Aquatic Warbler Conservation Team

Searching for the Aquatic Warbler *Acrocephalus paludicola* in the Diawling National Park, Mauritania

(with a note on the occurrence of Baillon's Crake *Porzana pusilla)*

23th to 27th January 2010

Using the 'rope method' near the Sluice Lemer, Diawling NP
(from left: Talla Diop, Saër Khayar Diagne, Aurélien André, Abdoulaye Faye)

Final Report

written by Volker Salewski (all photographs) and Nina Seifert
on behalf of the
BirdLife International Aquatic Warbler Conservation Team

Contact addresses:

Aquatic Warbler Conservation Team (AWCT)

Website: www.aquaticwarbler.net

c/o
Dr. Volker Salewski
Prinz-Rupprecht-Str. 24
93053 Regensburg
Germany/Allemagne

Phone: ++ (0) 941 708 6788

For Baillon's Crake:
Nina Seifert
Ornithological station „Hiddensee", Zoological Institute and Museum,
University of Greifswald
Soldmannstrasse 23
D-17489 Greifswald
Germany/Allemagne

nam.seifert@gmail.com

Content

1. Summary

Identifying the staging areas of Aquatic Warblers *Acrocephalus paludicola* in the non-breeding season is a high priority for the conservation of the species. After a first expedition in 2008 a second expedition to search for this species was undertaken in Diawling National Park, south-western Mauritania from 23 – 27 January 2010. No Aquatic Warblers were recorded but potentially suitable habitat was found, especially in the Bassin du Bell in the centre of the park and in the Bassin du Diawling. Most of these habitats were already dry and there were large areas that were potentially suitable for Aquatic Warblers earlier on in the non-breeding season. The area is therefore probably not suitable for fuelling for northward migration, but may be so during the moulting period. It is suggested that future investigations into the presence of Aquatic Warblers in the Diawling National Park should concentrate on the months November/December.

2. Participants of the expedition

Dr. Volker Salewski: representative of the BirdLife International Aquatic Warbler Conservation Team.

Lieutenant Abdoulaye Faye: representative of the Djoudj National Park, Senegal.

Momar Talla Diop: representative of the Djoudj National Park, Senegal.

Saër Khayar Diagne: intern, Diawling National Park, Mauritania.

Aurélien André: intern, Diawling National Park, Mauritania.

Nina Seifert, University of Greifswald, Germany, accompanied the expedition, but was working on Baillon's Crake *Porzana pusilla*.

Mohammed Ould M'Badjou, Diawling National Park, Mauritania, guided the expedition to the area Mirador Tichilitt.

Dr. Zein Elabidine Ould Sidaty, Diawling National Park, Mauritania, and **Colonel Ibrahima Diop**, Djoudj National Park, Senegal, were an indispensable help when organizing the expedition and solving logistical problems.

3. Schedule

Table 1: Schedule of the expedition.

Date	Activities
23.01.2010	• Volker Salewski, Abdoulaye Faye, Talla Diop and Nina Seifert travel from Djoudj National Park, Senegal, to the Diawling National Park, Mauritania. • Discussion of the expedition's schedule with Dr. Zeine Elabidine Ould Sidaty, Diawling National Park. • Checking potential Aquatic Warbler habitat near Sluice Bell where a Baillon's Crake had been captured some weeks before. • Checking potential Aquatic Warbler habitat at site M1 of the 2008 expedition (Flade 2010) near Sluice Lemer.
24.01.2010	• Mistnetting and cage trapping (N. Seifert) at Sluice Lemer. • Checking potential Aquatic Warbler habitats near Mirador Tichilitt.
25.01.2010	• Trip to Chott Boul and l'Aftout Es Saheli.
26.01.2010	• Mistnetting and cage trapping (N. Seifert) at Mirador Tichilitt. • Discussion of the flooding regime and the vegetation zones in Diawling National Park with Dr. Zeine Elabidine Ould Sidaty.
27.01.2010	• Mistnetting at the Mirador Tichilitt. • Checking potential Aquatic Warbler habitats at the western side of Bassin du Bell. • Return to the Djoudj National Park in Senegal.

4. Background and targets

According to the Aquatic Warbler MoU ("Memorandum of Understanding concerning Conservation Measures for the Aquatic Warbler", a Memorandum under the Convention on Migratory Species CMS) including the Aquatic Warbler Species Action Plan, and the priority setting in 2006 (MoU Conference of Signatory Parties at Criewen, Germany) highest priority was given to the identification of the wintering sites of the globally threatened Aquatic Warbler *Acrocephalus paludicola* in West Africa.

An Aquatic Warbler Conservation Team (AWCT) expedition in January/February 2007 resulted in the discovery of a major wintering site of Aquatic Warbler in the Djoudj area in Senegal in vast *Scirpus/Sporobolus* grass marshes. According to first estimates in 2007, the Senegal delta probably holds one third, and possibly more than half of the global population of Aquatic Warblers during the non-breeding season (Flade 2008). However, the ongoing environmental change and increasing threats to marshes in the region (alteration of water regime, fresh water storage for irrigation, transformation of grass marshes into sugar cane and rice fields, water pollution from intensive agriculture) indicate a clear need for a thorough analysis of the conservation status and threats to Aquatic Warblers and their wintering habitat.

