

**NATIONAL REPORT OF THE REPUBLIC OF HUNGARY  
FOR THE AQUATIC WARBLER MOU AND ACTION PLAN  
2003-2005**



Report on the implementation of the Action Plan associated with the Memorandum of Understanding Concerning Conservation Measures for the Aquatic Warbler *Acrocephalus paludicola* in Hungary, for the period 2003-2005.

Approved by: Mr. László Haraszthy, Deputy State Secretary  
Office of Nature Conservation, Ministry of Environment and Water

## GENERAL INFORMATION

<p><b>Which agency or institution has been primarily responsible for the preparation of this report?</b></p> <p>Hortobágy National Park Directorate</p>
<p><b>List any other agencies, institutions, or NGOs that have provided input:</b></p> <p>Office of Nature Conservation, Ministry of Environment and Water</p>
<p><b>Reports submitted to date:</b></p> <p>None</p>
<p><b>Period covered by this report:</b></p> <p>from _ 30/04/2003 _ to _____ 31/12/2005 _____ (dd/mm/yyyy) (dd/mm/yyyy)</p>
<p><b>Memorandum in effect in Signatory State since (dd/mm/yyyy):</b> 30/04/03</p>
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## OBJECTIVES

### 1.0 POLICY AND LEGISLATIVE

#### 1.1. *To promote national and international broad policies and legislation which favour the conservation of the Aquatic Warbler and its habitat*

##### 1.1.1. *Promote the full protection of the Aquatic Warbler and its habitats through national and international legislation*

a) Is the Aquatic Warbler protected under national legislation in your country?

- Yes, the species is protected and protection level is sufficient
- Yes, the species is protected, but protection level is not sufficient
- No, the species is not protected

b) If Yes, please describe the state of protection and limitations and conservation responsibilities this protection status imposes on the state, conservationists and land-users.

The species is strictly protected. Article 43 of Act No. 53 of 1996 on nature conservation prescribes the following:

(1) It shall be prohibited to disturb, harm, torture or destroy protected animal species, or to threaten the success of their breeding or any other vital functions as well as to destroy or damage their habitats, sites of occurrence, shelters, feeding, nesting, resting or roosting places.

(2) The authorisation of the Inspectorate shall be required for-

- a) any population control;
- b) the collection, capture, killing, possession and training of any individual;
- c) the breeding in captivity of any individual;
- d) the taxidermal preparation and preservation or the possession of such preparations of any individual;
- e) the keeping of any individual in live animal collections;
- f) the supplementing of any population with individuals from foreign populations;
- g) the artificial exchange of genetic matter between populations;
- h) the exchange or sale and purchase of any individual;
- i) the exportation from, importation to or transportation through the Republic of Hungary of any individual;
- j) the reintroduction or introduction of any individual;
- k) the application of alarming methods in order to prevent any damage caused by them;

- l) the translocation of the nest of any individual;
- m) the domestication of any individual;

(3) The authorisation specified under paragraph (2) above shall not exempt from the requirement for veterinary authorisations subject to other provisions of law.

(4) In the case of strictly protected animal species, the authorisation by virtue of paragraph (2) above shall only be granted out of nature conservation or other public interest.

(5) In the case of strictly protected species, the administrative authority of first instance for the authorisation of activities subject to paragraph (2) above shall be the Chief Inspectorate for Environment, Nature and Water.

c) If the Aquatic Warbler is not protected or protection level is not sufficient, please describe what your country is planning to do to ensure highest possible protection of the species.

d) Is there national legislation in place in your country that ensures effective protection of Aquatic Warbler habitat (breeding, stop-over and wintering sites), including prevention of potentially detrimental activities (drainage, mineral extraction, industry, etc.).

Yes  No

See legislation above.

e) If Yes, please provide details.

The Hortobágy National Park is the only breeding site in Hungary. The whole of the breeding area is strictly protected and the needs of the species play a central role in the management plan of those areas. No regular stopover sites or migration routes are known. Occurrences of migrant birds outside the Hortobágy are very rare and have so far been mainly confined to other national parks, such as the Kiskunság NP and the Fertő-Hanság NP.

f) If No, please describe measures taken to ensure protection of Aquatic Warbler breeding habitats.

