, the UK population is still internationally important. Research findings are vital in informing best management of these stop-over sites, which are very important for a species that cannot make uninterrupted journeys over thousands of kilometres without them. The only comparable work to that being done in the UK is that undertaken in Brittany by the conservation NGO (non-governmental organisation) Bretagne Vivante-SEPNEB (but this LIFE Project ends in 2008), and in Spain at the Laguna de la Nava near Burgos by the NGO EuroNatur and the local government (a LIFE project that finished in 2007). There is concern that the availability of suitable stopover sites, particularly in Spain, Morocco and Mauritania is or might be becoming a limiting factor for aquatic warbler. This makes the work on UK sites additionally valuable.

There is thus a clear need to develop a network of well connected sites which link the breeding grounds and wintering grounds of the aquatic warbler. The continuation of the project would be vital to achieve this. It is therefore proposed to continue the project for a further two years, followed by a review.

6 Recommendations

- Continue to monitor on existing sites for a further two years followed by a review.
- Investigate the feasibility of including additional locations in Devon and Somerset.
- Further clarify recent trends when data available.
- Improve understanding of habitat requirements and management of sites for this species through work with international partners. In particular, disseminate best practice advice to all site managers arising from the 2008 conference.
- Facilitate further information exchange through the aquatic warbler e-mail group and the Aquatic Warbler Conservation Team.
- Explore funding to further support aquatic warbler monitoring and habitat management.

7 Acknowledgements

Many thanks to Dave Flumm (RSPB), Jenny Parker (RSPB) and Kester Wilson at Marazion Marsh, Nick Tomlinson (RSPB), Nick Quintrel (RSPB) and Andrew Taylor (RSPB) at Radipole Lake, Shaun Robson and the Stour Valley Ringing Group at Lytchett Bay, Barry Duffin (Hampshire County Council) at Titchfield Haven National Nature Reserve (NNR) and Stephen Rumsey at Icklesham for providing technical input and ringing data. To Pete Fraser, the statistician for the British Birds Rarity Committee, for the historical information, and Bird Guides for information on records for 2007.

Also thanks to Ken Smith (RSPB) for inputting into the review meeting and Allan Drewitt (Natural England) for comments on drafts of the text.

This was a joint Natural England and RSPB project funded through the *Action for Birds in England* programme, a conservation partnership between NE and the RSPB.

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Websites:

www.aquaticwarbler.net

(BirdLife International Aquatic Warbler Conservation Team)

www.ukbap.gov.uk

www.scarce-migrants.org.uk

www.jncc.gov.uk

www.birdguides.co.uk

Appendix I Questionnaires

Aquatic Warbler Questionnaire

Site Name: Marazion SPA

Site Ringer: Kester Wilson

Please complete the following table or send details of relevant information.

	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
Trapping (dates)	19 July	30 July, 3, 8 August	17, 25, 27, 30 August, 2, 6 September	9 September
Total number of aquatics caught (and date)	0	0	0	0
Total number of <i>Acros</i> caught	78	59	82	7
Net area (m2)				
Trapping hours	3	7.5	15	2
Tape hrs	0	0	5	0
Number feathers retained for isotope analysis (date)	0	0	0	0
Weather				
Wind direction on trapping days				
Dominant wind direction for the period				
Precipitation for period (mm)				
Temperature for period (mean)				

Other records for aquatic warbler that were not ringed (numbers and date):

Zero.

Comments on above and thoughts for next year:

- 1 A poor year for reed, sedge and Cetti's warblers.
- 2 High ratio of adult: juvenile reed and sedge warblers demonstrating a poor breeding season.
- 3 Mist netting finished 9 September due to strong winds thereafter.

Aquatic Warbler Questionnaire

Site Name: Radipole Lake

Site Ringer: Nick Tomlinson

Please complete the following table or send details of relevant information.

