

Salinas in the Mediterranean region and their birds: present status, threats and conservation requirements

A Workshop organised by the Department of Animal and Plant Biology and Ecology of the University of Cádiz and the Portuguese Society for the Study of Birds (SPEA). Olhão, Portugal - 23 and 24 March 1996.

INTRODUCTION

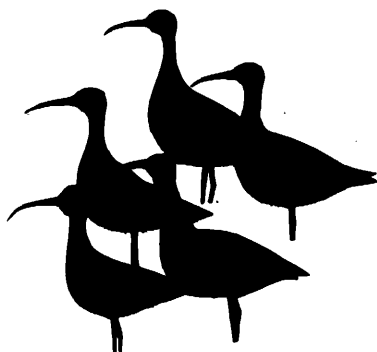
The importance of salinas as an habitat for waterbirds is recognised by many authors who have studied them in Europe, South Africa, North America and India. They are known to play an important rôle in the life of a wide variety of waterbirds, either when breeding, over-wintering or on migration, and thus contributing to the maintenance of biodiversity in a series of wetlands around the Mediterranean region.

During the two last decades Mediterranean salinas have been subject to very important changes as a result of social and economic events. Generally speaking they have been either industrialized, abandoned or transformed into fish-farms, with only a small proportion retaining their original features. This process is not yet finished and further transformation is still occurring.

The impact that these changes have upon bird populations is only little known, mainly because the nature of the changes and their impacts is varied. However, an increasing number of studies on this subject have been published. Yet, within the range of species which are affected by salina transformations and changes there are several with an unfavourable conservation status. Many of the published studies highlight the negative effects of certain types of transformation and abandonment and draw attention to the need for a conservation strategy for this very special man-made habitat. It should also be noted that even less is known about the use of new habitats, resulting from this process of change.

When promoting this Workshop our main concern was to bring together the people currently working in this subject in Europe in order to identify the key issues to be investigated and to define the guidelines for a saline conservation strategy.

The present document summarizes the results of the Workshop.



AGENDA

23 March

Formal opening (*João C. Farinha, President of SPEA*)

Presentation of the Workshop (*R. Rufino and A. Pérez-Hurtado*)

National Reports - Chairperson Alejandro Pérez-Hurtado

Report of the situation in Portugal (*R. Neves and R. Rufino*)

Report of the situation in Spain / Atlantic coast (*A. Pérez-Hurtado*)

Report of the situation in Spain / Mediterranean coast (*F. Robledano*)

National Reports - Chairperson Rui Rufino

Report of the situation in France (*J. Walmsley*)

Report of the situation in Italy (*N. Bacetti*)

General discussion of the National Reports including information received from Morocco and Slovenia.

Methodologies - Chairperson Renato Neves

The MedWet habitat classification system and its potential use in salinas. (*J.C. Farinha*)

Working Groups

Three simultaneous working groups programmed to discuss future needs and priorities;

1. Inventories (*Chaired by R. Neves*)
2. Management (*Chaired by H. Castro*)
3. Research (*Chaired by A. Pérez-Hurtado*)

24 March

Final Session - Chairperson Alejandro Pérez-Hurtado

Presentation and discussion of the Working Group's conclusions

Planning the future and Closure

THE NATIONAL REPORTS

The National Reports covered the status of salinas at the national/regional level namely their current uses, types of degradation and transformation processes. The importance of these salinas as habitats for waterbirds was also reviewed together with their aesthetic and historical values.

These reports highlighted the differences between salinas located in tidal and non-tidal areas, showing how those which depend on tidal cycles use less energy and have a cyclic rhythm, whilst those located in non-tidal areas control the water flow using pumps and therefore have a much greater control over the water levels within the salinas. These differences between tidal and non-tidal salinas, together with the size of the salt-pans and the degree of industrialization, also influence the waterbird fauna using the salinas. Tidal salinas hold a larger proportion of breeding and non-breeding waders, and the larger salinas hold larger numbers of Anatidae.

On the whole the National Reports showed that significant proportions of the Palearctic population of a wide variety of species use salinas at one or several stages of their lives and that for a selection of these species the salinas may play a crucial rôle in their survival. Some of the reports suggested also that the presence of salinas in one particular wetland system may increase the local biodiversity as well as overall carrying capacity.

The management experiences developed in Spain and France, and referred in the national reports, show that sustainable development can be achieved when there is serious co-operation between conservation bodies and the salt industry.

THE WORKING GROUPS

Inventory

This group recognized the need for an inventory of the salinas around the Mediterranean region, in order to identify the size and status of existing salinas and their use by birds. Such an inventory needs to adopt a common classification system in order to make results comparable internationally. Given this, the group worked on a preliminary classification of salinas, which was presented for discussion, based on information circulated within the MedWet Project. It was also suggested that the Habitat Classification System outlined within the Inventory sub-project of MedWet should be used, with necessary adaptations, when separating different habitat types in the research projects to be set forward as a result of the present initiative.

The discussions also highlighted the need for a review of bibliographic data, namely concerning old inventories, information on technological aspects, ecology of salinas and statistics of salt production. The group stressed that national inventories, covering physical and biological

features, should be promoted in all countries of the region and that these are essential to the outline of an international conservation strategy for salinas.

Management

This group recognized the ecological and cultural importance of the Mediterranean salinas and the threats to which they are currently subject. These occur mostly as a result of the crises that the salt industry is facing and of the privileged location of many of them.

The group agreed that Mediterranean salinas are diverse and can only be grouped within a complex classification system. Given this, conservation management options will have also to be diverse and should consider local characteristics.