Satellite image analyses from 2007 (G. Buchanan, RSPB) studied the likelihood of occurrence of such grass marshes in entire W-Africa and showed a high probability of such habitats on the Mauritanian side of the Senegal delta and in the upper Senegal floodplain in northeast Senegal. In January/February 2008 two expeditions of the AWCT travelled to SW Mauritania and to NE Senegal respectively. In the upper Senegal area hardly any habitat suitable for wintering Aquatic Warblers was found. The situation was different in SW Mauritania. Some areas were potentially suitable, but the presence of Aquatic Warblers could not be confirmed.

In November 2009, during a meeting of the Aquatic Warbler Conservation Team in Sandy (UK) the possibility and the need of a further expedition to the Diawling National Park in Mauritania was discussed. As Diawling NP is close to the only known non-breeding area, the Djoudj National Park in Senegal, it was reasonable to assume that Aquatic Warblers might winter there too. Nevertheless, confirmation of its presence was required to implement further management and conservation strategies.

The presence of Volker Salewski of the AWCT in Djoudj National Park, Senegal, for several weeks in early 2010 made the possibility feasible to perform another expedition to Diawling National Park, Mauritania, with relatively low extra efforts. This expedition took place from 23th to 27th January 2010.

Targets of the expedition:

1. To confirm the occurrence of suitable habitats and wintering of Aquatic Warbler in the Diawling National Park;
2. To collect habitat data of potential Aquatic Warbler sites, including absence data;
3. To find and catch Aquatic Warblers for ringing and to collect DNA and feather samples to investigate connectivity of breeding and non-breeding areas of Aquatic Warbler populations.

Field methods:

- Search for potentially suitable habitats in the Diawling National Park;
- Standard habitat descriptions, collection of GPS coordinates of suitable habitats for comparison with satellite image analyses and vegetation maps;
- mist-netting in apparently suitable habitats with approximately 50m mist-net fences with the application of the 'rope method' (Flade 2008) and changing the location of the nets after four applications of the 'rope method' (approximately 1 ha);
- Survey of accompanying species (mist-netting and field observations).

5. Study sites

The Diawling National Park in south-west Mauritania was established in 1991 and covers an area of about 16 000 ha of different habitats such as dunes as well as partially and temporal flooded areas (Fig. 1; for details see e.g. Diagana et al. 2003). Since the closure of the Diama dam in 1986 the natural dynamics of the floodplains in the area have been interrupted. Potential Aquatic Warbler habitat may be found in the artificially inundated areas of several basins that receive their water inflow through sluices. The search for Aquatic Warblers concentrated on the Bassin du Bell (4 000 ha) in the centre of the park and on the Bassin du Diawling, which is situated in the northern part of the park. The vegetation map of the park indicated that the former basin and adjacent areas were the largest areas within the park where aquatic vegetation such as *Sporobolus robustus* and *Phragmites australis* dominated (Fig. 2).

