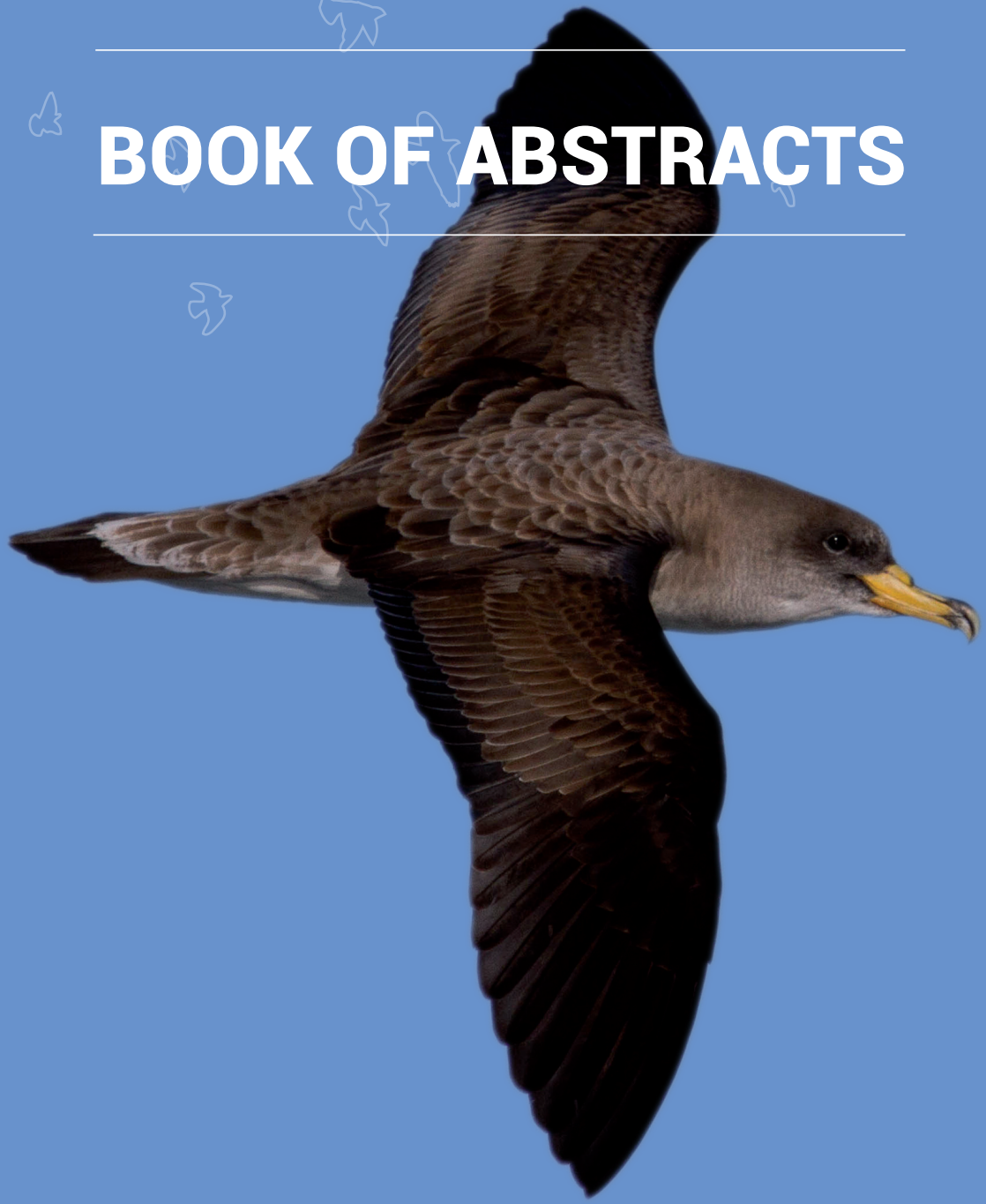
# 2nd SYMPOSIUM
ON THE CONSERVATION OF MARINE AND COASTAL BIRDS IN THE MEDITERRANEAN

**HAMMAMET - TUNISIA**
**FROM 20 TO 22 FEBRUARY 2015**

# BOOK OF ABSTRACTS



UNEP MAP RAC/SPA جمعية أحباء الطيور Association "Les Amis des Oiseaux" MED MARAVIS Conservatoire du littoral TOUR DU VALAT STATION BIOLOGIQUE

## RAC/SPA

**The Regional Activity Centre for Specially Protected Areas (RAC/SPA) was established in Tunis in 1985 by decision of the Contracting Parties to the convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention), which entrusted it with responsibility for assessing the situation of natural heritage and assisting the Mediterranean countries to implement the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD) Protocol which came into force in 1999.**
**RAC/SPA's mission is to provide assistance to Mediterranean countries in the implementation of their commitments under the (SPA/BD) Protocol, especially in regard to developing and promoting Specially Protected Areas (SPAs) and reducing the loss of marine and coastal biodiversity.**



Cover picture : Hichem AZAFZAF

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# SOMMAIRE




# 2nd SYMPOSIUM
## ON THE CONSERVATION OF MARINE AND COASTAL BIRDS IN THE MEDITERRANEAN
## In memory of Alan JOHNSON

Dear friends and colleagues both past and present, Ladies and Gentlemen.

My first thoughts today concern the passing away of a very dear friend and colleague Alan Johnson (known as Mr.Flamant) with whom I have worked closely with for the past 40+ years. Alan died on the evening of the 24th December 2014 in much the same way as another colleague Heinz Hafner both from cancer.

Some of you will remember how dedicated Alan was during his study of the Greater Flamingo Phoenicopterus ruber roseus in the Camargue and the Mediterranean region, and also on a global scale covering the 6 world species.

Dr Hoffmann who founded the Biological Station La Tour du Valat first initiated the Flamingo study in the 1950s, and later asked Alan if he would continue the project in 1960. Alan brought the Flamingo back to life in the Mediterranean after a period of 8 years during which time no flamingos bred in the Camargue during the period 1960-68.

Alan was meticulous in everything he did and like Dr. Hoffmann discovered that there was a lack of suitable breeding islands in the Salina of Salin-de-Giraud. In 1969, some 5-6000 adult flamingos suddenly appeared and settled to breed on a small island in the southern part of the Etang du Fangassier 1. Those of you who have visited a flamingo nesting island will know that after several years of breeding, especially on small islands, flamingos can destroy the nesting habitat.
With this in mind, fruitful discussions were held with the salt company Salin du Midi et les Salines de l'Est and an artificial island was created close by in the Etg.du Fangassier 2 in 1970, with enough space for approximately 10,000 breeding pairs.



The following winter, on a cold windy February morning Alan rounded up a team of flamingo nest builders and by the end of the morning we had made about 200-300 nests. The aim was to attract flamingos to the site and hopefully establish a breeding colony. It was a total success and flamingos have nested there for the past 45 years. In 2014, despite several breeding attempts by the flamingos they did not breed. No doubt the representative from the Tour du Valat will enlighten us about this matter.

Having said that I would like to ask you to join me in a one minute silence in memory of Alan who dedicated his life to the recovery and conservation of the Greater Flamingo that has over the years become a "flagship species" for the Mediterranean.

John G. Walmsley

# SCIENTIFIC PROGRAMME

**Thursday, Feb. 19th, 2015** **19:00 Registration and ice-breaking event**

**Friday, Feb. 20th, 2015**

**09:00 Introduction to the Symposium, welcome addresses**

**09:45 In memory of Alan Johnson** (J. Walmsley)

**10:00 Vilanova, ten years after** (X. Monbailliu)

10:10-10:40. L. Ben Nakhla - The Action plan for the conservation of bird species listed in annex II of the Protocol on Specially Protected Areas and Biological Diversity.

***10:40-11:00. Coffee break***

## Session 1A. 11:00-12:30 Oral presentations on key Mediterranean seabird species

11:00-11:30. **Opening talk**: J. Sultana - Fifty years of seabird research and conservation in the Maltese Islands: are we getting there?

11:30-11:50. J. Arcos - Conservation of the critically endangered Balearic shearwater (*Puffinus mauretanicus*): an update

11:50-12:10. D. Sahin - Are there more yelkouan shearwaters than we thought?

12:10-12:30. J. Borg - Population estimates in Maltese pelagic breeding birds: numbers, trends and an appeal to assess these cautiously

***12:30-14:30. Lunch***

## Session 1B. 14:30-18:30 Oral presentations on key Mediterranean seabird species

14:30-15:00. **Opening talk**: R. Ouni - Seabirds of the National Park of Zembra: census, spatial distribution and breeding monitoring.

15:00-15:20. H. Hammrouni - Status of the European Storm Petrel *Hydrobates pelagicus melitensis* in Tunisia.

15:20-15:40. M. Habib - Observations on Slender–Billed Gull *Larus genei* breeding in Egypt during 2014. .

15:40-16:00. G. Ramadan-Jaradi - Phenological and conservation status of marine birds in Lebanon.

16:20-16:40. V. Dumbović Mazal - Marine and coastal birds of Croatia: status, population size and conservation.

***16:20-16:40. Coffee break***

16:40-17:00. D. Saveljic - Seabirds of Montenegro.

17:00-17:20. J. Mayol - Status evolution of the seabirds of the Balearic Isles.

17:00-17:40. D. Portolou - Seabirds of Greece.

17:40-18:00. M. Thévenet - A collaborative regional database for seabird ringing data.

18:00-18:20. A. Taibi – Study of the Scopoli's Shearwater at the Rachgoun Island (Beni Saf, Algeria).

18:20-18:30. General discussion: mini-comments from the floor, to highlight common issues, gaps and pitfalls presented in the talks of the day.

## Saturday, Feb. 21st, 2015

## Session 2. 09:00-12:30 Not only seabirds: oral presentations on other Barcelona AP species

09:00-09:30. **Opening talk**: G. Catsadorakis - Status of the Dalmatian pelican *Pelecanus crispus* and the Great White pelican *Pelecanus onocrotalus* in the countries around the Mediterranean.

09:30-09:50. F. Monti - Scale-dependent approaches applied to the conservation biogeography of a cosmopolitan raptor: the Osprey .

09:50-10:10. A. Qninba - Does the population of Eleonora's Falcon population in Essaouira, Moroco show sign of decline due to a saturation of nesting sites?



***10:10-10:30. Coffee break***

10:30-10:50. M. Malki. New population assessment and variation in breeding parameters of Mogodor Island colony of Eleonora´s Falcon, *Falco eleonorae*.

10:50-11:10. H. Azafzaf - Promoting IWC data analyses and management in North Africa for monitoring Annex II bird species of the SPA/BD Protocol.

11:10-11:30. **Closing talk**: J. Walmsley - The ecology of an important coastal breeding species in the Mediterranean, the Common Shelduck.

11:30-11:50. General discussion: mini-comments from the floor, to highlight common issues, gaps and pitfalls presented in the course of Session 2.

**11:50-12:30. Extra session**: Waheed Salama Hamied Mohamed Gomaa - Action Plan to Address Bird Trapping along the Mediterranean Coasts of Egypt.