The management options for the three major salina categories; active/operational, abandoned/non-operational and transformed salinas, are different and should consider the following:

a) Active / operational salinas

These areas should be managed as integrated systems comprising cultural as well as ecological values. The need for agreements between owners and conservation bodies was stressed as the only solid basis for sustainable management of operational salinas.

b) Salinas transformed into fish-farms

These transformed salinas have little relevance for the bird faunas of the wetlands where they are located. Therefore, it was recognized the need for environmental impact assessments before implementing such transformations. These EIAs should consider the cumulative impacts of fish-farming within a given wetland and should outline measures to minimize the negative impacts. Existing European Union funds for new transformations should only be released when appropriate compensatory measures are included in the projects submitted for funding.

Within salinas which have been already transformed, and particularly inside protected areas, conservation bodies should seek management agreements with owners in order to ameliorate the conditions for waterbirds in their fish-farms. Namely scheduling the water draw-down for fisheries harvest in order to make benthic invertebrates available for migrating waders, particularly in spring when feeding opportunities can be critical.

c) Abandoned salinas

It was recognized that there was a need for a hierarchical classification of these salinas according to their ecological value. To achieve this we must define ecological criteria relating to the rôle played by each salina. Examples of this included their use for: breeding of colonial waterbirds, feeding and roosting grounds for migrating waders, post-

nuptial assembling places where waterbirds gather when inland wetlands are dry, complementary to the intertidal flats in terms of food availability or dedicated to the restoration of endangered species. The management options will have to be taken accordingly.

As in the two other situations management agreements with owners should be sought with conservation bodies and in this particular situation it should be stressed that management can benefit owners as it adds value to the salinas which gives opportunities for forms of ecological tourism, which may be explored within clearly defined limits.

Research

Understanding the need for priority goals in terms of research the group agreed in the definition of one major objective; *to understand why salinas are important for waterbirds and with this knowledge to layout the basis for their management and conservation.*

The path to achieve this main goal is not easy and will have to deal with a series of questions for which we do not have an answer at present. Three of them were considered as essential:

- How does management affects invertebrate productivity in salinas and its year round as well as its use by selected waterbird species?
- What is the turnover rate and body condition of waterbirds using salinas (in both the Mediterranean and Atlantic) during migration?
- Which environmental factors are determining the breeding parameters of key shorebird species (namely Avocet *Recurvirostra avosetta*, Black-winged Stilt *Himantopus himantopus* and Kentish Plover *Charadrius alexandrinus*) breeding in salinas, with different management and conservation status?

CONCLUSIONS

Recognising the importance of salinas as habitat of many waterbird species, many of them having a high conservation status and thus requiring urgent conservation measures, and recognising that only a co-ordinated effort can achieve effective results, the Workshop agreed that:

- the participants will maintain a regular exchange of information and will establish contact with other people actively working and interested in salinas throughout the Mediterranean region.

- the Working Group chairpersons will prepare a document for wide discussion on the subject of their sessions and including the recommendations which were then adopted.
- the organisers of the Workshop, together with the chairpersons of Working Groups and a selection of other people will prepare a document which includes the key issues identified in this Workshop and the reports from the working groups and will circulate it for discussion widely in order to incorporate other perspectives.

The aim of this process is to produce a synthesis document underlining **a strategy for the conservation of the Mediterranean salinas and their birds.**

LIST OF PARTICIPANTS

Nicola Baccetti - Istituto Nazionale per la Fauna Selvatica
Enrique Lopez Carrique - Agencia del Medio Ambiente, P.N. de Cabo de Gata-Nijar
Hermelindo Castro - Dept. de Biología Vegetal y Ecología, Fac. Ciencias Experimentales, Univ Almería
Susana Isabel Coelho
Vitor Encarnação - Parque Natural da Ria Formosa / ICN
João Carlos Farinha - CEMPA / ICN
Nuno Grade - Parque Natural da Ria Formosa / ICN
Francisco Hortas Rodríguez-Pascual - Dept. de Biología Animal, Vegetal y Ecología, Fac. de Ciencias del Mar
Francisco Lebrero Contreras - Parque Natural Bahía de Cádiz, Consejería del Medio Ambiente, Delg. Provincial de Cádiz
Ricardo Jorge Lopes - IMAR - Instituto do Mar, Universidade de Coimbra
António S. Luis - Universidade de Aveiro, Dept. Biología
José António Masero Osorio - Dept. de Biología Animal, Vegetal y Ecología, Fac. de Ciencias del Mar
Luisa Mendes
Paulo Monteiro - R.N. do Sapal de Castro-Marim e V.Real de Sto. António
Francisco Moreira - Fac. Ciências de Lisboa, Dept. Zoologia
Gonzalo Muñoz Arroyo - Dept. de Biología Animal, Vegetal y Ecología, Fac. de Ciencias del Mar
Tiago Múrias dos Santos - IMAR, Dep. Zoología, Univ. Coimbra
Renato Neves - CEMPA / ICN
Felipe Oliveros Pruaño - Parque Natural Bahía de Cádiz, Consejería del Medio Ambiente, Delg. Provincial de Cádiz
Alejandro Pérez-Hurtado de Mendoza - Dept. de Biología Animal, Vegetal y Ecología, Fac. de Ciencias del Mar
Carla Pimentel - Dept. Ciências e Eng. do Ambiente, FCT-Univ. Nova
Francisco Robledano Aymerich - Sección de Espacios Naturales, D.G. del Medio Natural, Cons. del Medio Ambiente, Agricultura e Agua
Santiago Rodríguez-Pizarro - Dept. de Biología Animal, Vegetal y Ecología, Fac. de Ciencias del Mar
Rui Rufino - CEMPA / ICN
António Severo - R.N. do Sapal de Castro-Marim e V.Real de Sto. António
Nuno Vieira
John G. Walmsley - MedMaravis