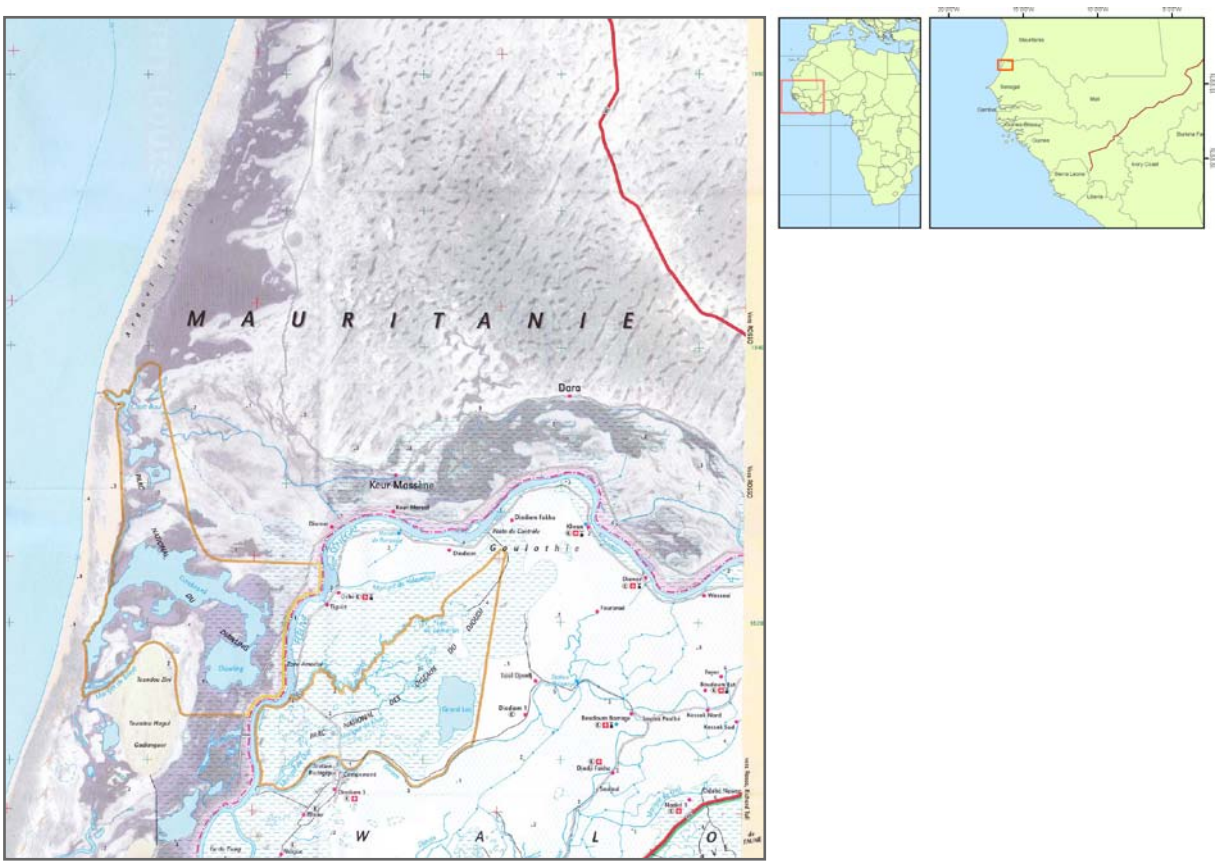

Figure 1: Position of Diawling National Park in the Senegal delta, SW-Mauritania. ©: DTGC Dakar 2008; freytag&bernt 2009; Edited by C. Tegetmeyer and N. Seifert.

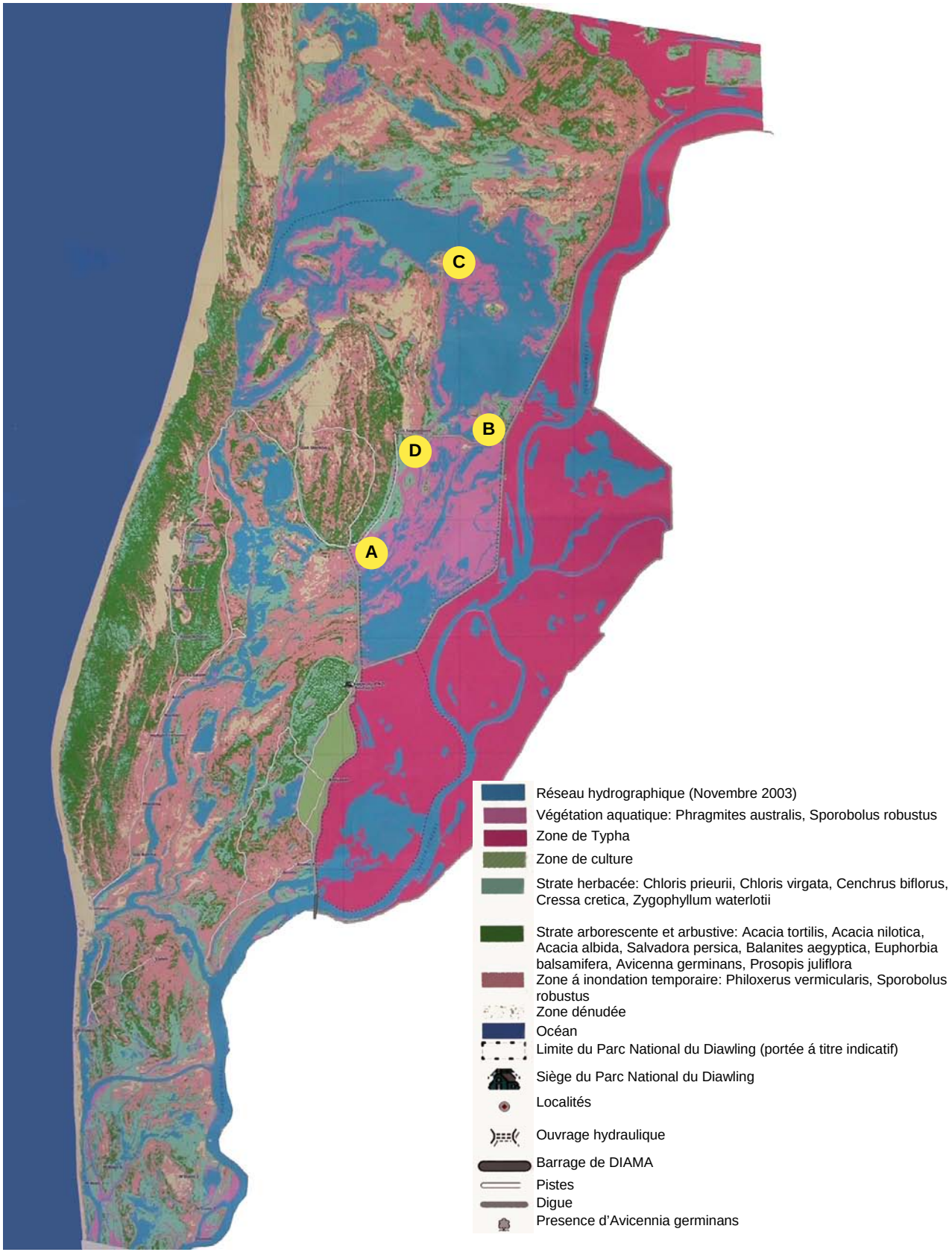

Figure 2: Vegetation map of Diawling National Park. The Bassin du Bell is located in the centre of the park. Yellow circles = approximate location of the study sites. For detailed coordinates see Tab. A1 in the annex. © Ministère du Développement Rural et de l'Environnement, Mauritanie 2003.

The following sites were visited by the expedition (see also Fig. 2). For exact coordinates and dates of mist-netting as well as pictures of the mist-netting sites see Tab. A1 and Figs. A1-A7 in the annex.