***12:30-14:30. Lunch***

## Session 3 14:30-17:00 Oral presentations about SPAMIs and other aspects of site protection

14:30-15:00. **Opening talk**: J. Arcos – Seabirds and the need for a marine Natura 2000 network: the Spanish experience.

15:00-15:20. N. Barbara - The importance of the Marine IBA network and marine protected areas for the conservation of Mediterranean Seabird species.

15:20-15:40. N. Lliteras. The planning process of Natura 2000 for the sea birds in the Balearic Islands.

15:40-16:00. A. Berbash - Waterbird diversity and breeding in Mallaha, Tripoli.

***16:00-16:20. Coffee break***

16:20-16:40. P. Lo Cascio – Marine and coastal birds of the Aeolian Archipelago (Sicily): present knowledge and conservation status.

16:40-17:00. S.I. Cherkaoui - Importance of the Moroccan Atlantic coastal zones for the wintering of pelagic seabirds.



## 17:00-19:00 Medmaravis general assembly, nomination of new board/council members and general discussion on the future of Medmaravis

**Sunday, Feb. 22nd, 2015**

## Session 4 09:00-10:30 Relevant conservation issues on Mediterranean seabirds

09:00-09:30. **Opening talk**: N. Baccetti - 15 years of rat eradications on Italian islands for the conservation of breeding seabirds.

09:30-09:50. M. Baini - A shared protocol to investigate the ecotoxicological status of Mediterranean shag (*P. aristotelis desmarestii*) in the Tyrrhenian Sea.

09:50-10:10. A. Hamza - Habitat restoration and breeding density of Lesser crested tern *Thalasseus bengalensis* at Jeliana colony , Libya [Option to move to session 1].

10:10-10:30. C. Feltrup-Azafzaf - Developing Local Conservation Group (LCG) networks for the management of coastal habitats and protection of marine and coastal birds – a case study from Tunisia [Moved from session 3].

***10:30-11:00. Coffe break***

## Session 5 11:00-12:30 Different approaches to the study of coastal and marine birds in the Mediterranean

11:00-11:30. **Opening talk:** B. Metzger - Far beyond the horizon - modern tracking techniques as a tool to identify marine IBAs for Maltese seabirds.

11:30-11:50. A. Hamza - Chick diet composition of Lesser crested Tern (*Thalasseus bengalensis*) at their Mediterranean Breeding sites in Libya.

11:50-12:10. A. Abdennadher - Relevance of refuse dumps in the diet of Yellow-legged Gull from the breeding colony of Chikly island (Tunisia): 3 years of monitoring.

12:10-12:30. F. Hamza - Effects of habitat features on the abundance of Greater Flamingo (*Phoenicopterus roseus*) wintering in the Gulf of Gabès, Tunisia.

**12:30 - 14:30 Lunch**

**14:30-16:30 Round Table: Bird monitoring for the EU Marine Strategy Framework Directive and the future role of Mediterranean ornithologists.** Introduced by N. Baccetti and with the participation of: P. Yésou (Seabirds and the Marine strategy Network Directive: application in France); J. Arcos (Attaining a good environmental status for seabirds through the marine strategies: the Spanish case), B. Metzger (MS activities in Malta). At the end of the round table, Francisco Romero will present the last work done by RAC/SPA for seabirds within the framework of the Ecosystem Approach of the MAP.



***16:30-17:00. Coffee break***

**17:00-17:30 Reporting on the CdL - Medmaravis review of contamination in Mediterranean seabirds** (F. Borghesi)

**17:00-18:00 Conclusions**

## Relevance of refuse dumps in the diet of Yellow-legged Gull from the breeding colony of Chikly Island (Tunisia) : 3 years of monitoring

Aida ABDENNADHER[1]

[1]Institut National Agronomique de Tunisie , a.abdennadher@gmail.com

The Yellow-legged gull *Larus michahellis* is usually considered as an opportunistic species that depends on food derived from anthropogenic activity such as garbage and fishery discards. However, although it has become a problematic species in many Mediterranean countries, there is still no information about its status in Tunisia. The aim of this work was to assess the differential use of marine and terrestrial resources by the Yellow-legged gulls breeding in an urban area on Chikly Island. Dietary reconstructions were performed through the analysis of regurgitates and δ13C, δδ34S and δ15N of fledgling feathers. Contrary to most Mediterranean breeding colonies and to our expectations, the mixing model showed that Yellow-legged gulls from Chikly are above all marine foragers. Whereas the Lake of Tunis was the principal source of food in 2005 and 2007, chicks from 2006 were fed mainly with prey from the Gulf of Tunis. Although the Gulf is located further from the breeding colony and has less fishing activity than the Lake, our study demonstrated that it is used as an alternative foraging habitat. The Bayesian mixing model approach proved to be a useful tool for evaluating temporal variations in the feeding ecology of the colony, which is relevant information in the management of a wild species. This study also demonstrated the importance of isotopic variability among years for inferring diet diversity and food availability for the colony, thereby allowing demographic forecasts when trophic resources vary in abundance or the foraging habitat is disturbed.



## Conservation of the critically endangered Balearic shearwater (*Puffinus mauretanicus*): an update

J.M. ARCOS[1]

[1]SEO/BirdLife - Marine Programme, Delegació de Catalunya, C/Murcia 2-8, local 13, 08026 Barcelona, Spain. jmarcos@seo.org

The Balearic shearwater (*Puffinus mauretanicus*) is regarded as the most threatened seabird in Europe. Increasing research in the last two decades has provided insights of its biology and conservation concerns, particularly regarding the marine environment. However, monitoring efforts at colonies are very limited at present, and conservation action both on land and at sea is insufficient to reverse the serious decline of the species. An overview of the recently updated European Action Plan of the species is presented, with further updates from research and conservation action in the last few years. Research and conservation priorities are discussed.

## Attaining a good environmental status for seabirds through the Marine Strategies: the Spanish case

J.M. ARCOS[1], B. Rodríguez[2], J. Bécares[1] & A. Cama[1]

[1]SEO/BirdLife - Marine Programme, Delegació de Catalunya, C/Murcia 2-8, local 13, 08026 Barcelona, Spain. jmarcos@seo.org
[2]SEO/BirdLife, Delegación de Canarias. C/ Libertad nº 22 (Pueblo Sabanda), 38296 La Laguna, Tenerife, Canary Islands, Spain.

The Marine Strategy Framework Directive, approved in 2008, is the first legislative instrument of the European Union to address the conservation of marine biodiversity. This Directive adopts an ecosystem-based approach to address its main goal, which is to attain a “good environmental status”

of the European seas by 2020. To that aim, four major regions and several sub-regions are taken in consideration, and a Marine Strategy must be developed for each of these sub-regions. Seabirds are regarded as indicators of marine environmental health. Monitoring and conservation efforts must be carried out to attain a good conservation status for all seabird species. The experience in Spain is reported. Seabirds were thoroughly treated in an independent document, for each of the 5 marine sub-regions of the country (2 of them in the Mediterranean). Seabird studies included colony distribution, abundance (breeding numbers and abundance at sea), demographic parameters (breeding success, survival), persistence of threats (predation at colonies, bycatch), and designation of marine protected areas. Overall, several species failed to attain a good environmental status for most of these studies. Proper monitoring programmes and increasing conservation action are needed to improve this evaluation in the future.

## Seabirds and the need for a marine Natura 2000 network: the Spanish experience

J.M. ARCOS[1], J. Bécares[1], B. Rodríguez[2] & A. Ruiz[3]

[1]SEO/BirdLife - Marine Programme, Delegació de Catalunya, C/Murcia 2-8, local 13, 08026 Barcelona, Spain. jmarcos@seo.org
[2]SEO/BirdLife, Delegación de Canarias. C/ Libertad nº 22 (Pueblo Sabanda), 38296 La Laguna, Tenerife, Canary Islands, Spain.
[3]SEO/BirdLife. C/Melquiades Biencinto 34, 28053 Madrid, Spain

Marine Protected Areas (MPAs) play a key role in the preservation of marine biodiversity, but have being lagging behind the protection of terrestrial environments. Moreover, they have largely overlooked wide-ranging species such as seabirds. The process to extend the Natura 2000 network to the marine environment in Spain, particularly the Special Protection Areas (SPAs) under the EC Birds Directive is described. This was facilitated through the previous identification of marine Important Bird Areas (IBAs), supported by a LIFE project in 2004-2009. These areas were adopted by the Spanish Government as the base for the SPA network. A 5-year process under the framework of another LIFE+ project, INDEMARES, enabled the assessment in detail of the use that seabirds make of these sites, their interaction with human activities and the potential threats that they could face. Ultimately, most of the marine IBAs were designated as SPAs in 2014, adding 49,000 km$^2$ and increasing by a 20 fold the marine area covered by SPAs in Spain. Furthermore, the Spanish Government made the commitment of implementing management plans for these sites within the next 2 years.



## Promoting IWC data analyses and management in North Africa for monitoring Annex II bird species of the SPA/BD Protocol

AZAFZAF H.[1], Deschamps C.[2], Sayoud M.S.[3], Salhi H.[3], Dakki M.[4], Qninba A.[4], Feltrup-Azafzaf C.[1], Abdou W.[5], Assran H.H.[5], Bouras E.[6], Etayeb K.[7], Defos du Rau P.[8] & Mondain-Monval J.Y.[8]

[1] Association "Les Amis des Oiseaux", Ariana Center, Bureau C 208/209, 2080 Ariana, Tunisie, azafzaf@gmail.com
[2] Centre de Recherche de la Tour du Valat, Le Sambuc, 13200 Arles, France.
[3] Direction Général des Forêts, 11 Chemin Doudou Mkhtar, Ben Aknoun, 16300 Alger, Algérie.
[4] Institut Scientifique, Univ. Mohammed V, Agdal, Rabat, Maroc.
[5] Egyptian Environmental Affairs Agency, 30 Misr/Helwan Road, PO 11728, El Maadi Helwan, Egypt.
[6] Environment General Authority, Ganjor Algheran, PO Box 13793, Tripoli, Libya.
[7] Zoology dept. Tripoli University, POBox: 13227, Tripoli. Libya.
[8] Office National de la Chasse et de la Faune Sauvage, CNERA Avifaune Migratrice, Le Sambuc, 13200 Arles, France.

The worldwide monitoring of wetlands and waterbirds, within the framework of the implementation of AEWA (African-Eurasian Waterbird Agreement) and the Ramsar Convention, is one of the main contributions of the International Waterbird Census (IWC). It is one of the largest global monitoring programs on biodiversity. Over 30 million waterbirds are counted annually in mid-January at more than 25,000 wetlands by more than 15,000 volunteers. The IWC largely contributes in assessing the

importance of individual wetlands sites for waterbirds and biodiversity and in estimating the size and trends of waterbird populations, including several Annex II coastal and marine bird species of the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). In 2013, comprehensive studies were coordinated and analyzed for the first time in the North African region with the aim of improving our knowledge of the importance of its wetlands and the size of the water-bird populations wintering in this bio-geographical entity. The importance of this region for some of the Annex II species has been highlighted in respect of their conservation status. Broad-scale spatial patterns of their distribution in 2013 are presented with the aim of formulating suggestions for future ecological analysis. One expected result of these preliminary analyses is to call for a wider use of IWC data for the management and conservation of Annex II bird species of the SPA/BD Protocol. Some of the IWC data management tools, which will greatly enhance our knowledge of wetlands and their waterbirds if applied for the whole region, are also presented.