*1.1.2. Seek national or international policy incentives to maintain suitable farming practices at breeding sites which are impacted by drainage or threatened by succession*

Are there any national or international policy incentives to maintain suitable farming practices at breeding sites in your country (agro-environmental schemes, etc.)?

Yes  No  Country is outside of breeding range

If yes, please describe briefly the nature of the incentives and whether they are effectively applied or used by farmers and land-managers.

Since the National park Directorate is the conservational manager and owner of the breeding area, all agricultural activities (grazing, hay-cutting) are regulated by the National Park Directorate, in accordance with the needs of this (and other) species.

If no, please describe what measures are being taken to ensure availability of such incentives.

## 2.0 SPECIES AND HABITAT PROTECTION

### 2.1. *To promote adequate protection of the breeding sites and remove key factors adversely affecting the breeding habitat*

#### 2.1.1. *Seek designation as protected areas of all sites regularly holding breeding Aquatic Warblers.*

- a) In the table attached (Annex I), please provide details for all regularly occupied Aquatic Warbler breeding sites in your country and indicate their protection status (*please expand the table if necessary*).
- b) If Aquatic Warbler breeding sites currently are not fully protected or protection level is not sufficient, please provide information about constraints and what your country is planning to do to ensure full and adequate protection of these sites.
- c) If Site Management Plans have not been developed for all Aquatic Warbler breeding sites, please describe what hampers development of Management Plans and what your country is doing to ensure development, approval and implementation of Site Management Plans for regular Aquatic Warbler breeding sites.
- d) Please advise what assistance you would require to complete or improve existing Site Management Plans.

#### 2.1.2. *Prevent habitat alteration, habitat fragmentation, pollution and other factors that could be detrimental to the Aquatic Warbler in its breeding sites*

- a) Are new *development* projects that could potentially have a detrimental effect on current or potential Aquatic Warbler breeding sites (such as drainage, peat extraction, construction of highways, etc.) subject to environmental impact assessment in your country?

Yes     No     Country is outside  
of breeding range

Yes, in case such a development project arose in the only known regular site for the species, the Hortobágy National Park, it would be subject to an environmental impact assessment under national legislation as the area enjoys national protection.

- b) Have there been any potentially detrimental projects *implemented* in any Aquatic Warbler habitat in your country since signing this Memorandum of Understanding?

Yes     No

- c) If yes, indicate sites involved, give details and describe the outcome of impact monitoring if available.

- d) Has implementation of any potentially detrimental project in any Aquatic Warbler habitat in your country been *halted* since signing this Memorandum of Understanding?

Yes     No

There has not been any plan for detrimental development in the area.

- e) If Yes, please give details.

## 2.2. *To manage the breeding habitat to increase numbers, productivity and distribution*

### 2.2.1. *Regulate water levels and restore natural water conditions*

- a) Has water management been implemented at Aquatic Warbler breeding sites in your country?

Yes    No    Country is outside of breeding range

- b) If Yes, please describe actions taken, sites involved and effects expected/achieved.  
The only Hungarian breeding population are divided into two subpopulations inside the National Park in a range of 15 km. The water level in both sites is regulated according to the needs of this species via canals, dykes and sluices.

- c) What constraints are limiting implementation of these activities at other sites in need of effective water management?

No other sites

### 2.2.2. *Prevent natural succession of the vegetation by undertaking management where necessary*

- a) Has vegetation management been undertaken at Aquatic Warbler breeding sites in your country to prevent natural succession?

Yes    No    Country is outside of breeding range

- b) If Yes, please describe actions taken (mowing, bush-removing, etc), what equipment was used for vegetation management and how efficient it was. Please refer to reports if available and comparative analysis of different types of equipment if it was conducted.