Site A (Sluice Bell)
This site was briefly investigated on 23rd January because a Baillon's Crake, a species which has been associated with the presence of Aquatic Warblers (Flade 2008), had been mist-netted in the area in late December 2009 (Julien Foucher, pers. com.). Apart from a deep canal with hardly any fringing suitable vegetation the site comprised only scattered and low stands of *Sporobolus robustus* which bordered on *Scirpus maritimus.* The site was completely dry and was not suitable for Aquatic Warbler or for Baillon's Crake.

Figure 3: Site A, 23 January 2010. Apart from a canal (left, behind the bushes) the vegetation mainly composed of dry *Scirpus maritimus*.

Site B (Sluice Lemer)
This was site M1 in Flade (2010) and it was recommended to start the search here as this site was apparently the most suitable of all sites investigated within the park in 2008 for Aquatic Warblers (Tanneberger, pers.com.). The site is situated in the Bassin du Bell near the sluice Lemer through which the basin is inundated.

The vegetation composed mainly of small spatially confined stands of *Scirpus maritimus*, *Eleocharis mutata* and *Sporobolus robustus*. Some areas dominated by *Typha australis* and to a lesser extent by *Phragmites australis* also occurred as well as interspersed single *Tamarix senegalensis*.

Apart from small depressions which still held water (max. depth 60 cm), the area was dry. Therefore, the original plan to place nets in intervals (e.g. every 100m) consecutively along a transect was given up. Instead mist-nets (see methods) were placed opportunistically at sites where at least a certain proportion of the ground was still covered with water. Mist-netting took place on 24 January at three sites (sites B1 – B3). Furthermore, ten cage traps were installed along the shoreline of two small depressions by Nina Seifert with the intention to catch Baillon's Crakes.

Figure 4: Site B, 23 January 2010. Typical vegetation was *Sporobolus robustus* (foreground), *Scirpus maritimus* (behind the open water), *Typha australis* (green plot in the upper right corner and the green line in the distant background) and some *Tamarix senegalensis* bushes.

Site C (Mirador Tichilitt)

This site was not visited in 2008. It is situated east of the decayed Mirador (shelter/ tower for bird observations) Tichilitt. Site C is situated in the Diawling basin (Fig. 7). The area that was still inundated was up to about 100 m wide and several kilometres long. It was dominated by *Sporobolus robustus* (closer to the waters edge and often floating) and extensive monospecific stands of *Scirpus maritimus*. Close to the water edge there were extensive areas of open water with a depth of about 0.7m. Water depth within the site varied between 0.05 and 0.25 m.

At least three Common Bitterns *Botaurus stellaris* were observed and two Red-throated Pipits *Anthus cervinus* heard when the area was surveyed on 24 January. Additionally a Baillon's Crake was observed on 27 January. These species may indicate suitable habitats for Aquatic Warblers (pers. obs.). Mist-netting was carried

out at three sites on 26 January and at an additional site on 27 January. Cage-trapping was performed at the same dates.

Figure 5: Site C, 24 January 2010. This is a large area dominated by *Sporobolus robustus* and *Scirpus maritimus* (forming monospecific stands in areas with lower water levels at the right in the picture) next to the Diawling.

Site D (Ziré Taghrédient)

On 27 January Nina Seifert and Volker Salewski explored the western parts of the Bassin du Bell near the village Ziré Taghrédient. West of a canal that was fringed by *Typha australis* and too deep to be crossed the area was completely dry. The area was partially covered with dense monospecific stands of *Scirpus maritimus* and patches of bare soil were sporadically interspersed. *Acacia* and *Tamarix senegalensis* occurred on elevated spots.

Although the eastern side of the canal could not be reached it looked like that the same type of vegetation (*Scirpus maritimus*, some *Tamarix senegalensis* and *Typha australis*) continued and that the area was also dry. No mistnetting was performed at this site.

On 25 January a trip under the direction of Dr. Zein Elabidine Ould Sidaty targeted the area of Chot Boul and Aftout Es Saheli. There was an observation of an Aquatic Warbler in that area some years ago (M. Benmergui, pers. com.), but no suitable habitat was found during this expedition.

Figure 6: Site D, 27 January 2010. The western parts of the Bassin du Bell were already dry and often dominated by dense stands of *Scirpus maritimus*.

6. Results

6.1 Mist-netting and cage trapping

In total 131 birds of eleven species were mist-netted (Tab. 2). The Sedge Warbler was the dominant species at all sites with the exception of C3 where a flock of Yellow-crowned Bishops was mist-netted. Yellow Wagtails were also captured at almost all sites apart from C2. All other species were captured in low numbers. No Aquatic Warblers were mist-netted at any of the sites.

In the cage traps one Baillon's Crake was captured at site B but not at site C although one individual was observed at the latter site. For other birds captured in the cage traps see Tab. 2.

Table 2: Numbers of birds caught at the different sites. B1-3 and C1-4 indicate mist-netting sites, BT and CT denote locations of cage traps.

	Site								
Species	**B1**	**B2**	**B3**	**BT**	**C1**	**C2**	**C3**	**C4**	**CT**
Black Crake *Amaurornis flavirostra*				2					
Baillon's Crake *Porzana pusilla*				1					
Painted Snipe *Rostratula benghalensis*		1							
Yellow Wagtail *Motacilla flava*	3	1	1	6	3		5	3	1
Grasshopper Warbler *Locustella naevia*	1				1				
Sedge Warbler *Acrocephalus schoenobaenus*	7	6	3	4	18	11	17	8	5
Chiffchaff *Phylloscopus collybita*					2		1	1	
Fan-tailed Cisticola *Cisticola juncidis*	2				3				
Greater Black-backed Cisticola *Cisticola galactotes*		1							
River Prinia *Prinia fluviatilis*	3								
Yellow-backed Weaver *Ploceus melanocephalus*			1						
Red-billed Quelea *Quelea quelea*							1		
Yellow-crowned Bishop *Euplectes afer*		1					26		

Species observed in the vicinity of the mist-netting sites included mainly non-passerine species that were not mist-netted as well as the Sand Martin *Riparia riparia* (Tab. 3). No Aquatic Warbler was recorded at any of the sites.