## POSTER: Recent data on the breeding of the Greater Flamingo *Phoenicopterus roseus* in Tunisia

Hichem AZAFZAF[1] & Claudia Feltrup-Azafzaf[1]

[1]Association "Les Amis des Oiseaux" (AAO), BirdLife in Tunisia. Avenue 18 janvier 1952, Ariana Center, Bureau C208/209, 2080 Ariana, Tunisia, azafzaf@gmail.com & aao@topnet.tn

Tunisia is a North-African country where the Greater Flamingo *Phoenicopterus roseus* can be observed practically everywhere in the coastal wetlands, where water levels and salinity and the availability of food are appropriate. The number of wintering flamingos reaches regularly a total of 55,000. The last important breeding success of the species in Tunisia, goes back to 1991 when 4,000 breeding pairs raised 600 to 700 chicks at Garaet Sidi Mansour (today a Ramsar site) near Gafsa in South Tunisia (Isenmann et al. 2005). In summer, when southern wetlands are dry, some birds move to the north and almost every year some flamingos, usually immature birds, attempt to breed somewhere in Tunisia. They rarely succeed, either because they are inexperienced young birds or due to disturbance. In 2014 a small colony succeeded to breed at Korba Lagoon, a Ramsar site, at Cape Bon. This is the northernmost colony known in Tunisia. This colony produced 50 chicks in August 2014 and thanks to the rapid mobilization of international, national and local partners, including RAC/SPA, the Tour du Valat and Association Tunisienne de Protection de la Nature et de l'Environnement de Korba, and l'Association "Les Amis des Oiseaux", 45 young flamingos were ringed. Several ringed adult birds from different colonies were also sighted at the colony by AAO members. Monitoring and recording of birds from Korba Lagoon will provide valuable information on the movement of birds and their choice of breeding grounds.



## Fifteen years of rat eradications on Italian islands for the conservation of breeding seabirds

N. BACCETTI[1], D. Capizzi[2] & P. Sposimo[3]

[1] ISPRA, Ozzano Emilia, Italy, nicola.baccetti@isprambiente.it
[1] ARP Lazio, Roma, Italy
[1] NEMO srl, Firenze, Italy

A review of all the eradication projects involving *Rattus rattus* and carried out since 1999 on 14 Italian islands is presented. Data on different aspects related to the problem of rat impact and removal have been considered: i) rat impact on target species; ii) benefits for target (and non-target) species from their removal, iii) field techniques and bait delivery methods, iv) impact of rodenticides on non target species, v) rat abundance, home range and movements and vi) rat reinvasion after eradication.

Furthermore, we developed a model aimed at identifying priority islands where eradication should be carried out: an exercise to be possibly extended to the whole Mediterranean?

## A shared protocol to investigate the ecotoxicological status of the European shag (*Phalacrocorax aristotelis desmarestii*) in the Tyrrhenian Sea

M. BAINI[1], N. Baccetti[2], M.C. Fossi[1], S. Casini[1], S. Rizzuto[1], S. Ancora[1], N. Bianchi[1], C. Leonzio[1], F. Giannini[3], A. Navone[4] & L. Marsili[1]

[1] Dipartimento Biologia Ambientale, Università di Siena, Italy, bainimatt@gmail.com
[2] Istituto Superiore per la Protezione e la Ricerca Ambientale(ISPRA), Ozzano Emilia, Italy
[3] Parco Nazionale Arcipelago Toscano, Italy
[4] AMP Tavolara – Capo Coda Cavallo, Italy

In studying natural populations, and particularly endangered species, we consider essential to use non-destructive approaches, that are easily repeatable and compatible with other forms of field monitoring, and in which biological material such as blood, excreta and feathers are sampled and analysed. Other than the ethical/conservation aspects, there are other reasons for developing shared methodologies, for example, when toxicological risk is evaluated in protected or threatened species, in order to decrease disturbance, and when sequential manipulation of birds is carried out for long-term studies for different aims. Progress in this direction has been done for the ecotoxicological study of marine mammals and marine reptiles, while on seabirds the study of biological responses to contamination has been seldom conducted and almost entirely using destructive methods or occasional, un-representative findings. The aim of this pilot study is assess the eco-toxicological status at two breeding areas of Mediterranean Shag (*P. aristotelis desmarestii*), one located in Sardinia (Tavolara MPA) and the other in the Tuscan Archipelago NP (Pianosa island). In both colonies, it was possible to take samples of blood and excreta from chicks during ringing/census operations. In the blood samples we have analysed the levels of some organochlorine contaminants (HCB, DDTs and PCB) and trace elements (Pb, Hg, Cu etc.). The excreta samples were evaluated, by fluorimetric method, for the levels porphyrins (copro, uro and proto porphyrins) as biomarkers of exposure to contaminants. The preliminary results show detectable levels of organochlorine compounds, detectable levels of trace elements and the presence of porphyrins in the excreta.



## The importance of the marine IBA network and marine protected areas for the conservation of Mediterranean Seabird species

Nicholas BARBARA[1], Ben Metzger[1], Joe Sultana[1] & John J. Borg[1]

[1] BirdLife Malta, 57/28 Triq Abate Rigord Street, Ta Xbiex XBX1120, nicholas.barbara@birdlifemalta.org

The protection of important bird areas is one of many tools utilised to protect declining bird species to ensure their-long term recovery. Seabirds are no exception to this measure, their survival depending on the protection of both land and sea areas to counter their worldwide documented decline. The oligotrophic Mediterranean Sea with its fair share of endemic species is no exception to this phenomenon. As further research yields more information on the population dynamics of Mediterranean seabirds, the need for immediate conservation efforts to sustain their future becomes more evident. BirdLife International has over the years established a system of Important Bird Areas, which within EU territory have been the precursors of Specially Protected Areas (SPA) under the Natura 2000 network. The need to designate and protect these areas is driven by the EU Biodiversity Action Plan (2008) which had set a target to declare and manage SPA sites on land by 2010, and those at sea by 2012. Unfortunately to date, many member states across the EU have fallen short of this target, with a pronounced shortage of sites in the Mediterranean particularly in Central Mediterranean. Recent developments concerning Mediterranean endemic seabirds species have exerted a further need for designation of important sites at sea. From the Yelkouan Shearwater's uplisted IUCN status in reaction to further decline, to the recognition of distinct taxonomic species such as the Scopoli's Shearwater, there is a drive to gather more knowledge on these species, and secure the areas important for their survival. Research projects such as the LIFE+ Malta Seabird Project continue to give insights into the range of these highly pelagic seabird species. As further information is gathered on seabird foraging and migratory ranges, the need for trans-national efforts

beyond territorial waters as well as across continents and political boundaries is becoming a necessity rather than an objective. International conventions such as the Barcelona Convention offer the solution with the Mediterranean Sea in its vast but finite range, offering the possibility for cooperation between countries and international NGOs at designating important bird areas across territories.

## The Action plan for the conservation of bird species listed in annex II of the Protocol on Specially Protected Areas and Biological Diversity

Lobna BEN NAKHLA[1]

[1]Regional Activity Centre for Specially Protected Areas, Boulevard du Leader Yasser Arafat - B.P. 337, 1080 Tunis Cedex - TUNISIA, lobna.bennakhla@rac-spa.org

The Action plan for the conservation of bird species listed in annex II of the Protocol on Specially Protected Areas and Biological Diversity was elaborated and adopted in 2003 by the Contracting Parties to the Barcelona Convention (Catania, 2003). Since this date, RAC/SPA has carried out several actions as listed in the implementation timetables (2003-2007/2008-2013). These covered mainly the assistance of the Mediterranean countries in their efforts to adequate protection of endangered bird species through the elaboration of guidelines, the organization of specific training courses and census field mission in coordination with international and national NGOs as well as the support of public awareness and information campaigns. Meanwhile and as a result of the first Mediterranean Symposium on Ecology and conservation of the Bird species listed under Annex II (Villanova I Geltrù, Spain, and November 2005), 10 new threatened marine and coastal bird species were added to the List, which reaches 25 species. The last review of the implementation of the Action Plan, made in 2013, reflected a positive overall picture because the progress made covers all scheduled actions. In addition a new timetable for 2014-2019 was established and adopted by the 18th Ordinary Meeting of the Contracting Parties to the Barcelona Convention (Istanbul, 2013).



## Waterbird diversity and breeding of some species in Mallaha, Tripoli

Eman BENYEZZA[1], Tahani Shanan[1], Ali Berbash[2] & Khaled Etayeb[1]

[1]Zoology Department, Faculty of Science, Tripoli University. P.o.Box: 13227
[2]Environment General Authority (EGA-Libya).

The present study was started in March 2014 to monitor the breeding and population dynamics of waterbirds at Al-Mallaha wetland. The area is classified as a site of national importance for Black-winged Stilt, Cormorant, Dunlin, Flamingo, Shoveler and Teal. Mallaha is a salt marsh, fed by a canal from the sea all year-round and by rainfall during winter. A total of 3812 birds of 43 species were observed, with the highest numbers counted during the last week of April 2014. The study also recorded nine important wetland species mentioned in Annex II of the Protocol concerning SPAs. Moreover, this study recorded a total of 42 and 32 nests of Black-winged stilt *Himantopus himantopus* and Little tern *Sterna albifrons* respectively and noted the different clutch sizes. Breeding success of both species was significantly affected by predation.

## Population estimates in Maltese pelagic breeding birds: numbers, trends and an appeal to assess these cautiously

John J. BORG[1], Joe Sultana1, Ben Metzger[1] & Nicholas Barbara[1]

[1] BirdLife Malta, 57/28 Triq Abate Rigord Street, Ta Xbiex XBX1120, joesultana@maltanet.net

Mediterranean islands host four species of pelagic seabirds of which Scopoli`s Shearwater *Calonectris diomedea* is the most widespread, present from coastal Spain eastwards into the Aegean.

The Balearic Shearwater *Puffinus mauretanicus* is confined to the Balearic Islands, while the main concentrations of the Yelkouan Shearwater *Puffinus yelkouan* and Storm-petrel *Hydrobates pelagicus melitensis* are essentially central Mediterranean. The Maltese Islands hold significant colonies of *C. diomedea, P. yelkouan* and *H. p. melitensis*. Annual censuses of the breeding population of the three species have been carried out since 1983. The methodology used was described elsewhere, highlighting the various difficulties encountered during these counts. Seabird censuses present some of the most demanding challenges of ornithological studies, and this is exceedingly so when attempts are made in counting the breeding population of underground nesting seabirds such shearwaters and storm-petrels. The majority of these species visit land only during the breeding season under cover of darkness. They nest in narrow crevices in vertical cliff faces, among boulder screes on cliff ledges and beneath cliffs and inside sea-caves. During the breeding season, the colonies are also visited by numerous prospecting and non-breeding birds, greatly inflating the number of individual birds in the colony. Faced with all these variables, any figures presented from these censuses can only be considered at best, as guesstimates. Without the necessary background knowledge of the biology and ecology of the species under study, in many cases, these censuses will result in greatly inflated figures as were recently reported for Malta, Lampedusa and Zembra, Tunisia. These overestimated figures will inevitably lead to short and long term negative implications on any conservation efforts undertaken for these species.