- c) If No, what constraints are limiting vegetation management at other sites where it is needed and what is your country doing to ensure proper vegetation management at Aquatic Warbler breeding sites?

Vegetation management is not necessary since it is the climax vegetation in which the species prefers to breed.

### 2.2.3. *Hand-scything and mowing*

- a) If historical information is available, please describe to which extent current Aquatic Warbler breeding sites were hand scythed and mown.

It was only reedbeds that were traditionally cut, not the wet grasslands.

- b) Are hand-scything and mowing being applied for habitat conservation for the Aquatic Warbler in your country?

Yes    No    Country is outside of breeding range

- c) If Yes, please describe how this was approached, which sites were involved and the area covered. Please provide details if conservation effect of hand-scything and mowing has been evaluated. Please refer to published materials if available.

- d) What constraints are limiting hand-scything and mowing at sites where extensive habitat management is needed?

Nothing, it is not necessary.

#### 2.2.4. *Controlled burning*

a) Is controlled burning a legal habitat management tool in your country?  
 Yes  No

b) If Yes, is burning used as a habitat management tool for Aquatic Warbler? Please describe actions taken, sites involved and effects achieved or expected. Please refer to published materials if information regarding the effects of controlled burning has been summarized and published.

c) If No, then what actions are being undertaken to legalize controlled burning?

Controlled burning is not necessary in the breeding sites. However, this method is used in other areas in the National Park for managing other habitat types.

#### 2.2.5. *Grazing*

a) Has grazing been used for habitat management at Aquatic Warbler breeding sites in your country?

Yes  No  Country is outside of breeding range

b) If yes, please describe which animals are used, which sites are involved and what effects are expected/achieved. Please give reference to published materials if information regarding the effects of grazing has been summarized and published.

Two privately owned herds of cattle are allowed to graze extensively after the breeding period.

#### 2.2.6. *Disseminate habitat management recommendations to land managers*

a) Are Aquatic Warbler habitat management recommendations being disseminated to land managers and other interested parties in your country?

Yes  No  Country is outside of breeding range

b) If Yes, please describe ways of dissemination of habitat management recommendations to land managers used: events, publications, etc. Please give reference to published materials.

c) If No, then what constraints are limiting dissemination of habitat management recommendations and what should be done to overcome these constraints?

No constraints, but this measure is not necessary, since the only known breeding site is to be found in a state-owned national park area, where land management is fully controlled by state nature conservation.

d) Please advise if there is successful experience other Range States can draw on and what assistance your country would require to help share this information.

### 2.3. *To protect the Aquatic Warbler and its habitat in the winter quarters and along the migration route*

#### 2.3.1. *Promote the protection and appropriate management of wintering and passage sites*

a) In the table attached (Annex I), please provide details about major Aquatic Warbler passage and wintering sites in your country (*please expand the table if necessary*)

b) Are primary Aquatic Warbler passage/wintering sites appropriately managed in your country?

Fully  Partially  No

No regular passage/wintering sites are known in the country.

c) Please list on-going and implemented projects and provide brief information about results achieved.

d) What are the remaining gaps and what is your country planning to do to ensure sufficient protection and management of primary passage/wintering sites?

#### **2.4. To restore habitats for the Aquatic Warbler**

##### **2.4.1. Undertake the ecological restoration of potential breeding sites**

a) Have potential or irregularly occupied Aquatic Warbler breeding sites in your country been evaluated?

Fully  Partially  No  Country is outside of breeding range

b) If Yes, what initiatives aimed at ecological restoration of potential breeding sites have been undertaken in your country? Which sites are involved and what effects are expected/achieved?

Habitat selection of this species has been investigated and potential breeding sites have been identified. However, no other breeding site has been discovered so far.

c) If No, what are the constraints and which actions should be taken in order to overcome these constraints?

### **3.0 MONITORING AND RESEARCH**

#### **3.1. To develop and implement a monitoring programme enabling population trends to be tracked**

##### **3.1.1. Distribution of a methodology for counting Aquatic Warblers**

a) Is the methodology adopted for counting Aquatic Warblers used on the national level *different* to what is advised in the Aquatic Warbler Species Action Plan?