Table 3: Birds species observed in the vicinity of the mist-netting sites.

	Site						
Species	**B1**	**B2**	**B3**	**C1**	**C2**	**C3**	**C4**
Common Bittern *Botaurus stellaris*							X
Painted Snipe *Rostratula benghalensis*			X				
Black-winged Stilt *Himantopus himantopus*	X	X					
Spur-winged Plover *Vanellus spinosus*					X		
Common Snipe *Gallinago gallinago*							X
Greenshank *Tringa nebularia*						X	X
Wood Sandpiper *Tringa glareola*	X	X	X	X	X	X	X
Crested Lark *Galerida cristata*					X		X
Sand Martin *Riparia riparia*				X	X	X	X
Yellow Wagtail *Motacilla flava*	X	X	X	X	X	X	X
Sedge Warbler *Acrocephalus schoenobaenus*	X	X	X	X	X	X	X
Chiffchaff *Phylloscopus collybita*	X	X		X		X	X
Fan-tailed Cisticola *Cisticola juncidis*				X			
Greater Black-backed Cisticola *Cisticola galactotes*	X	X					
River Prinia *Prinia fluviatilis*	X	X					
Yellow-backed Weaver *Ploceus melanocephalus*	X	X	X				
Yellow-crowned Bishop *Euplectes afer*						X	

6.2 Habitat parameters

Tab. 4 lists the habitat details of the mist-netting sites. All sites contained a high percentage of water and open water respectively, but there was a higher cover of deeper water at site C. *Scirpus maritimus* and *Sporobolus robustus* were the dominant plant species at all mist-netting sites.

Table 4: Habitat parameters of the mist-netting sites. Shown is the cover [%] of water and open water, the maximum water depth [cm] as well as the cover by various plant species [%].

Site	B1	B2	B3	C1	C2	C3	C4
Water	60	40	60	70	100	100	100
Open Water	50	30	50	50	30	60	30
Water depth	40	40	50	50	60	50	40
Scirpus maritimus	15	15	15	45	70	10	50
Scirpus littoralis		1	5				
Sporobolus robustus	25	30	10			30	20
Eleocharis mutata	10	5	10				
Typha australis	1	10	10				
Phragmites australis		10					
Tamarix senegalensis	1	1		1			
Open ground				5			

6.3 Comparison with other sites

In January 2009 the same habitat parameters as in this study and the presence (16 sites) or absence (15 sites) of Aquatic Warblers was recorded using the same mist-netting method at 31 different sites in Djoudj National Park (Bargain & Salewski, unpubl. data).

A principal component analysis with the entire data set revealed that the first principal component (Tab. 5) that explained 26.8% of the variance was highly positively correlated with water depth and the presence of open water and *Scirpus maritimus* and negatively correlated with the presence of *Oryza longistaminata* (not present at sites in Diawling National Park). The second principal component explained 16.7% of the variance of the data and was highly positively correlated with the presence of *Eleocharis mutata.*

Fig. 7 shows that Aquatic Warblers were present at sites that were positively correlated with the first principal component and negatively correlated with the second principal component. Aquatic Warblers therefore tend to occur at sites where *Eleocharis mutata* is present and where *Oryza longistaminata* is absent. They also seem to avoid deep water. Surprisingly, and in contrast to previous analyses with the data from 2009, Aquatic Warblers seem to avoid areas with a lot of open water and the presence of *Scirpus maritimus*. However, Fig. 8 shows that this is due to the absence of Aquatic Warblers at the sites in Diawling National Park and especially the sites C1 – C4. Together the seven sites in Mauritania, where no Aquatic Warblers

were recorded include the six highest scores on the first principal component. When these sites are not considered, sites where Aquatic Warblers are present tend to score high on the first principal component i.e. are associated with open water and the presence of *Scirpus maritimus*

Table 5: Rotated component matrix (varimax rotation) of a principal component analyses of the habitat parameters. Shown are the correlation coefficients of the parameters with the four extracted (eigenvalue > 1) principle components. In brackets: percentage variance explained by the respective principal component.

	Principal Component			
Habitat parameter	**1 (26.8%)**	**2 (16.7%)**	**3 (16.4%)**	**4 (11.4%)**
Water depth	0.863	0.044	0.080	-0.050
Open water	0.767	0.107	0.036	-0.175
Scirpus maritimus	0.755	-0.384	-0.101	0.126
Scirpus littoralis	-0.298	0.347	-0.337	-0.202
Sporobolus robustus	-0.108	-0.097	0.084	0.925
Eleocharis mutata	0.015	0.911	-0.025	-0.111
Oryza longistaminata	-0.714	-0.577	-0.023	-0.201
Typha australis	-0.242	-0.170	0.715	-0.397
Phragmites australis	0.059	-0.040	0.811	0.162
Tamarix senegalensis	0.138	0.436	0.597	0.110