## The status of the Dalmatian pelican *Pelecanus crispus* and the Great White pelican *Pelecanus onocrotalus* in the countries around the Mediterranean

Giorgos CATSADORAKIS[1]

[1]Pelican Specialist Group of Wetlands Intl and IUCN SSC, doncats@otenet.gr



In the Mediterranean and the Black Sea regions the Dalmatian Pelican *Pelecanus crispus* breeds in seven countries (no. of nesting sites in brackets): Montenegro (1), Albania (1), Greece (5), Bulgaria (1), Romania (1), Ukraine (1) and Turkey (5). Most birds breed at inland marshes and lakes, and in less numbers at coastal lagoons. In 2013-14, its breeding population at those sites exceeded 2500 pairs. The increase in the breeding population can be attributed to the protection of their nesting sites (less disturbance and persecution), as well as to the abundance of prey and to milder winters. Circa 40% of the Palearctic breeding population of the White Pelican *Pelecanus onocrotalus* occurs in Southeast Europe and Turkey. They breed in four countries (no. of nesting sites in brackets): Greece (1), Turkey (2) Romania (1) and Ukraine (1-2). In 2011-2012 the White Pelican population at these sites was estimated to be 4702-5175 pairs. Climate change and the degradation or drainage of stop-over wetlands along the White Pelican migration routes between Southeast Europe and Africa are changing its staging behaviour. Disturbance at nesting places remains the main threat for both species of pelicans, while direct persecution and electric power lines still cause significant problems.

## Importance of the Moroccan Atlantic coastal zones for the wintering of pelagic seabirds

Sidi Imad CHERKAOUI[1] & Asmae Essabbani[1]

[1]GREPOM/ BirdLife, icherkaoui.grepom@gmail.com

As part of the IBA assessment Programme in Morocco, we conducted pelagic seabird monitoring during six winters (Dec, Jan, Feb) from 2008/2009 until 2013/2014 along the coastline situated between Rabat in the south and Kenitra in the north. A total of 17 species were observed. Six species were present regularly with fluctuating numbers including the critically endangered Balearic shearwater (*Puffinus mauretanicus*). The most abundant species were: Manx Shearwater (*Puffinus puffinus*) with a maximum number of 193 birds counted during the winter 2011/2012 and Gannet (*Sula bassana*) with a maximum number of 320 birds counted during the winter 2013/2014. The numbers of the endangered Balearic shearwater wintering in the area varied from 28 birds to more than 112 birds. The first results show that the coast zone covered during the survey, which represent

only 2% of Moroccan shoreline, is fairly attractive for migratory pelagic seabirds and therefore it is very important to extend our survey in order to determine Marine Important Bird Areas in both Mediterranean and Atlantic Moroccan coasts.

## Status and Conservation of Seabird species in Greece and the current Marine Important bird area network

Danae PORTOLOU[1]

[1]Hellenic Ornithological Society, Themistokleous 80, Athens 10681, Greece, dportolou@ornithologiki.gr

Since 1995 the Hellenic Ornithological Society (HOS) has studied the status and current population of 5 seabird species, namely the Mediterranean Shag (*Phalacrocorax aristotelis*), Scopoli's Shearwater (*Calonectris diomedea*), Yelkouan Shearwater (*Puffinus yelkouan*), *European Storm Petrel* (*Hydrobates pelagicus*) and Audouin's Gull (*Larus audouinii*). Between 1997 and 1999, HOS carried out a LIFE project (B4-3200/96/498) on 'the conservation of *Larus audouinii* in Greece', and intensified this work during the period 2009-12 with the LIFE project LIFE 07 NAT/GR/00285: 'Concrete Conservation Actions for the Mediterranean Shag and Audouin's Gull in Greece, including the Inventory of Relevant Marine IBAs'. Through the two above-mentioned LIFE projects 41 marine Important Bird Areas (IBAs) were added to the existing 25 IBAs that included a marine component, thus by 2012 the Greek inventory numbered 66 sites. The process used to delineate the mIBA network is described, as well as the characteristics of the Greek marine IBA network and the gaps identified. HOS continues to work with seabirds through a project funded by the A.G. Leventis Foundation (2013-15), mainly focused on the identification of colonies of the three procellariiformes species occurring in Greece and the designation of pelagic marine IBAs. National Species Action Plans are planned to be compiled for 4 seabird species during 2015. Work is still needed so as to achieve the designation of all marine IBAs as SPAs and as SPAMIs.



## Marine and coastal birds of Croatia: status, population size and conservation

Vlatka DUMBOVICH MAZAL[1]

[1] State Institute for Nature Protection, Radnicka 80/7, HR-10 000 Zagreb, Croatia, Vlatka.DumbovicMazal@dzzp.hr

The status of the Mediterranean Action Plan (MAP) bird species occurring in Croatia is presented. Eight are regular breeders, three are wintering birds, two are extinct breeders and four are rare visitors. According to the IUCN Red List categories, eight of regularly occurring species are classified as threatened (CR, EN, VU). Monitoring activities cover most of the breeding populations. Changes in use of coastal wetlands – both natural or semi-natural (e.g. saltpans) – are major threats to the *Charadrius alexandrinus, Phalacrocorax pygmeus* and *Sterna albifrons*, while predation by invasive predators (predominantly rats) results in extremely low breeding success at colonies of *Calonectris diomedea* and *Puffinus yelkouan*. Knowledge on the extent of fishing by-catch is limited and the feeding areas of the two breeding Procellariiformes are still unknown. Those two species of Procellariidae have similar conservation issues, thus a joint conservation action plan is in preparation.

## Developping Local Conservation Group (LCG) netwoks for the management of coastal habitats and protection of marine and coastal birds – a case study from Tunisia

Claudia FELTRUP-AZAFZAF[1], Moujib Gabous[1] & Hichem Azafzaf[1]

[1]Association "Les Amis des Oiseaux" (AAO), BirdLife in Tunisia, aao@topnet.tn

In the framework of a project funded by the Critical Ecosystems Partnership Fund (CEPF), the Association « Les Amis des Oiseaux » (AAO) aims to develop the capacity of local NGOs to establish local partnerships for monitoring and participatory management of coastal and marine bird habitats in Tunisia. After the first 18 months of the project an interim report is presented highlighting the impacts on the conservation of 4 coastal wetlands and bird species included in the Action Plan for the Conservation of birds listed in Annex II of the Protocol on Specially Protected Areas and Biological Diversity. The authors also examine the potential for sustainability of the involvement of local NGOs and stakeholder networks in the conservation of coastal wetlands, as well as the possibility of replicating the project's approach at other sites.

## Action Plan to Address Bird Trapping along the Mediterranean Coasts of Egypt

Waheed Salama Hamied Mohamed GOMAA[1]

[1] Responsible Hunting Project Manager, Egyptian Environmental Affairs Agency, 30 Misr - Helwan El-Zyraie Road. Maadi - Cairo, P.O. Box 11728 Egypt, hamiednature@hotmail.com.

Egypt is located on the southern coast of the Mediterranean Sea, and is situated on an internationally important migration route for birds travelling between their breeding grounds in Eurasia and their wintering sites in Africa. Each spring and autumn, many millions of birds make the journey across the Mediterranean, including large numbers of the world populations of many European migrants. On the African-Eurasian flyway, 64 (34%) of the 188 passerine migrants are in decline. Major declines have been detected in iconic species such as Barn Swallow *Hirundo rustica*, Eurasian Cuckoo *Cuculus canorus*, Yellow Wagtail *Motacilla flava* and European Turtle Dove *Streptopelia turtur*, whilst species such as Red-backed Shrike *Lanius collurio* and Eurasian Wryneck *Jynx torquilla* have suffered massive reductions in distribution and are already missing from large swathes of their former ranges.The hunting of migratory birds in Egypt is an ancient practice that has prevailed for centuries and has developed into a significant socio-economic activity in the region, particularly in rural areas. It has been estimated to involve hundreds of thousands of people supporting a variety of groups at both subsistence and livelihoods levels. The primary quarry species is Quail *Coturnix coturnix*, but the nature of the hunting techniques is indiscriminate, resulting in a wide range of other migrant species also being caught. Trapped birds are offered as a delicacy for human consumption via markets and in restaurants across Egypt. Some smaller species of birds of prey such as Sparrowhawk *Accipiter nisus*, Common Kestrel *Falco tinnunculus* and Merlin *Falco columbarius* are attracted by the already trapped songbirds and become entangled themselves. Larger falcons, such as the Saker *Falco cherrug* and Peregrine *Falco peregrinus* are also caught for falconry in significant numbers, using specialized trapping techniques. Hunting regulations are out of date and unenforced. Moreover, some guns and traps are sold without a license and a notable increase in unregulated shooting has been recorded. The scale and indiscriminate methods used in today's hunting activities, particularly in the context of wider threats, such as extensive habitat destruction and climate change, is considered potentially unsustainable and could, in fact, already be affecting many African-Eurasian migrants at the population level. While certain forms of bird trapping are already illegal in Egypt and there are statutory requirements in place to regulate mist netting (such as minimum distances between nets and maximum stipulated heights), the enforcement of such regulations has become an increasingly difficult task due to lack of capacity for law enforcement and awareness of the potential impacts. A comprehensive and regular monitoring programme is required to assess and disseminate data on the scale of trapping along Mediterranean coasts of Egypt.

## Observations on Slender–Billed Gull *Larus genei* breeding in Egypt during 2014

Mohamed HABIB[1]

[1]Red Sea Association , Environment committee coordinator, mrhydro35@hotmail.com

The Slender–Billed Gull *Larus genei is* a common winter visitor to Egypt. The first record of breeding colonies of this species in Egypt were at Gezira Dib, El Malaha and Port Said in 1945. 5,688 nests were counted at El Malaha in 1990, and 1000 pairs nested on El Qarn Island in 1999. In 2014, I undertook a survey with the aim to estimate the number of nesting pairs of Slender-Billed Gulls at El Malaha, located in the Port Said Governorate, and at El Qarn Island, located in Lake Qaroun. These are two of the most important breeding sites in Egypt. Another aim of the survey was to identify threats to the breeding birds at these sites. 12,675 Slender-Billed Gulls were estimated to be at the two colonies. This number represents more than 9 % of the population of 140,000 – 205,000 breeding birds counted in the Black Sea and Mediterranean in 1999–2000. Current estimates from El Malaha and Lake Qaroun also represent more than 15% of the European population of 8,2000–164,000 birds estimated in 1990. Since 1999, the number of nesting pairs has changed greatly at El Malaha and El Qarn Island. In 1999, 1000 pairs was the estimated number of nesting pairs on El Qarn Island compared to 2875 pairs in the current study. This increase in population may be due to conservation efforts by the Environment and Agriculture Ministry, which include banning fishing at Lake Qaroun during the bird breeding season. This action was designed to increase fish stocks, thus increasing the availability of food to parents and chicks and less disturbance from fishermen. In contrast, nesting pairs at El Malaha have declined. In 1990, 5,688 nests were counted, while in the current survey only 1,350 nests were counted. During the breeding season, Slender–Billed Gulls in Egypt face disturbance from fishermen walking close to nests at El Qarn island, and from people collecting eggs and chicks at El Malaha. One simple strategy to minimize such disturbance is to place signs during the breeding season forbidding fishermen from entering the breeding colonies. These two colonies need urgent protection from further development. Further research is also needed to identify all the causes of decline of the breeding population at El Malaha.