Yes  No  No methodology is adapted

b) If Yes, please describe briefly possible differences and amendments.

c) Does your country have experience applying this methodology and what can be learned from this experience?

d) What does your country do to distribute and familiarize relevant institutions/specialists with this methodology?

NGO-activists were contacted and the methods were described to them.



3.1.2. Undertake national surveys to estimate breeding populations

- a) Have national (all-country) surveys of Aquatic Warbler breeding population been undertaken in your country?

- Yes (give years) \_\_\_\_\_ 1990-2005 annually \_\_\_\_\_  
 No  
 Country is outside of breeding range

- b) If Yes, what methodology is used (full counts, transect counts, etc.) and what organization was coordinating the survey?

Full counts in breeding sites, transect counts in possible breeding sites. Hortobágy National Park Directorate organised the surveys.

- c) What is the size and trend of the national breeding population (vocalizing males)? Please refer to published materials if applicable.

Year of survey:	Year of survey:	Year of survey:
Population size:	Population size:	Population size:

1971	1972	1977	1978	1979	1980
19	9	89	75	105	115

1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
74	158	113	165	207	140	198	171	203	207

1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
199	228	303	413	425	510	600	637	646	688

2001	2002	2003	2004	2005
706	338	432	533	628

- d) If Yes, to which extent was the territory of your country covered by the survey:

- Fully (> 90 % of suitable habitats surveyed)  
 High (60-90 % of suitable habitats surveyed)  
 Medium (30-60 % of suitable habitats surveyed)  
 Low (< 30 % of suitable habitats surveyed)

- e) When is the next national (all-country) survey of the Aquatic Warbler planned in your country?

It is planned annually.

- f) If no national surveys have been conducted, please indicate existing constraints and what you country going to do to ensure that national surveys of the Aquatic Warbler are conducted?

3.1.3. Collect data at the major known passage sites and identify further resting sites

- a) Have studies at known Aquatic Warbler passage sites been conducted in your country?

Yes  No

- b) If Yes, please describe briefly, which major passage sites are being monitored, what monitoring is being conducted (Aquatic Warbler population, habitat parameters, impact assessment, migration strategy, etc) and which organizations are involved?

No regularly used stopover sites are known. Several ringing station operate annually in wetland habitats throughout the country, but only a few Aquatic Warblers have been caught so far: 16 August 1975 in Dinnyés Protected Area, 1 June 1976 in 21<sup>st</sup> district of Budapest, 11 August 1976 in Dinnyés Protected Area, 26 May 1978 at Dunaharaszti, 14 August 1978 at Szigetcsép (2 specimens), 23 May 1982 at Algyő (2 specimens), 21 April 1996 in Kis-Balaton Landscape Protection Area, 23 and 30 April 2005 at Fertőújlak, Fertő-Hanság NP.

Sight records are even more rare outside the Hortobágy National Park, and are collected and authenticated by the Checklist and Rarities Committee of BirdLife Hungary. Only one record has been thus published: 24 April 1993 at Apaj, Kiskunság NP.

- c) What are the main findings and what conservation implications do they have?

Despite the growing number of birdwatchers and regular ringing stations, the species remains very rarely observed on migration, which does not entail any conservation implications, as most sites of occurrence on migration are in protected areas.

- d) If Yes, to what extent are major known Aquatic Warbler passage sites are being monitored in your country?

- Fully (> 90% of known sites)
- High (60-90 % of known sites)
- Medium (30-60 % of known sites)
- Low (< 30 % of known sites)

- f) To what extent have major Aquatic Warbler passage sites been identified in your country?

- Fully (> 90 % of suitable habitats surveyed)
- High (60-90 % of suitable habitats surveyed)
- Medium (30-60 % of suitable habitats surveyed)
- Low (< 30 % of suitable habitats surveyed)
- No monitoring is conducted

- g) What are the gaps and what is your country doing to address them?