	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
Trapping (dates)	19, 20 July	7, 9, 10, 12 August	17, 23, 24, 25, 31 August, 1, 6, 7, 8 September	15, 22, 26, 27, 28 September
Total number of aquatics caught (and date)		1 12 August		
Total number of <i>Acros</i> caught	30	79	105	7
Net area (m2)	Variable, please see report			
Trapping hours	Variable, please see report			
Tape hrs	As per trapping hours			
Number feathers retained for isotope analysis (date)	0	1	0	0
Weather				
Wind direction on trapping days	Not recorded, but have asked Met Office for specific wind reports for two days either side of the capture dates for both 2006 and 2007			
Dominant wind direction for the period				
Precipitation for period (mm)				
Temperature for period (mean)				

Other records for aquatic warbler that were not ringed (numbers and date):

Comments on above and thoughts for next year:

Aquatic Warbler Questionnaire

Site Name: Titchfield Haven NNR

Site Ringer: Barry Duffin

Please complete the following table or send details of relevant information.

	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
Trapping (dates)	19, 21, 22, 24, 27 July	30 July, 2, 4, 7, 9, 11, 12 August	17, 18, 19, 24, 25, 26, 27, 28, 30 August, 1, 2, 4, 6 September	8, 9, 11, 15, 16, 22, 23, 29, 30 September
Total number of aquatics caught (and date)				1 on 29 September
Total number of <i>Acros</i> caught	44	545	456	162
Net area (m ²)	404	404	742	742
Trapping hours	8	29	48	31
Tape hrs	13	36	60	40
Number of feathers retained for isotope analysis (date)				
Weather				
Wind direction on trapping days				
Dominant wind direction for the period				
Precipitation for period (mm)				
Temperature for period (mean)				

Other records for aquatic warbler that were not ringed (numbers and date):

Comments on above and thoughts for next year:

The only Acro tape played all season was that of aquatic warbler. The single aquatic warbler was trapped on the only day of the season when there was a malfunction of the tape setup.

Of the reed warbler catch, 69% were juveniles compared with 90% in 2006. Compared with 2006, the total catch was 50% down.

Of the sedge warbler catch, 88% were juveniles compared with 94% in 2006. Compared with 2006 the total catch was 6% down.

A total of 133 grasshopper warblers was a 55% reduction on previous year.

Aquatic Warbler Questionnaire

Site Name: Lytchett Bay

Site Ringer: Shaun Robson – Stour Ringing Group

Please complete the following table or send details of relevant information.

	16-29 July	30 July – 12 August	13 August – 7 September	8 – 30 September
Trapping (dates)	22, 28 July	3, 4, 9, 11 August	13, 17, 24, 25, 29, 31 August, 1, 4, 5 September	22 September
Total number of aquatics caught (and date)	0	0	0	0
Total number of <i>Acros</i> caught	16	60	180	1
Net area (m2)	110m daily Except 22 nd when 50m	110m daily	110m daily Except 29 th , 4 th , 5 th when 70m	70m
Trapping hours	8	13	24	3
Tape hrs	8	13	24	3
Number feathers retained for isotope analysis (date)	0	0	0	0
Weather	Dry 1-2/8	Dry 0/8 on each date	Dry, variable cloud cover but never overcast	
Wind direction on trapping days	Still – 22 nd W3 – 28 th	Still – 3 rd , 4 th , 9 th SW2 – 11 th	Still – 17 th , 24 th , 31 st , 5 th NE1 – 25 th , N1-3 29 th , 1 st , 4 th , W1-3 – 13 th ,	
Dominant wind direction for the period	W	W	N	
Precipitation for period (mm)				
Temperature for period (mean)				

Other records for aquatic warbler that were not ringed (numbers and date):

Comments on above and thoughts for next year:

There were very few days where the weather was right for aquatics. On those that were, we were unable to ring. We also played grasshopper warbler and caught seven birds – five on one day (24 August). In recent years, we have caught up to 22, some as early as the last week of July. This year was a late year. Our peak day for sedge was 13 Aug (49) whereas we might normally expect it up to two weeks earlier than that.

Appendix II Photographs of aquatic warbler Radipole Lake August 2007



ACTION FOR BIRDS IN ENGLAND

The Aquatic Warbler Monitoring Project is part of *Action for Birds in England*, a conservation partnership programme between Natural England and the RSPB taking action for priority bird species in England



The RSPB speaks out for birds and wildlife, tackling the problems that threaten our environment. Nature is amazing - help us keep it that way

The Royal Society for the Protection of Birds (RSPB) is a registered charity: England and Wales no 207076, Scotland no SC037654.



Natural England works for people, places and nature to conserve and enhance biodiversity, landscapes and wildlife in rural, urban, coastal and marine areas