## POSTER: Observations of Saunders's Tern breeding at Ras Sudr, Egypt, 2014

Mohamed HABIB[1]

[1]Red Sea Association , Environment committee coordinator, mrhydro35@hotmail.com

Saunders's Tern *Sternula saundersi* was discovered in the region of the northern Red Sea, south of the town of Ras Sudr (200 km from the Mediterranean). After discovery the colony was confirmed by a visit from the Egyptian Ornithological Rarities Committee in July 2013 and the colony received official approval in January 2014. Our 2014 survey began on 7$^{th}$ June and ended on 23$^{rd}$ August. The aim was to study the breeding ecology of the birds, and to propose recommendations for the protection of its nesting areas to the Egyptian Environmental Affairs Agency (EEAA). The study area comprised two colonies located on a sandbar on the Red Sea coast south of Ras Sudr (29.448°N, 32.730°E) in the western part of South Sinai Governorate. The sandbar is more than 5 km long and 150 meters wide, with big lagoons to the south and north. Most of the observations of the birds' behaviour and counts were made using a telescope from vantage points that allowed us to keep away as much as possible to prevent any disturbance to the newly discovered colonies. On the 23rd of August all the Saunders Terns were noted roosting at the biggest lagoon, on the northern end of the sandbar. 130 individuals, both adults and fledglings were counted. Some fledglings were still being fed by the parents, in the air and on the ground, while some others were joining their parents in fishing. During the fifth count, which took place in July, 40 breeding pairs were counted, and at the end of the breeding season it was noted that 50 birds fledged successfully.

## Status of the European Storm Petrel *Hydrobates pelagicus melitensis* in Tunisia

Hannibal HAMROUNI

Association les Amis des Oiseaux, section Sousse - TUNISIA , hamrounihannibal@yahoo.fr

The status of the European Storm Petrel is insuffiently known in Tunisia. This discreet Procellariform occurs mainly at sea and only comes land to breed. Its regular occurrence during the breeding season close to rocky islands such as the Galite, Zembra and Fratelli archipelagos may indicate it's breeding there. After the breeding season the Storm Petrel can be observed in coastal waters between the northern coasts of the country and the Gulf of Hammamet – Mahdia. It may breed on the Ilot des Chiens as well as at Fochelle islet. The playback method has been used to census Storm Petrels from an offshore dinghy in the Galite archipelago and more particularly close to Ilots des Chiens. Storm Petrels responded to the registered calls emitted. During Winter, the species is hardly observed from the shorefront. However from March onward the Storm Petrel becomes more visible. Part of the population present at Galite archipelago overwinters close to the islands. Others disperse to other parts of the Mediterranean.

## Impact of a wind farm on bird migration in the East Tangier (Morocco): New approach using RADAR / IPA

Houda HADI[1], Lamia Laamrani[1] & Hamid Rguibi Idrissi[1]

[1]Equipe de Recherche : «Valorisation des Ressources Naturelles et Biodiversité », University Chouaib Doukkali, Faculty of Sciences, El Jadida, Morocco, hhouda.doc@gmail.com

First research on birds interactions with wind farms began in the late 1960s. The impacts of wind farms on birds are generally divided into two categories: direct impacts, due to collisions between birds in flight and the rotor blades, and indirect impacts, which correspond to disturbances caused by the presence of wind farms. The radar images provide quality information on bird migration routes, and could improve traditional knowledge on bird migration patterns between Europe and Africa. Taking advantage of a project to install a wind farm in Tangier (165 wind turbines from 850 KW each, total power of 140MW and an annual deliverability of 510 GWH), we studied for the first time in Morocco the strategies of fall migration of birds, using a coupled approach RADAR / IPA and local weather data. In total, 838 hours of visual observations (from 16.08 to 01.11) and 23,335 images recorded by radar (from 12.08 to 01.11) were compiled. The recordings from radar RAYMARINE RL80C PLUS show an intense post-nuptial migration. The migration to the south and southwest was widespread, with high intensity. Most birds fly to the North East in a direction parallel to the ridge or they went through the east side of project area. Overall, nocturnal migration was more intense than diurnal migration, but altitudes were also higher (50% of the birds flow below 550 m at night, and below 330 m during the day). The percentage of birds flying in the affected elevations by the wind farm (i.e. below 200 m), was concordingly higher during the day (34.6% of the echoes recorded) than at night (15.7%).
In fact, many factors come into play and explain the spatial and temporal distribution of migratory depending on the altitude and direction of flight.

## Effects of habitat features on the abundance of Greater Flamingo (*Phoenicopterus roseus*) wintering in the Gulf of Gabès, Tunisia

Foued HAMZA[1,2] & Slaheddine Selmi[1]

[1]Département des Sciences de la Vie, Faculté des Sciences de Gabès, Université de Gabès, Zrig 6072, Gabès – Tunisia, Fouedhamza2010@gmail.com

The Gulf of Gabès, in south-eastern Tunisia, is one of the most important Mediterranean wintering areas for the Greater Flamingo *(Phoenicopterus roseus)*. However, information on the ecological factors shaping the distribution of this species in this wintering area is lacking. During the winter of 2012-2013, repeated counts of flamingos were conducted in fifty sites in the central part of the Gulf of Gabès. Using capture-recapture-like approach, the collected data were used to investigate the relationships between habitat parameters and flamingo abundance while accounting for factors affecting detection probability. The results show that the abundance of flamingos was positively related to habitat features. The abundance of this species increased in the sectors characterized by large mudflats intersected by large numbers of tidal channels, an important cover of seagrass and high amounts of mud and organic materials in the sediment. Further investigations of habitat use are nonetheless needed to understand deeply the wintering ecology of this species in this particular wintering area, as well as for conservation purposes.

## Chick diet composition of Lesser Crested Tern (*Thalasseus bengalensis*) at their Mediterranean breeding sites in Libya

Abdulmaula HAMZA[1] Mike Elliot[2], Nick Cutts[2], Jaber Yahia[3] & Khaled Elshomani[3]



[1] School of Marine Science and Environment, University Malaysia Terengganu, 21030 Kuala Terengganu, Malaysia, a.hamza@umt.edu.my, abdhamza@gmail.com
[2] Institute of Estuarine and Coastal Studies, University of Hull, Cottingham Road, HU6 7RX, Hull, UK.
[3] Nature Conservation Department, Environment General Authority, Libya

The chick diet of the Mediterranean population of Lesser Crested Tern *Thalasseus bengalensis emigratus* was investigated in 2008-2010 and 2012 at three breeding sites on the Libyan coast, Garah Island, Julyanah islet and Al Ulbah Island. Over 2,400 pairs of Lesser Crested Tern breed every summer. The main objectives were to document prey species delivered to chick, and inter-site differences in diet structure in terms of prey species diversity and biomass. Regurgitated prey samples with prey specimens left at colony sites were included in the present study. Samples were collected by hand during field visits to colonies (prey specimens discarded on the ground) and during the ringing of chicks, when they regurgitate recent food intake. A total of 422 diet samples belonging to 18 families of fish and one family of cephalopods were collected during the study period. Adult Terns fed their chicks with different prey species at each site, indicating an adaptation in foraging yield at waters near the respective colony. Index of Relative Importance (IRI) have been used to identify the most important prey species based on both prey frequency and biomass. Results showed that the most important prey species at Gara were Round Sardine *Sardinella aurita* Mediterranean Flying fish *Cheilopogon heterurus* and the Half Beak *Hemiramphus far*. At the Al Ulbah colony the main prey species were Mediterranean Flying fish *Cheilopogon heterurus*, Half beak *Hemiramphus far* and Mediterranean Amberjack *Seriola dumerilli*, while at Julyanah colony, the main prey species were Striped Seabream *Lithognathus mormyrus*, Grey Blenny *Lipophrys trigloides* and Bogue *Boops boops*. Prey size increased with progress of chick growth indicating active selection of prey size with the increasing energetic requirements of growing chicks. The discussion also include the relationship between spring increase of sea surface water temperature SST in Cyrenaica, and the initiation of fish spawning for several of the above species, which in turn coincide with the arrival of the first breeding terns at both Julyanah and Al Ulbah, which arrive earlier than those at Garah island.

## Habitat restoration and breeding density of breeding Lesser crested tern *Thalasseus bengalensis* at Jeliana colony, Libya

Abdulmula HAMZA[1, 2], Khaled Etayeb[3], Jaber Yahia[4], Khaled Shumany, Hafiz Elgnaien[5] & Mike Elliott[2]

[1] Environment General Authority, Libya, Current: University Malaysia Terengganu, Kuala Terengganu, Malaysia
[2] IECS, University of Hull, UK, a.hamza@umt.edu.my, abdhamza@gmail.com
[3] University of Tripoli, Zoology Department, Tripoli, Libya
[4] University of Omar Almokhtar, Zoology Department, Bayda, Libya
[5] Environment General Authority, Benghazi, Libya

Habitat loss is one of the current threats to many Mediterranean seabird populations. Increasing the surface area of islets is one of the methods to restore the breeding population to its maximum size, depending on the space available of the newly established habitat, and when other limiting factors such as food, are maintained. The Mediterranean breeding population of Lesser Crested Tern is confined to three sites in Libya, two offshore and one inshore site on Jeliana islet, which is a low-lying clayey sandbank, ca 12m$^2$ in size, formed within Benghazi Lake, and exposed to flood by excess water pumped from nearby 23 July Lake. Habitat restoration work to increase its height and surface area was carried out by using sand and gravel bags. Research showed that the islet was overcrowded during the breeding season, resulting in high competition for nesting spots. In March 2012, the restoration work increased the surface area up to 176m$^2$. Subsequently, colony size increased up to threefold in June 2012 and the whole restored islet held 402 nests. In addition, a further 390 pairs nested on a newly larger islet, created in 2010. The lake was flooded in spring 2012 by precipitation resulting in further shaping the newly formed Islet. However, the extension of the breeding area was eventually utilized by competing breeding terns, and established possibly the largest breeding population at this site.