Our present knowledge depends upon the data of ringing centers. More ringing centers would give a more detailed picture of the migration of this species. The number of Constant Effort Sites (CES programme) is increasing annually, covering a variety of habitats throughout the country. The Ministry of Environment and Water supports financially the Ringing Centre presently operated by BirdLife Hungary and the ringing schemes of regular ringing stations (Actio Hungarica) as well as the CES programme. The Ministry also supports financially the Waterbird Census whereby experienced ornithologists regularly survey 21 major wetlands in Hungary for waterbirds (but of course, would report any rarities such as Aquatic Warbler outside the Hortobágy).

#### 3.1.4. *Identify major wintering areas*

- a) Have studies aimed at identifying Aquatic Warbler wintering areas been conducted in your country?

Yes  No  Country is outside of wintering range

- b) If Yes, what are the main findings and conservation implications? If available, please refer to published reports.
- c) If Yes, To what extent was the territory of your country covered by the survey of wintering areas?
- Fully (> 90 % of suitable habitats surveyed)
  - High (60-90 % of suitable habitats surveyed)
  - Medium (30-60 % of suitable habitats surveyed)
  - Low (< 30 % of suitable habitats surveyed)
- d) If wintering sites have been identified, to what extent are these sites being monitored during migration?
- Fully (> 90% of known sites)
  - High (60-90 % of known sites)
  - Medium (30-60 % of known sites)
  - Low (< 30 % of known sites)
  - No monitoring is conducted
- e) If your country is outside of Aquatic Warbler wintering range, which international initiatives aimed at identification of Aquatic Warbler wintering grounds has your country been involved in? What are the main findings?
- Feather samples were taken by Mr. Martin Flade from eleven males and one female in spring 2004 in the Hortobágy NP for stable isotope analysis and blood samples for DNA analysis (although, unfortunately, no permission was requested and thus given to the latter activity, only to collection of feather samples).
- f) What are the gaps and what needs to be done to help address them?

### 3.1.5. *Research into habitat characteristics at migration and wintering sites*

- a) Has research into habitat characteristics at migration and/or wintering sites been conducted in your country?
- Yes  No
- b) If Yes, please provide a list of on-going and completed studies with references if results are already published.
- c) What are the main findings and conservation implications?
- d) What are the remaining gaps and what needs to be done to address them?
- More ringing centers would give a more detailed picture of the migration of this species.

### 3.1.6. *Research on movements during the breeding season / exchange of subpopulations*

Has research on Aquatic Warbler movements during breeding season/exchange of subpopulations been conducted in your country?

Yes     No     Country is outside of breeding range

If Yes, please describe which territories were covered, what methods were used (colour ringing, radio-tagging, etc.) and what were the main findings. Please give reference to published materials if available.

If Yes, was the research on movements during the breeding season coordinated with researchers from neighbouring Aquatic Warbler Range States.

Yes     No

If the research hasn't been conducted, what is your country planning to do to initiate such cooperation?

No such plans have emerged so far.

**3.1.7. *Develop and implement an international monitoring programme***

Is your country participating in development and/or implementation of international Aquatic Warbler monitoring programmes?

Yes     No

If Yes, please list on-going and completed projects and indicate which areas they focus on and which other countries are involved. Please provide reference to published results if available.

National monitoring programme coordinated by AWCT.

Are there areas that haven't been properly addressed, if so, what needs to be done to assist your country in addressing these gaps?

**3.2. *To promote research useful for the conservation of the Aquatic Warbler in the future***

**3.2.1. *Undertake comparative studies on breeding success and population recruitment in different habitats***

a) Have studies on breeding success and population recruitment in different habitats been conducted in your country?

- Yes, in collaboration with other Range States
- Yes, on the national scale
- No comparative studies have been conducted
- Country is outside of breeding range

b) If available, please list on-going and completed studies and give reference to published reports.

c) What are the main findings of these studies?

d) Are there any future comparative studies your country is able to initiate? What would be needed to do this?