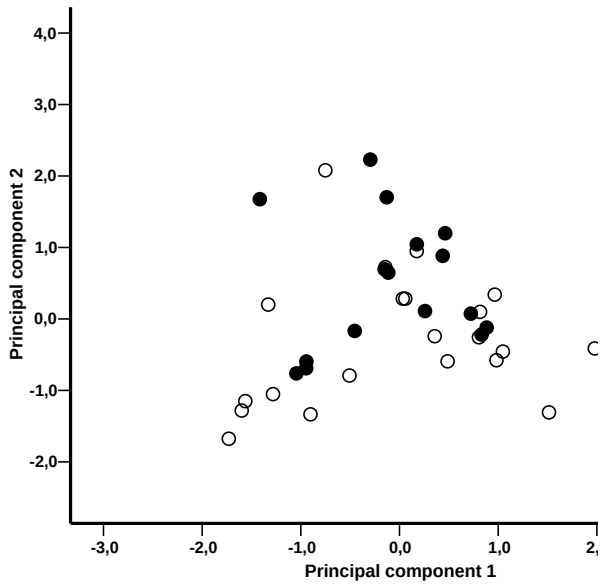

Figure 7: Results of a principal component analysis. Shown are the factor loadings of sites with the presence of Aquatic Warblers (dots) and sites with the absence of Aquatic Warblers (circles) on the first two principal components.

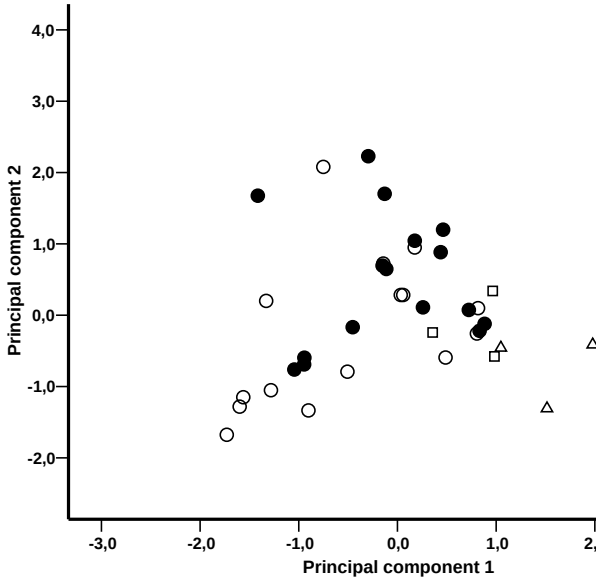

Figure 8: Results of a principal component analysis. Shown are the factor loadings of sites in Djoudj National Park where Aquatic Warblers were present (●), or absent (○) respectively and sites B1 – B3 (□) and C1 – C4 (Δ) in Diawling National Park on the first two principal components.

7. Discussion

The targets of the expedition were only partially met. With respect to our first target (see above) we could not confirm the presence of Aquatic Warblers in the Diawling National Park, but to a limited extent we could confirm that suitable habitat is found in the area. However, J. Fouchet (pers. com.) also failed to catch Aquatic Warblers on seven days of mist-netting in December 2009 when there was still much more water. During the same period several Aquatic Warblers were observed in Djoudj National Park (N. Seifert, pers. obs.).

We found large areas that resembled the vast *Sirpus*/*Sporobolus* marshes in the Djoudj National Park on the Senegalese side of the Senegal River that are known to host considerable numbers of Aquatic Warblers during the non-breeding season. However, these sites were mostly too dry in late January to be suitable for the species. Although the expedition was under time and logistic constraints (suitable sites distant from the park headquarters) it is likely that the Bassin du Bell is the major area where suitable habitats for Aquatic Warblers are found. According to the vegetation map of the park (dated 2003) and the present investigation, the area is mainly covered with *Scirpus maritimus* and *Sporobolus robustus* marshes. There are, however, areas where *Typha australis* dominates and monitoring in the future should ascertain whether these areas are increasing in size. Suitable areas for Aquatic Warblers may also be found in the Bassin du Diawling. Here it would be interesting to check the habitats at the northern bank of the Diawling that we could not visit due to time constraints. Other basins, including the Bassin de Gambar which is entirely covered with *Typha australis* (Fig. 2) are unlikely to contain suitable habitats for Aquatic Warblers.

We collected habitat data at sites that were assumed to be suitable for Aquatic Warblers according to previous experience with the habitat requirements of the species. Even if only absence data could be collected during this study they may

nevertheless be helpful in increasing our knowledge about the habitat requirements of Aquatic Warblers in their wintering areas. The analysis of the habitat data together with comparable data collected in areas where Aquatic Warblers were present in Djoudj National Park, Senegal, revealed some surprises: the absence of Aquatic Warblers was correlated with the high cover of *Scirpus maritimus* and open water. This was due to the mist-netting sites in Diawling NP where no Aquatic Warblers were recorded. There may be several problems with the analysis. (1) the present analysis considers only linear effects, but it is reasonable to assume that e.g. a high cover of open water, in the extreme case reaching 100%, will not leave much suitable habitat for Aquatic Warblers although the species is confined to wet habitats; (2) the analysis can be interpreted that there is suitable habitat present in Diawling National Park, but Aquatic Warblers were not recorded because (3) only a few suitable patches were left and that Aquatic Warblers may have left the area already or (4) the capture effort was too low. The latter cannot be excluded as there was limited time to work e.g. at site C due to its distance from the park headquarters and the time needed to establish mist net lines with a limited number of people.