## POSTER: Insights on Population Genetics of Mediterranean breeding Lesser Crested Tern in comparison to the Red Sea and Persian Gulf breeding populations



Abdulmaula HAMZA[1], Lori Lawson Handley[2], Mike Elliott[2], Hichem Azafzaf[3], Jaber Yahia[4] and Wed Abdelatif [5] & Brendan Kavanagh [6]

[1]School of Marine Science and Environment, University Malaysia Terengganu, 21030, Kuala Terengganu, Malaysia a.hamza@umt.edu.my
[2] School of Biological sciences, University of Hull, HU6 7RX Hull, UK.
[3] Association "Les Amis des Oiseaux" (AAO) – Ariana, Tunis[4] University of Omar Al-mokhtar, Bayda, Libya
[5] Egyptian Protected Areas Sector, Maadi, Cairo, Egypt.[6] Brendan Kavanagh, RCSI Medical University of Bahrain, Manama, Bahrain.

The population genetics of Lesser Crested Tern Mediterranean breeding subspecies have been investigated using two mitochondrial DNA molecular markers (Cyt b and ND2). DNA samples (feather, tissues) were collected from breeding populations in Libya (n=53), Egyptian Red Sea (Ashrafi Islands (n=6) and the Persian Gulf, Island of Jraid, Bahrain (n= 28). Results showed significant genetic differentiation among the three sampled populations. Novel haplotypes have been identified for each population, for Cyt b locus (Gara= 3, Jeliana= 2, Elba= 9, Red Sea= 4 and Persian Gulf=13), while for ND2 locus (Gara= 4, Jeliana= 1, Elba= 5, Red Sea= 2 and Persian Gulf= 8). Haplotype diversity (H) for Cyt b ranged from 0.19 ±0.11 in Gara population to 0.81 ±0.07 at the Persian Gulf population, whilst for ND2, it ranged between 0.27 ±0.11 at Gara to 0.64 ±0.10 at Elba. Small sample size from the Egyptian Red Sea and Jeliana may underestimate their haplotype diversity. Minimum spanning networks of haplotypes were constructed, results showed that for Cyt b, H-a was the most shard among all populations, while in ND2, dominant haplotype was H-2 followed by H-1. Results from Analysis of Molecular Variance (AMOVA) indicated significant genetic structure for Cyt b ($F_{ST}$, Cyt b =0.103 $P < 0.05$); but not for ND2 ($F_{ST}$, ND2 = 0.017, $P > 0.05$). The present three subspecies classification of lesser crested tern is found to be valid, making the Mediterranean breeding population a special conservation unit, given its relatively small population size and the limited breeding range.

## THE PLANNING PROCESS OF NATURA 2000 FOR THE SEA BIRDS IN THE BALEARIC ISLANDS

Neus LLITERAS[1], Magdalena Carbonell[2] & Joan Mayol[3]

[1] General director of nature conservation, climate change & environmental education. Balearics I. Government
[2] Planning nature areas service. Balearics I. Government
[3] Species Protection Service. Balearic Islands Goverment.

In the surrounding coastal area of the Balearic Isles there are 137 NATURA 2000 sites. These represent 115.015 ha. of land (23% of the total land surface of the isles) and 107.409 ha. of marine areas. All seabird colonies fall within the NATURA 2000 sites, and the most important ones are managed as national parks, natural parks or natural reserves. This represents an important change since the first Medmaravis Conference, when not even one square meter of land was protected. In the last year, a major planning effort in the management of the NATURA 2000 sites has been made. 25 different management plans were drafted (grouping areas of similar features) after a public participation process, including all stake holders – government agencies, privates entities and individual people, through workshops, meetings, press conferences and social media. Three informative symposia and 24 participative workshops were organized and some 1,500 written suggestions were contributed in the participation process. The results of the task and particularly the actions set out on the action plans which will improve the protection of sea birds are presented. It is considered that proper coordination of the specific management plans of natural areas is the key to the future of the Balearics Mediterranean heritage.



## Marine and coastal birds of the Aeolian Archipelago (Sicily): present knowledge and conservation status

Pietro LO CASCIO[1]

[1]Associazione Nesos, via Vittorio Emanuele 24, 98055 Lipari (Italy), plocascio@nesos.org

The Aeolian Archipelago lies in southern Tyrrhenian Sea and includes seven islands and several islets. It is listed among the European IBAs and has been designed as SPA (ZPS ITA030044). Recent investigations on the bird fauna, available elsewhere, confirmed the breeding occurrence of 44 bird species, among which 4 are included in the Annex 1 of the 147/2009 EU Directive that inhabit coastal and marine environments: *Calonectris diomedea*, *Puffinus yelkouan*, *Hydrobates pelagicus*, and *Falco eleonorae*. The archipelago plays a significant role in the geographical framework of the southern Tyrrhenian because it harbours the only breeding sites known for the three latter species. Small colonies of *Calonectris diomedea*, holding an estimated total of >100 pairs, are found on 4 islands. *Puffinus yelkouan* breeds only at Salina island, where an unknown number of pairs (probably less than 10) are nesting in a small area. However, its occurrence has been recorded at the same site since the 1940s and therefore seems relatively stable. *Hydrobates pelagicus* was recorded in the late 19th century and has been confirmed since 1993. The largest population was found in June 2014 on a tiny islet. The population of this species in the archipelago is estimated at <20 pairs. *Falco eleonorae* occurs on 4 islands and 1 islet with a population of about 110-160 pairs. Disparity in the number of breeding pairs during the last 15 years of some of these colonies have been noted. Reproductive failures (observed for *Hydrobates pelagicus*) and numerical fluctuations (in some colonies of *Falco eleonorae*) seem to occur due to the human disturbance, which becomes particularly intense in the summer season as a consequence of massive nautical tourism in the proximities of the breeding sites.

## New population assessment and variation in breeding parameters of Mogador Island colony of Eleonora´s Falcon, *Falco eleonorae*

Meryem MALKI[1], Adnane Habib[2], Houda Hadi[1], Arizaga Juan[3] & Hamid Rguibi Idrissi[1]

[1] Equipe de Recherche « Valorisation des Ressources Naturelles et Biodiversité », University Chouaib Doukkali, Faculty of Sciences, BP 20, El Jadida, Morocco meryem.malki@gmail.com
[2]LGMSS – URAC45, University Chouaib Doukkali, Faculty of Sciences, BP 20, El Jadida, Morocco
[3]Urdaibai Bird Center, Aranzadi Society of Sciences, Orueta 7, E-48314 Gautegiz- Arteaga, Bizkaia, Spain.

Eleonora´s Falcon, *Falco eleonorae* has been identified as “Rare for Europe” species and its decline is related to habitat loss. Morocco appears to receive number of birds of this species in breeding season. The aim of this study was to provide a reliable estimate of current population size of Eleonora’s Falcon in Morocco according to distance-sampling technique. Counts were made using suitable sampling design with topographical maps produced on which ca. 20 m-long count sectors were delineated in the Mogador islands. The estimation of the survey population of *Falco eleonorae* breeding was calculated throughout the entire Mogador island, except the some steepest cliffs along 102 line-transects according to the distance-sampling methodology. This census was the first of its kind and part of a global population survey in Morocco and the population size at certain colonies was significantly underestimated in 1996 and 2014. Our results indicated a new breeding population possibly holds up to 30% of the species global breeding population. We gathered data for a two-year period (2013–2014) on the nesting ecology and reproductive performance of Eleonora’s falcon in the Mogador Islands. We investigated in an indirect way the relation between clutch size and pre-laying food availability, the significance of site and pair quality on productivity, and the effects of habitat and intraspecific competition on breeding success. Breeding parameters varied significantly between the years, exhibiting a strong spatial yet local effect. The results of this survey provided guideline for reviewing the conservation status of Eleonora’s Falcon in Morocco and also help to set an effective national conservation plan for future population monitoring.



## STATUS EVOLUTION OF THE SEABIRDS OF THE BALEARIC ISLES

Joan MAYOL[1], Jordi Mas Muntaner[1] & Rafel Mas[1]

[1]Species Protection Service, Government of the Balearic Islands, jmayol@dgcapea.caib.es

The evolution of the status of breeding seabirds in the Balearics during the last three decades is presented. *Hydrobates pelagicus* – Knowledge of location of colonies has improved, but accurate counts are not possible. It is considered to be more effective to monitor the birds at colonies, such as at S'Espartar (Ibiza), with precise monitoring. The ringing of more than 13,000 birds produced only 47 recoveries. *Calonectris diomedea* – Only some colonies are monitored and their breeding populations are deemed to be stable. Incidental captures are important in March. *Puffinus mauretanicus* – Numbers of birds seen off the Mediterranean coast and Gibraltar indicate that there must be unknown colonies. Rat control on islands and islets has been quite successful, particularly their eradication at Dragonera. *Phalacrocorax aristotelis* – The breeding populations of Ibiza and Formentera are increasing, while those of Mallorca and Menorca are rather stable. An action plan for the protection of the species is being implemented. *Larus audouinii* – The colonies of the Balearics are decreasing, probably as a result of birds moving to the expanding Iberian colonies. The decrease in trawling activities seems to be the main reason. *Larus cachinans* – Control of the population and the improvement in urban waste management has contributed to changes in the invasive trends of the species. A summary of the data on the species numbers and movements is being presented.

## Far beyond the horizon – modern tracking techniques as a tool to identify marine IBAs for Maltese seabirds

Ben METZGER[1], John J. Borg[1], Nicholas Barbara[1] & Joe Sultana[1]

[1]BirdLife Malta, 57/28 Triq Abate Rigord Street, Ta Xbiex XBX1120, Malta, benjamin.metzger@birdlifemalta.org

To provide their chicks with high quality food, tubenose seabird species often make use of foraging grounds far away from their nest sites. Outside the breeding season, these birds carry out even larger movements to sea areas of high productivity. Seabird conservation in the past largely focused on the terrestrial breeding grounds, leaving important aspects of their life at sea in the dark. In recent years, tracking devices have improved in size, weight and performance, helping to shed light on the birds' movements and whereabouts. This is crucial to identify important areas at sea which are used during different stages of their lifecycle. In recent years, BirdLife Malta has equipped Yelkouan Shearwaters *Puffinus yelkouan*, Scopoli's Shearwaters *Calonectris diomedea* and Mediterranean Storm-petrels *Hydrobates pelagicus melitensis*, breeding in the Maltese Archipelago, with various tracking devices. During several breeding seasons, the movements of birds from different colonies were tracked with geolocators, gps-loggers and radio-transmitters, respectively. Here we present some results of these tracking studies, and discuss the potential and weaknesses of the different technologies in the identification of marine IBAs for better protection of Mediterranean seabirds.

## Scale-dependent approaches applied to the conservation biogeography of a cosmopolitan raptor: the Osprey

Flavio MONTI[1,2]

[1] Centre d'Ecologie Fonctionnelle et Evolutive (CNRS UMR5175), Université Montpellier 2, Biogeography and Ecology of Vertebrates, 1919 Route de Mende, 34293 Montpellier cedex 5, France, flavio.monti@cefe-cnrs.fr
[2] Department of Life Sciences and Biotechnology, University of Ferrara, via Borsari 46, I-44121 Ferrara, Italy.