- e) If no comparative studies are being implemented, what is your country planning to do to stimulate this research and what assistance would be required?

Financial support is necessary to employ 2-3 students for at least 3 years to study the effects of habitat variables on breeding success.

3.2.2. *Assess the effect of burning, scything, mowing, grazing and water conditions on breeding populations*

- a) Effect of which of the following factors and potential habitat management techniques on Aquatic Warbler breeding population was assessed in your country?

- Controlled burning
- Scything
- Mowing
- Water conditions
- Other   : the effect of vegetation types on the density of singing males
- No assessment has been conducted

- b) What are the main findings and conservation implications? If available, please give reference to published reports.

No publication exists as yet on the effect of vegetation types on the density of singing males.  
Other relevant publication:

Gábor Kovács – Zsolt Végvári – Attila Szilágyi (2005): Habitat selection and conservation of the Aquatic Warbler in Hungary. Study presented at Aquatic Warbler International Conference, 18-20 August 2005, Palencia, Spain.

- c) Are there any gaps? What limits further assessment of this factor's effects?

3.2.3. *Develop collaborative research and monitoring programmes between range-states*

- a) Is your country involved in international collaborative and monitoring programmes on the Aquatic Warbler?

Yes  No

- b) If yes, please provide brief details about on-going and completed projects. Which Aquatic Warbler range states are involved? What fields studied?

We work together with the AWCT carrying out annual population estimates.

- c) What are the main findings and conservation implications?

The only breeding site of this species in Hungary is the Hortobágy. It breeds in wet grasslands and tussocky marshes in an increasing number since 1971 with minor fluctuations. The most important management techniques: all mowing must be abandoned in the breeding area. In dry years the water level of marshes must be kept at an optimal level of 20-40 cm. In order to decrease the probability of the burning down of the breeding habitat an extensive level of grazing is proposed.

- d) What are the gaps and what is needed to address them?

Breeding success should be investigated.

#### 4.0 PUBLIC AWARENESS

4.1. *To ensure development of a strong network of organisations and individuals committed to the conservation of the Aquatic Warbler*

a) Does a network of organisations/individuals committed to the conservation of the Aquatic Warbler exist in your country?

Yes  No

b) If Yes, how broad is this network and what organizations/individuals are taking the lead in facilitation and coordination of its development?

c) What actions does your country undertake to broaden the circle of organisations and individuals committed to conservation of Aquatic Warbler?

d) What successful experience can other Range States draw on?

e) What would be needed to establish a network if it does not already exist or to improve an existing one?

#### **4.2. To use the Aquatic Warbler as a flagship species**

Has the Aquatic Warbler been used as a flagship species in your country for the inventory and protection of wetlands?

Yes  No

If Yes, please briefly describe how and provide examples if available.  
It is a flagship species only in the Hortobágy National Park.

If No, what limits promotion and use of the Aquatic Warbler as a flagship species and how does your country plan to address this?

#### **4.3. To prepare educational materials promoting and giving information**

a) Have any educational and promotional materials about Aquatic Warbler been developed in your country?

- Yes, specifically devoted to the Aquatic Warbler.
- Yes, the Aquatic Warbler is included into materials with a broader context.
- No, Aquatic Warbler is not covered in educational and promotional materials.

If Yes, please describe the nature of such materials and how they were disseminated. Please give reference to published materials if available.

This species is included in several educational leaflets as well as a postcard of the National Park Directorate. At the end of 2005, a comprehensive publication on the avifauna of the Hortobágy was issued, with a 2.5-page chapter on the Aquatic Warbler: dr. Kovács G. – Végvári Zs. (2004): Csíkosfejű nádiposzáta *In*: Ecsedi Z. (szerk.) (2004): A Hortobágy madárvilága. Hortobágy Természetvédelmi Egyesület – Winter Fair, Balmazújváros – Szeged.

If No, please describe what limits development of such materials and give details about what your country is planning to do to promote Aquatic Warbler and its conservation.