The applied method was used according to the experience in Djoudj National Park in 2009 (Bargain & Salewski, unpublished data) and has the advantage of covering a large area with suitable habitat patches. The disadvantage is that most of the available time is spent with carrying nets around and to establish net lines. This problem would be avoided when relatively permanent longer net lines could be set up, but then only a limited area will be covered, resulting in a reduced data set. Additionally, when set up in areas where no Aquatic Warblers are present, limited time will also be spent without any results. A mixture of both methods may be useful according to the prevailing circumstances.

8. Outlook

Although no Aquatic Warblers were recorded during this expedition the Diawling National Park should be considered in the future when searching for additional non-breeding sites of Aquatic Warblers. Suitable habitats may be found in the area, especially in the Bassin du Bell, but they were already dry in late January. The sluice Lemer, through which the Bassin du Bell is artificially inundated with water from the Senegal River, is open from 1st July to 31st October. At the end of October the water level in the Bassin du Bell is 1.5 m and when the sluices are closed again the area starts to dry out slowly. The basin is completely dry in May and June which is intended to reduce the suitability of the basin for *Typha australis* (Z. El Abidine Ould Sidaty, pers. com.), which forms already monospecific stands in the Bassin de Gambar (4 500 ha), leaving the entire area unsuitable for Aquatic Warblers. This flooding regime may mean that the Bassin du Bell may be suitable for Aquatic Warblers during the early period of the non-breeding period, a time when the species is moulting and has therefore increased energy requirements.

Although the Diawling area is probably not important for Aquatic Warblers in terms of preparation (fuelling) for northward migration it cannot be excluded that it has some importance during the moulting period. It is therefore desirable that the status of the Aquatic Warbler in Diawling National Park will be thoroughly investigated including a search e.g. in November/December. Increased knowledge will be helpful and essential for the conservation of Aquatic Warblers considering the apparent conflict with respect to the flooding regime: Aquatic Warblers need water and therefore certain water levels are essentials. However, stands of *Typha australis*

are unsuitable for Aquatic Warblers and they can only be reduced by reduced water levels. More knowledge about the distribution and requirements of Aquatic Warblers is needed to develop future management scenarios.

9. On the occurrence of Baillon's Crake *Porzana pusilla* in Diawling National Park, Mauritania (by Nina Seifert)

Subdivided into 6 subspecies, the Baillon's Crake *Porzana pusilla* is a widely spread species with breeding populations in the Palaearctic, the Palaeotropics and Australis (Cramp & Simmons 1980). Little is known either about status or ecology of the smallest species in the genus *Porzana* owing to the bird's reclusive behaviour and sporadic occurrence. Accordingly, estimates of the European populations are highly tentative (Koshelev 2004) and likewise, abundance data is hardly available for Africa (Taylor 1998). European birds are considered to be migrants. Wintering regions are assumed to be situated along the Mediterranean, but few records of presumed Palaearctic birds indicated trans-Saharan migration (e.g. Libya, Moltoni 1928; Algeria, Dupuy 1970 and Mauritania, Dowsett & Forbes-Watson 1993). Furthermore, sporadic observations in Senegal, Somalia and Sudan during autumn and winter supported the hypothesis of wintering sites south of the Sahara (e.g. Roux & Morel 1964). However, due to the poor data basis there is no reliable estimate of the size of the wintering population in sub-Saharan Africa yet.

In the framework of an expedition of the BirdLife International Aquatic Warbler Conservation Team (AWCT), a considerable number of Baillon's Crakes was recorded for the first time within and in the vicinity of the Djoudj National Park, NW Senegal in winter 2007 (Flade 2008 unpubl., Salewski et al. 2009). On this basis and in the framework of a PhD-project under the auspices of the "Hiddensee" Ornithological Station (Germany), more effort is made to investigate status and size of this newly discovered population. In spring 2009, the first breeding record of the Baillon's Crake for NW-Senegal and the Gambia was established (Seifert et al. in prep.). Given the proximity of comparable habitats in the Diawling National Park on the eastern side of the Senegal river, it was very probable that the species not only occurs but also might breed in Mauritania too.

In the course of the AWCT-expedition from 23th to 27th January 2010, 1 Baillon's Crake could be caught at site B and one Baillon's Crake was flushed at site C. The bird which was caught in the Basin du Bell on the 24th January (Figs. 8, 9) was a chick with an estimated age of about 20 - 25 days (e.g. remains of black downy feathers still visible, bill pale yellow with blackish basis, initiating primary growth) and thus possibly hatched in early January. So far, observations of the species in Mauritania are considered as being Palearctic migrants (Dowsett & Forbes-Watson 1993). This is the first breeding record for the Baillon's Crake in Mauritania.

Figure 9: Baillon's Crake chick caught at site B the 24th January 2010

Figure 10: Wing of Baillon's Crake chick: Primaries only few mm out of pin.

Baillon's Crakes are confined to wetland habitats with dense vegetation and rather shallow water levels. There are observations of Baillon's Crakes occupying the same sites as the Aquatic Warbler (Szabó 1975, Flade 2008). However, the ongoing study in Djoudj NP, Senegal suggests that Baillon's Crakes might be less specialised than the passerine species and more flexible with regard to vegetation structure and changes in water level. The vast *Scirpus maritimus/Sporobolus*-areas in the Basin du Bell and extensive *S. maritimus*-stands at the southern shore of the Diawling might constitute favourable habitats for the Baillon's Crake. At the time of the AWCT expedition, most of the water within the park had evaporated, substantially reducing the extent of suitable habitats. The Baillon's Crake chick caught at site B was still not able to fly and to leave the area as the adults probably did when the site fell dry some weeks previously.