The Mediterranean Sea represents one of the most exploited marine environments, where intense commercial and touristic activities produce continuous disturbances that are affecting the biological diversity at different levels. In the Mediterranean region, the presence of osprey *Pandion haliaetus* is limited to a few breeding nuclei and is jeopardised by habitat fragmentation and human threats which warrant specific management actions. However, appropriate management and conservation measures, at the right scale, necessitate a preliminary understanding of the proximate causes of geographical distribution, genetic divergence, population connectivity, migratory strategies and foraging ecology of animal populations. Accordingly, a multi-scale integrated approach has been adopted for the osprey, through an interdisciplinary framework including molecular ecology, trophic ecology as assessed via stable isotopic analyses, spatial ecology through the use of novel biotelemetry tools, as well as population dynamics, fish censuses and assessments of levels of human disturbance. The existence of four different lineages at global scale that should be treated as Evolutionary Significant Units (ESUs), and deserving specific management has been demonstrated. Population connectivity in the Western Palearctic has been revealed. Migratory behaviour and winter ecology of Mediterranean ospreys have been unravelled and compared with those of northern European populations, in an evolutionary context. The need of adequate management measures to be adopted for three local populations of the Mediterranean basin (Corsica, Morocco and Italy) has been emphasised. Overall, this work has led to some important advances with respect to the conservation biogeography of ospreys at different levels. These insights are particularly valuable with respect to effective management of this symbolic species.

## POSTER: Preliminary data on breeding population of *Calonectris diomedea* and *Puffinus yelkouan* in "Capo Carbonara" Marine Protected Area (south-east Sardinia)

Sergio NISSARDI[1], Carla Zucca[1] & Fabio Cherchi[2]

[1]Anthus s.n.c. - Via Luigi Canepa 22 – 09129 Cagliari, anthus@anthus.info
[2]Fabio Cherchi - Via delle Rondini 6 - 09126 Cagliari, cherchi.fa@gmail.com

Reproductive parameters of Scopoli's Shearwater *Calonectris diomedea* and Yelkouan Shearwater *Puffinus yelkouan* obtained in 2013 at AMP Capo Carbonara (south-east Sardinia) are presented. The data were collected as part of monitoring habitats and species within the framework of the Habitats and Birds Directives, at Marine SCI ITB040020 "Isola dei Cavoli, Serpentara, Punta Molentis, Campulongu", in Capo Carbonara Marine Protected Area. The study was carried out using the following methods: listening to calls (mainly on moonless nights) and locating nests. Burrows with signs of occupancy - bird droppings, bird tracks and footprints, birds' odour, pieces of eggshells, etc. - were counted and inspected by an endoscope. These two species are present on the main two islands Cavoli and Serpentara and in Variglione Sud near Serpentara Isle.

## Seabirds of the National Park of Zembra (Tunisia): census, spatial distribution and breeding monitoring.

Ridha OUNI[1], Anis Zarrouk [2] & Mathieu Thevenet[3]

[1] Tunisian WildLife Conservation Society, elanion2003@yahoo.fr
[2] Agence pour la Protection et l'Aménagement du Littoral
[3] Conservatoire du littoral



The breeding of seabirds in Zembra archipelago is confirmed for five species of the six reported: *Calonectris diomedea* with currently around 140 000 breeding pairs (Defos du Rau et al. in press); *Puffinus yelkouan* with 210 pairs, *Phalacrocorax aristotelis* (20 pairs), *Larus audouinii*, 30-60 pairs and *Larus michahellis* is present all over the island with about 1500 breeding pairs. Individuals of *Hydrobates pelagicus* are regularly observed during the breeding period of the species but nesting has never been confirmed. In this presentation we propose to outline for each one of these species the spatial distribution, result of nest census, the impact of invasive species and human activities and the results of the rat eradication in 2009 on the small islet of Zembretta. Therefore, we will present the need of annual breeding monitoring (which has been carried out since 2007), the telemetry study (initiated in 2012 and 2013) which identifies the foraging areas of Scopoli's Shearwater, and how seabird conservation in this area can benefit from these projects.

## Does the population of Eleonora's Falcon population in Essaouira, Morocco show signs of decline due to a saturation of nesting sites?

Abdeljebbar QNINBA[1] & Abdelaziz Benhoussa[2]

[1] Université Mohammed V de Rabat, Institut Scientifique, Département de Zoologie et Ecologie Animale, Avenue Ibn Battouta, Agdal, Rabat, Maroc, qninba@israbat.ac.ma
[2] Université Mohammed V de Rabat, Faculté des Sciences, Laboratoire de Biologie Animale et de Zoologie, Avenue Ibn Battouta, Agdal, Rabat, Maroc.

Eleonora's Falcon *Falco eleonorae* is considered as a typical Mediterranean species. However, three colonies of this species are present in the Atlantic: one in the Canaries archipelago, and two along the Atlantic coast of Morocco – in Salé and in Essaouira archipelago. The Essouira's colony, which was probably established after the 17th century, was in the past strongly persecuted by direct poaching and disturbance by fishermen and seaweed or *Pollipes pollipes* collecting. However, since the 1980's, when the site was declared a reserve, the breeding population started to increase. In 2010, the French *Conservatoire du littoral*, in collaboration with the Moroccan *Haut Commissariat aux Eaux et Forêts et à Lutte Contre la Désertification*, launched a monitoring program of the Essaouira

population, as part of the Mediterranean Small Island Initiative (PIM). Census results, carried out in the last two years, showed an increase of the population size. However, breeding success is slightly decreasing. This phenomenon could be due to a saturation of nesting sites used by the falcon. Indeed, a high density of nest is observed within the most favourable breeding areas of the archipelago. The species has recently starting using the fissures of the archeological remains present on the main islands. As far as we know, the utilization of this kind of substratum for nesting has never been reported in the literature.

## Phenological and Conservation Status of Marine birds in Lebanon

Ghassan RAMADAN-JARADI[1]

[1]Society for Protection of Nature in Lebanon (SPNL) Professor Emeritus/ Ornithology, Awad Bldg - 6th Floor - Abdel Aziz Street, P.O.Box: 11-5665; Beirut - Lebanon Tel/Fax:+961 1 343 740 /+961 1 748308/9, grjaradi@hotmail.com

In the last 22 years, a drastic decline of coastal bird species has also been noted in Lebanon, mainly due to habitat loss, as well as to ingestion of pollutants which flow into the sea from sewers of human high density areas (Ramadan-Jaradi, unpubl.). Our knowledge of the marine bird species is limited as little information is gathered due to technological and logistic difficulties associated with obtaining distribution data of bird species at sea. Furthermore, only very few coastal areas are still used by sea birds and waders whereas the main source of information is limited to Naqoura wild rocky and sandy shore areas – Bayyada sandy shore, Tyre Coast Nature Reserve, Sheikh Zennad salt pans and Palm Islands Nature Reserve. The latter is an Important Bird Area (IBA), Specially Protected Area (SPA) of Mediterranean importance and a Ramsar Site. Being 6 km offshore, Palm Islands bird-watching tower offer a huge opportunity to ornithologists to study both coastal and marine bird species. Recent records of endangered or threatened birds that are listed in Annex II of the Protocol concerning Specially Protected Areas (SPAs) and Biological Diversity in the Mediterranean are given for Scopoli's Shearwater *Calonectris diomedea*, Yelkouan Shearwater *Puffinus yelkouan*, European Storm-petrel *Hydrobates pelagicus*, Pygmy Cormorant Phalacrocorax pygmeus, White Pelican *Pelecanus onocrotalus*, Dalmatian Pelican *Pelecanus crispus*, Greater Flamingo *Phoenicopterus roseus*, Osprey *Pandion haliaetus*, Eleonora's Falcon *Falco eleonorae*, Audouin's Gull *Larus audouinii*, Lesser Crested Tern *Sterna bengalensis*, Sandwich Tern *Sterna sandvicensis*, and Little Tern *Sternula albifrons*. The European Shag *Phalacrocorax aristotelis* and the Slender-billed Curlew *Numenius tenuirostris* of this Annex II have never been recorded in Lebanon. Measures for protection of these species are enforced on PINR and Tyre Coast Reserves but not elsewhere in the country.



## POSTER: And after crossing Sahara, and before crossing Mediterranean, what? Answers from a tiny wetland in N Africa

Hamid RGUIBI IDRISSI[1]

[1]University Chouaib Doukkali, Faculty of Sciences, Equipe de Recherche « Valorisation des Ressources Naturelles et Biodiversité, Al Jadida, Morocco, hrguibi@hotmail.com

Every spring long-distance Palearctic migrants return to Europe from their sub-Saharan wintering grounds after having crossed two large geographical barriers in succession – the Sahara desert and the Mediterranean sea. This journey is particularly demanding at this time of year because birds need to reach their breeding grounds as soon as possible to establish territories and find mates. The results of 16 years of the Piccole Isole project presents the main findings of a network of ringing stations that were in operation between 1992-2007 in Spain and Morocco. This network provided the first opportunity to study spring bird migration concurrently right across the Mediterranean basin. Migrating birds were studied both in their areas of origin (NW Africa) and also in the areas where they stopped, either during the sea crossing (Mediterranean islands) or while following less energetically demanding continental routes (coastal Spain). In 10 out of the 11 species analysed in N Africa, fuel deposition rates were positive, and six cases significantly so. Of those species with significant refuelling rates, daily dispositions represented 1.4-3.0% of lean body mass (mean 2.3%), which, taking into account average minimum stopover lengths, gives average mass gains of c. 10.1% of lean body mass.

Sample sizes of retraps were usually small and limited to a few species. However, the comparison of mean body mass in S and N Morocco indicates that mass gain in NW Africa is rather generalized in the studied species. Across species, the average body mass recorded in northern coastal areas of NW Africa (Morocoo and Tunisa) were 12.2% higher than that obtained in SE Morocco (11.6% higher if data from Tunisia are excluded). This work indicates that after winter rains NW Africa plays a relevant refuelling role for many birds. The possibility of refuelling in NW Africa and the key finding of these analyses (i.e. that the distribution of preferred habitats just south of the Sahara is the main factor constraining spring migration) are not necessarily contradictory.

## Manual for Seabirds Monitoring for the Mediterranean Common Indicators

Francisco J. ROMERO LOPEZ[1]

[1]La Matilla 5, 41907 Valencina (Sevilla), Spain, HYPERLINK, fromerox@gmail.com

This manual proposes different methods from seabird surveys for reliable and comparable estimates of population size to establish trend information. It includes pragmatic advices, specific methodologies, tools and approaches for parameter collection, indicator calculation and interpretation, to support a monitoring programme.

## Are there more yelkouan shearwaters than we thought?

Dilek ŞAHIN[1]

[1]Bogazici University, Institute of Environmental Sciences, 34342 Bebek/Istanbul, dileksahin88@gmail.com

Yelkouan Shearwater *Puffinus yelkouan* is one of the least known endemic species in the Mediterranean Basin. Its breeding behaviour hinders to make precise population estimation from breeding colonies. Land-based counts data from the Bosphorus reveal that remarkable numbers of Yelkouan Shearwaters are passing along the site just before the egg-laying period. 90 000 birds were counted in four hours. This total matches well the global population estimates. Continuous passage after four hours draws attention to reconsider the estimates derived from breeding colonies and gives rise to a discussion on how accurate these estimates are, and to seek if there are any possibilities to estimate more precisely land-based counts. The aim of this paper is to emphasize the value of the Bosphorus in monitoring Yelkouan shearwaters and to appeal for standardized land-based counts during the February passage of the species in order to support global population estimates.