## PART II. COUNTRY-SPECIFIC ACTIONS

Please report on the implementation of the country-specific actions listed for your country in Part II of the Action Plan and provide information if that is not already covered by your answers under Part I. Please describe not only the measures taken but also their impact on the Aquatic Warbler or its habitat in the context of the objectives of the Memorandum of Understanding and the Action Plan. Where you have already answered on country-specific actions in Part I, please only add a reference to the relevant answer here.

2.2. Maintain the water level in Kunkápolnási-mocsár and Nagyrét marsh (Hortobágy National Park) by artificial flooding, in case of (e.g.) lack of winter precipitation.

See article below. Water levels were high enough in 2004 and 2005 so that no artificial flooding was necessary. In early 2006, the breeding area was flooded (although winter precipitation was high enough), creating conditions similar to those in the peak years of 2000 and 2001.

2.2.4. Promote a ban on mowing and burning in areas where they cause disturbance to breeding birds.

A ban on mowing and burning has been in place in the breeding area in the studied period. See the reference to mowing in the article below.

3.1. Monitor the population in the Hortobágy National Park.

See 3.1. above.

3.1.2. Survey unprotected areas in search of new breeding populations.

See 2.4.1. above.

## Status of the Aquatic Warbler *Acrocephalus paludicola* in 2005 in the Hortobágy National Park, Hungary

Dr Gábor Kovács – Dr. Zsolt Végvári

Rainfall conditions were rather similar to that of 2004, since the total amount of it exceeded 370 mm in the first seven months this year (April: 82, May: 36.5, June: 74, July: 105 mm). Therefore wet grasslands and tussocky marshes did not dry out at all providing optimal conditions for the whole period of breeding. Thus the decreasing tendency of the sedge *Carex melanostachya* populations decelerated, with *Schoenoplectus tabernaemontani* and *Bolboschoenus maritimus* showing an expanding tendency in the deeper parts of *Beckmannietum eruciformis* and *Alopecuretum pratensis* wet grasslands. As shown by the diagram below, the population of the Aquatic Warbler was not affected negatively by these changes in the vegetation structure.

It was an interesting phenomenon that males more often selected stems of *Lythrum virgatum* and *Butomus umbellatus* as singing posts, since the density of *Rumex* was much less than usual. Singing males were also heard unusually often in stands of different grass species, especially in that of *Agrostis stolonifera*.

It was an important point that no hay-cutting activities were observed in the whole region, not only in the breeding sites where it has been prohibited for many years.

It was another unusual observation that in the central part of the breeding area Aquatic Warblers occupied new grassland areas that were cut down last year (thus containing no old grass). This interesting way of expansion is the continuation of a process that started last year when Aquatic Warblers occupied a few hectares of grassland cut down last year.

The first singing males were heard on 25<sup>th</sup> April. The first feeding females were observed on 11<sup>th</sup> June.

Although the counting of singing males was much more difficult this year due to deeper water conditions than last year, the resulting number was higher.