Taking into account that suitable habitats in Diawling NP are available from late September/October, the breeding period of Baillon's Crakes is likely to start in early autumn. A Baillon's Crake which was caught in December 2009 near the sluice Bell (Foucher, pers. comm.) and identified as being subadult (in transition into first adult plumage) could belong to a first brood. Accordingly, the chick caught in the framework of this expedition might stem from a second brood which began in late November/early December. The results of catching activities in Djoudj NP in spring 2009 and 2010 suggested a similar timing of the breeding period (Seifert et al. in prep.).

Although geographically separated by the river, the vast *Scirpus/Sporobolus*-marshes of the western and eastern side of the Senegal belong to the same system. Accordingly, Baillon's Crakes recorded on the Mauritanian and Senegalese side can be considered as one population. This should be taken into account with respect to conservation activities such as e.g. water management in both national parks, Djoudj and Diawling.

10. Acknowledgements

We are very grateful Dr. Zeine El Abidine Ould Sidaty, Diawling National Park; Colonel Ibrahima Diop, Djoudj National Park and Dr. Martin Flade, BirdLife International Aquatic Warbler Conservation Team for their help with logistic and bureaucratic matters, for hosting us in the parks under their responsibility and for the many fruitful discussions and advices without the expedition would not have been possible. The team of the Diawling National Park made the stay for us a pleasure.
Dr. Phil Atkinson kindly corrected the English. Cosima Tegetmeyer provided the general map, p. 6.
The participation of Nina Seifert at the expedition was supported by the Erwin-Stresemann-Fund of the Deutsche Ornithologen-Gesellschaft.

11. References

Cramp, S. & Simmons K.E. (eds) 1980. The birds of the Western Palaearctic, Vol. 2. OUP, Oxford.

Diagana, C.H., Diawara, Y. & Diedhiou,O. 2003. Guide des Oiseaux du Parc National du Diawling et de sa Zone Périphérique. FFEM, Paris

Dupuy, A. 1970. Migrations transsahariennes du printemps 66. Alauda 38: 278-285.

Dowsett, R.J. & Forbes-Watson, A. 1993. Checklist of the Birds of the Afrotropical and Malagasy Regions, Vol. I. Tauraco Press, Liège.

Flade, M. 2008. Searching for wintering sites of the Aquatic Warbler *Acrocephalus paludicola* in Senegal - 18th January to 10th February 2007. Final Report, Aquatic Warbler Conservation Team.

Flade, M. 2010. Searching for wintering sites of the Aquatic Warbler *Acrocephalus paludicola* in Sénégal and Mauritania - 13th to 26th January 2008. Final Report, Aquatic Warbler Conservation Team.

Koshelev, A.I. 2004. Baillion's Crake *Porzana pusilla*. In: Tucker, G.M. & Heath, M.F. (eds) Birds in Europe: their Conservation Status. BirdLife Conservation Series. BirdLife International, Cambridge. Pp. 226-227.

Moltoni, E. 1928. Risultati zoologici della Missione inviata della R. Sic. Geog. Ital. Per l'esplorazione dell' Oasi di Giarabub (1926-1927). Ann. Mus. Civ. St. Nat. Genova 52: 387-401.

Roux, F. & Morel, G. 1964. Le Sénégal, région privilégé pour les migrateurs Palearctic. Ostrich Suppl. 6: 249-254.

Salewski, V., Bargain, B., Diop, I. & Flade, M. 2009. Quest for a phantom – the search of the winter quarters of the Aquatic Warbler *Acrocephalus paludicola*. Bull. ABC 16: 61-66.

Szabó, L.V. 1975. Das Nisten des Zwergsumpfhuhnes (*Porzana pusilla*) in der Puszta von Hortobagy. Aquila 82: 170-175.

Taylor, B. & van Perlo, B. 1998. Rails. A Guide to the Rails, Crakes and Gallinules and Coots of the World. Pica Press, Sussex.

Annex

Table A1: GPS coordinates of the investigated sites (*coordinates indicate the centre between the net-rows B1 and B2)

Site	North	West	Date of mist-netting/visit
Site A	16°20’43.3’’	16°23’49,3’’	23 January 2010
Mist-netting site B1*	16°22’49,4’’	16°20’34,5’’	24 January 2010
Mist-netting site B2*	16°22’49,4’’	16°20’34,5’’	24 January 2010
Mist-netting site B3	16°22’49,4’’	16°20’34,8’’	24 January 2010
Mist-netting site C1	16°28’14,4’’	16°21’21,5’’	26 January 2010
Mist-netting site C2	16°28’13,2’’	16°21’16,9’’	26 January 2010
Mist-netting site C3	16°28’14,3’’	16°21’14,2’’	26 January 2010
Mist-netting site C4	16°28’09,8’’	16°21’08,2’’	27 January 2010
Site D	16°23’08,3’’	16°22’37,4’’	27 January 2010

Photographs of the mist-netting sites.

Figure A1: Mist-netting site B1.

Figure A2: Mist-netting site B2.

Figure A3: Mist-netting site B3.

Figure A4: Mistnetting site C1.

Figure A5: Mist-netting site C2.

Figure A6: Mist-netting site C3.

Figure A7: Mist-netting site C4.