## Seabirds of Montenegro

Darko SAVELJIC[1]

[1] Centre for Protection and Research of Birds, Podgorica, Montenegro, darkosaveljic@gmail.com

Thirteen species out of those listed in the Annex II of the Protocol concerning SPAs occur in Montenegro and two symposia treating conservation of marine and coastal birds were held in Montenegro between in 2005 and 2014, respectively. In the period between the two symposia, there has had been a significant change in status and numbers of some species as follows. Pygmy Cormorant *Phalacrocorax pygmeus* increased from 2500 breeding pairs in 2005 to 3500 pairs in 2014. Due to the successful implementation of the Action Plan and the setting up floating rafts at Skadar Lake, Dalmatian Pelican *Pelecanus crispus* bred successfully and increased dramatically from 11 pairs in 2005 to 39 pairs in 2014. White Pelican *Pelecanus onocrotalus*, which was previously the rarest wintering bird species in Montenegro is now observed at Skadar Lake annually during winter. From a maximum of six individual Flamingos *Phoenicopterus roseus* wintering at Ulcinj Salina in 2004, more than 350 pairs were breeding in 2013. Presently a minimum of 2000 individuals can be seen every day at the Salina and their number is constantly increasing. Coloured ringed birds show that some hail from Izmir in Turkey, Ravenna and Ferrara in Italy, and the Camargue in France. The numbers of White-winged Black Tern *Chlidonias leucopterus* remained the same from 2005 to 2014,

and Audouin's Gull *Larus audouinii* has occurred at Tivat Salina in August 2014. The Slender-billed Curlew *Numenius tenuirostris* may have also occurred at Ulcinj Salina in 2009. The only negative result during the period was the decrease in the breeding of Eleonora's Falcon *Falco eleonorae* on the island opposite Budva.

## Fifty years of seabird research and conservation in the Maltese Islands: are we getting there?

Joe SULTANA[1], John J. Borg[1], Nicholas Barbara[1] & Ben Metzger[1]

[1]BirdLife Malta, 57/28 Triq Abate Rigord Street, Ta Xbiex XBX1120, Malta, joesultana@maltanet.net

Seabird research and conservation were initiated in Malta by the Malta Ornithological Society in 1962. At that time, the seabirds breeding in the Maltese Islands, were not afforded any form of legal protection. Shooting excursions for Scopoli's Shearwater *Calonectris diomedea* at sea was one of the pastimes of the shooting fraternity. The important breeding sites of seabirds, such as Filfla, were not even protected. Filfla was frequently used as a bombing target by the British forces. Furthermore the status and breeding biology of these seabird species in the islands were practically unknown and no research on these species had been ever carried out. MOS ringers started visiting Filfla in 1968, to assess and monitor the breeding seabirds' population. MOS lobbied persistently against the use of Filfla for bombing practices. In 1970 the Society published Bird Studies on Filfla and the practice was finally stopped. Eventually Filfla and Fungus Rock were declared strict nature reserves and Ta' Ċenċ was declared a bird sanctuary. Seabirds became legally protected in 1980. In 1969 the largest Yelkouan Shearwater *Puffinus yelkouan* colony was discovered at L-Irdum tal-Madonna. Since then other colonies of both shearwaters and Storm-petrel *Hydrobates pelagicus melitensis* were discovered and their breeding biology has been studied along the years. All the colonies are now included within the EU Natura Sites. Studies were intensified since 2006 with two EU LIFE projects. The aim of the first four-year EU LIFE project (2006-2010) was to reverse the population decline of the Yelkouan Shearwater; the aim of the second five-year project (2011-2015) is to identify Marine Important Bird Areas around the Maltese islands. Studies included boat-based observations, deployment of GPS loggers on a number of Yelkouan and Scopoli's shearwaters, and fixing tiny radio tags on Storm-petrels. Summary of these studies is presented. In spite of what has been carried out so far we are not there yet. There are still many gaps to fill in the conservation and research of seabirds. Lack of proper law enforcement; human disturbance, infestation of rats and the dearth of human and financial resources are some of the prevailing problems.



## Study of the Scopoli's Shearwater *Calonectris diomedea* (Procellariidae, Aves) at the Rachgoun Island (Beni Saf, Algeria)

Ahmed TAIBI[1], Boussad Oubaziz[2] and Mohamed Ghermaoui[2]

[1]Department of Agronomy, Faculty of SNV/STU, Aboubekr Belkaid University of Tlemcen, Tlemcen, Algeria,E_coli1982@yahoo.fr
[2]Department of Animal Ecology, Faculty of SNV/STU, Aboubekr Belkaid University of Tlemcen, Tlemcen, Algeria,

Rachgoun Island, with an area of more than 26 hectares, is one of the largest islands in Algeria. It holds one of the largest colonies of Scopoli's Shearwater *Calonectris diomedea* in Algeria. A stay of four days (21 to 25 June 2013) followed by several periodic visits were organized on the island with the aim to study the reproduction and distribution of this species. The reproductive success is high because of the absence of the rats on the island. 30 single-egg nest sites were studied. The nests are dug in the ground with an average opening of 26.9 cm and up to 95.3 cm deep. The egg is deposited at an average of 67.3 cm from the opening. Nest sites are situated at a distance of 26.1 m from the sea and at an altitude of 20.9 m. The chalky white eggs were measured, the longest being 67 mm and the widest 46.3 mm. The average volume and weight of eggs are 68.58 cm3 and 62.2 g respectively.

## The ecology of an important coastal breeding species in the Mediterranean the Common Shelduck *Tadorna tadorna*

John G. WALMSLEY[1]

[1]17 Chemin de l'Eglise, Le Sambuc, 13200 Arles, France, jgwalmsley@sfr.fr

Early reports of breeding Shelduck *Tadorna tadorna* in the Mediterranean region date back to the 19th century, a period when Shelduck populations throughout Europe were persecuted for their feathers and skins for the fashion trade. Full protection for the species began in the 1930s in Germany and Denmark, and in 1962 in France. The West Mediterranean breeding population has since recovered and extended its breeding range into Spain, Italy and North Africa, with affinities to both the Black Sea and the Northwest European populations. Throughout the latter half 19th and early 20th centuries the amalgamation of small artisanal Salinas gave way to the modern Salinas of today. The Shelduck and the Flamingo are just two of the many species that occur in this hyper-saline environment in the coastal Salinas, Salt Lakes, Reserves and river estuaries around the Mediterranean. The increase and maintenance of the bird populations in Salinas is due to the high productivity of the invertebrate fauna under stable conditions and the close cooperation between the salt companies and ecologists.

## Seabirds and the Marine Strategy Framework Directive: application in France

Pierre YESOU[1]

[1] Office national de la chasse et de la faune sauvage (ONCFS), Délégation interrégionale Bretagne et Pays de la Loire, 44300 Nantes, France, pierre.yesou@oncfs.gouv.fr

The presentation will focus on the ways the Directive is being implemented in France regarding seabirds: identification of main stakes, identification of threats related to human activites, articulation with other European Directives and international conventions.

Conception & Réalisation

IGD communiaction

**Regional Activity Centre for Specially Protected Areas (RAC/SPA)**
Boulevard du Leader Yasser Arafat - B.P. 337 - 1080 Tunis Cedex - TUNISIA
Tel. : +216 71 206 649 / 485 / 851 - Fax: +216 71 206 490
E-mail: car-asp@rac-spa.org
**www.rac-spa.org**

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Association "Les Amis des Oiseaux"

## ASSOCIATION "LES AMIS DES OISEAUX"

**Association "Les Amis des Oiseaux » (AAO) is a Tunisian NGO working for the study, monitoring and protection of bird populations in Tunisia. AAO carries out conservation programs for sedentary and migratory birds and their habitats through relevant projects and activities (information, awareness raising, advocacy, monitoring, capacity building, etc.).**
**Founded in 1975, AAO has actively integrated national, regional and international networks and programs aiming at the conservation of birds and their key sites. Thus, it is the official partner of BirdLife International in Tunisia, a member of IUCN and a founding member of the MedWaterbirds, MedWet North Africa, RANDET and TunWet networks.**

Ariana Center Bureau C208/209 - 2080 - Ariana - Tunisia
Phone/Fax : +216 71 717 860 - Mobile : +216 23 207 238 - E-mail : aao@topnet.tn - Facebook : www.facebook.com/AAO.tn

MED MARAVIS

## MEDMARAVIS

**Medmaravis is an international NGO dealing with the study and conservation of coastal habitats and marine avifauna throughout the Mediterranean region. Its main goal is to study, monitor, and protect coastal biotopes, with main focus on small islands, unspoilt coasts, and seacliffs which harbor breeding seabirds and other endemic or threatened species. Medmaravis, enjoying a network of marine biologists, ornitologists and conservationists, organizes a major seabird conference every three years. It's engaged in the compilation of a conservation strategy for the Mediterranean, propagating the importance of the seabirds' rôle in the ecosystem, and encouraging governments and local authorities to protect the last wild coastal ecosystems in the Mediterranean. Since late 2014, as an effect of a liaison with the Conservatoire-du-Littoral (CdL, France), Medmaravis is in charge for producing simple and reproducible protocols that will be applied across the Mediterranean, in order to harmonize the methods applied to monitor chemical and plastic contaminants throughout the Mediterranean coast.**

Medmaravis Secretariat in France: BP. 512 - F-83470 Saint Maximin, France.
Medmaravis Secretariat in Italy: 96, Via S. Satta - I-07041 Alghero (SS), Sardinia, Italy.
Contacts: medmaravis.info@gmail.com, fab.borghesi@gmail.com (Fabrizio Borghesi, Projects Officer).

Conservatoire du littoral

## CONSERVATOIRE DU LITTORAL

**The French Coastal Agency (Conservatoire du littoral) is public entity aimed at purchasing coastal territories in order to improve their preservation. This organization has cooperation activities focused on the Mediterranean since 20 years and coordinate the Mediterranean Small Initiative since 2005 to promote and support management actions on micro-insular territories. Seabird species are one of its main preoccupations, therefore conservations actions to marine avifauna has been carried out in the framework of the "Albatros" project to improve knowledge and struggle against threats affecting seabirds and their habitats. Another objective of the PIM initiative is structuring seabird conservationists network, and pooling monitoring and ringing data of seabird species.**

Conservatoire du Littoral Délégation Europe-International: 3 rue marcel Arnaud - 13100 Aix-en-Provence
Tel: +33 4 42 91 28 37 - E-mail: m.thevenet@conservatoire-du-littoral.fr

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Le Sambuc 13200 Arles France
Tel. : +33 (0)4 90 97 20 13 - Fax : +33 (0)4 90 97 20 19 - E-mail : secretariat@tourduvalat.org