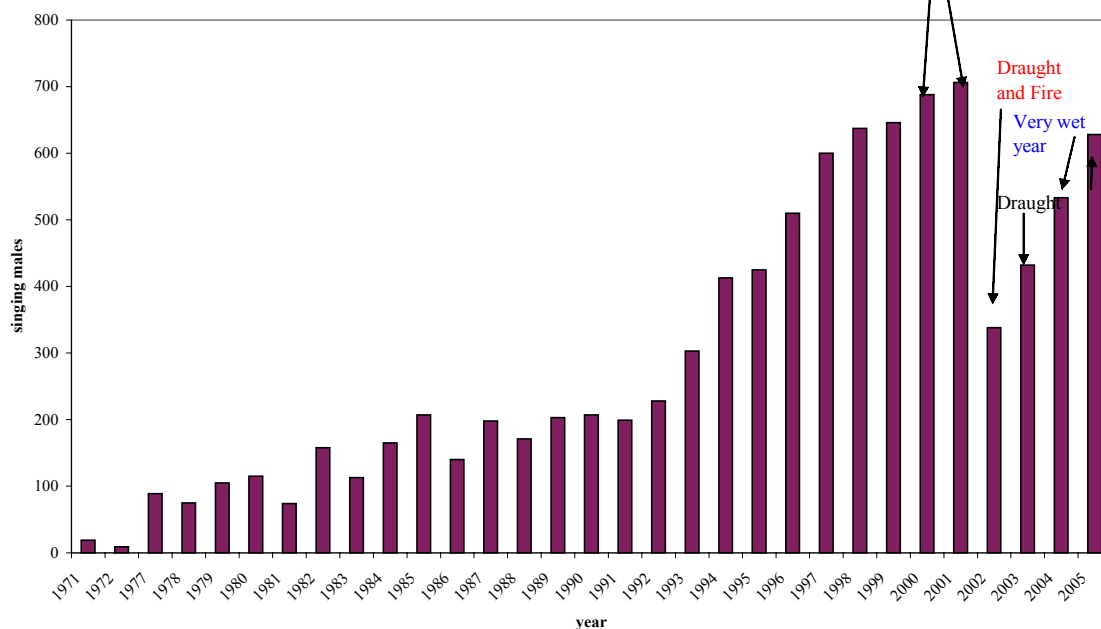
Table 1. Number of singing males in different breeding sites

N	Site name	Number of singing males
1.	Fackó-hát-marsh	24
2.	Csonka-Csukás-zug-marsh	25
3.	Csíkos-hát-marsh	5
4.	Grassland area at Korosztály-kút	7
5.	Western side of Halas-fenek-marsh	15
6.	Kismező-marsh	8
7.	Halas-kút area	28
8.	Taknyos-lapos-marsh	26
9.	Western side of Csíkos-ér-marsh	23
10.	Northern side of Budirka-fertő-marsh	18
11.	Nagy-Ökör-fenek and Kis-Ökör-fenek-marshes	37
12.	Northern side of Rendőr-ér-marsh	28
13.	Southern side of Rendőr-ér-marsh	21
14.	Halas-farok-marsh	11
15.	Eastern side of Nagy-Forrás-fenek-marsh	25
16.	Kis-Forrás-fenek-marsh	2



17.	Kotán-ér-marsh	12
18.	Zsombikos-lapos-marsh	13
19.	Kerek-lapos-marsh	17
20.	Határ-fenék-marsh	35
21.	Darvas-sziget-marsh	13
22.	Western side of Darvas-ér-marsh	27
23.	Eastern side of Darvas-ér-marsh	8
24.	Southern side of Ecse-fenék-marsh	13
25.	Vén-fenék-marsh	20
26.	Nagy-Téjfeles-marsh	16
27.	Zádor-lapos-marsh	15
28.	Kis- and Nagy-Rónafenék-marshes	11
29.	Szóke-fenék-marsh	29
30.	Northern part of Ecsezug area	5
31.	Kókonya area	21
32.	Borzas area, site 1.	17
33.	Borzas area, site 2.	10
34.	Both sides of Mérge-ér-marsh	14
35.	Rossz-ér and Labodás-marshes	7
36.	Northern side of Kenderhátó-fok-marsh	6
37.	Junction of Luca-ér and Bogárzó-fenék-marshes	2
38.	Kis-Borsós-rét-marsh	14
	<b>Total</b>	<b>628</b>

Population trends of the Aquatic Warbler in the Hortobágy NP, Hungary **Floods**



**Annex I**

Name of the site, geographical coordinates	Status (B – breeding, W – wintering P – passage)	Aquatic Warbler population supported (vocalizing males (breeding) or individuals (migration or wintering))	Year of survey	Total area of the site	Area of the site under protection	Type of protection	Does protection level fully reject possible detrimental developments? [Yes/No]	Site Management Plan (D – developed, A - approved, I – implemented)
Hortobágy National Park (47.5N 21.1E)	B	628 singing males	2005	Breeding area: 12,000 ha National Park: 81 833.4 ha	The whole area: 12,000 ha	National Park	Yes	Implemented