



*Acting
Together
For Black Sea's
Birds*

BLACK SEA SEABIRDS PROJECT

LAYMAN'S REPORT



BLACK SEA SEABIRDS PROJECT



“Yelkouan Shearwater”
Ali Rıza Altınok / *Bosphorus*

The Black Sea Seabirds Project Layman's Report

“Preparing the basis for an inventory of Marine Important Bird Areas along the southern Black Sea Coast”
(Romania, Bulgaria and Turkey)

07.020400/2012/617393/SUB/D2

The Yelkouan Shearwater - Yelkovan Kuşu - *Puffinus yelkouan* (Acerbi, 1892) yelkouan, from Turkish yelkovan meaning ‘wind-chaser’. a local term for shearwaters, shearwater, referring to the bird's typical gliding flight above sea surface with tips shearing or cutting through water.



BLACK SEA SEABIRDS PROJECT

LAYMAN'S REPORT



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Doğa



ACKNOWLEDGEMENTS

We would like to express our gratitude to the many people who have made contributions to this report, and helped so much for completing the Black Sea Project with their efforts.

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Last, but certainly not least, we offer special thanks to our volunteers, academicians, government representatives, press members who participated in our meetings, trainings and contributed to the fieldwork of the Black Sea Seabirds Project.

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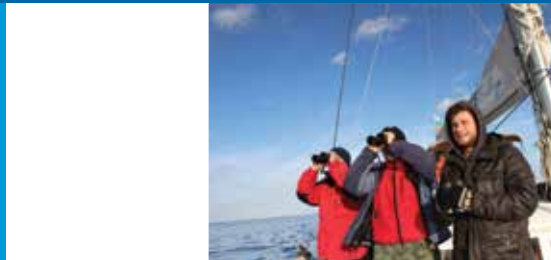


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(*Puffinus yelkouan*)

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(*Phalacrocorax aristotelis desmarestii*)





The Directorate-General for the Environment is one of the more than 40 Directorates-General and services that make up the European Commission. Commonly referred to as DG Environment, the objective of the Directorate-General is to protect, preserve and improve the environment for present and future generations. To achieve this it proposes policies that ensure a high level of environmental protection in the European Union and that preserve the quality of life of EU citizens.



Natura 2000 is an EU wide network of nature protection areas established in 1992. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) designated under the Birds Directive.

About The Project



THE BLACK SEA SEABIRDS LAYMAN'S REPORT



Overview

The Project « **Preparing the basis for an inventory of Marine Important Bird Areas along the southern Black Sea Coast** » is implemented by **Doğa Derneği** (DD) in collaboration with **Hellenic Ornithological Society** (HOS), **Bulgarian Society for the Protection of Birds** (BSPB) and **Romanian Ornithological Society** (SOR), in Southern Black Sea during the period from 16/04/2012 to 16/04/2014 with a total duration of 24 months. The Black Sea Seabirds Project aims to create the basis for an inventory of **Marine Important Bird Areas** (IBAs) for two seabird species: **Yelkouan Shearwater** (*Puffinus yelkouan*) and **Mediterranean Shag** (*Phalacrocorax aristotelis desmarestii*). The Black Sea Project also aims to train staff and volunteers from Romania, Bulgaria and Turkey on seabird research and conservation methods.

Throughout its two years of implementation (2012 – 2014), the Black Sea Project has focused on conservation work to eliminate threats, scientific research to discover unknown aspects about the life cycle of the Yelkouan Shearwater and Mediterranean shag and an information campaign to increase awareness about the sea birds.

On land...

All **Mediterranean shag** colonies along the Black Sea Coast of Turkey and Bulgaria has been surveyed by the research team. We have identified 47 key locations and confirmed the breeding in 45 of them, whereas two of them were used for only wintering. The breeding range of Shags is wide, covering a large area in the Black Sea beginning from Kiyıköy in Thrace extending to Hopa, which is the easternmost district located at the Georgian border.

At sea...

The pilot standardized boat-based observation transects were conducted within territorial waters of the three countries between January 2012 and March 2014. Boat based observations were carried using standardized methods implemented by the **European Seabirds at Sea** (ESAS) program for recording seabirds at sea to allow the data collected to be incorporated into the wider European database.

The collection of data from boat-based surveys also helped identify these offshore sites and map important rafting sites where the birds would spend hours waiting for nightfall before moving into their colonies.

In the class...

The Black Sea project also aimed to train staff and volunteers from Romania, Bulgaria and Turkey on seabird research and conservation methods.

Three international trainings have been realized within the project: Training on Standard boat-based and land-based survey methods, Training on GIS methods and seabird database and Training on Marine IBA data analysis-Black Sea Marine IBA with participation of researchers, academicians and volunteers.

On the media...

TV, newspaper, magazines, radio programs and social media are used in order to raise awareness for the importance of Marine Important Bird Areas and Protecting the seabirds.

During the reporting period **4,432,185** people are estimated to have been informed about the project, seabirds and their conservation, via the information material available on the internet and media, according to DD's external media agency, Ajans Press. The total media effect of the project has reached **1.467.000** \$.

And into the future...

The continuation of research and conservation actions will be crucial to securing the future of the Black Sea as a safe haven for **Yelkouan Shearwaters**. The project is a showcase of how a partnership between governmental and conservation organisations can succeed in protecting one of Black sea's most threatened Seabirds.



Section **1**

PROJECT SITE

Southern Black Sea
(Turkey, Bulgaria, Romania)



The Black Sea is one of the most fascinating seas in the world. It may be said, for example, that it is the world's youngest sea. The Black Sea began to take on the properties of a briny sea at the end of the last ice age about **7000 years** ago, when it was a freshwater lake and

the waters of the Mediterranean flowed into it via the Istanbul's Bosphorus strait.

The Black Sea is one of the most isolated inland seas in the world. Located between South-eastern Europe and Anatolia, the Black Sea has an approximate surface

area of **423,000 km²** and a water mass of **547,000 km³**. Its average depth is around **1,240 m**, with its deepest point reaching **2212 m**. Its total coastal length is around **4,340 km**. Ukraine has the longest Black Sea littoral (*1,628 km*), followed by Turkey (*1,400 km*)



BIRDS ON THE BLACK SEA*

The Black Sea is a sanctuary for a rich variety of bird life. As it has low salinity and is also cold, it is more fecund than other seas. It is also particularly rich in fish populations that live in schools. This is very important for birds that feed on fish such as yelkouan shearwa-

ters, that are the open sea birds of the Black Sea, which forage in the sea, rest in the sea and sleep in the sea. Yelkouan Shearwater never goes on land except for nesting. The Black Sea has numerous and diverse habitats for birds. Most of the birds forage

in the Black Sea are dependent upon the coast for resting, sleeping and mating. The characteristics of the coastline are therefore the most decisive factor in their choice of habitat. The water in these areas has low salinity and is murkier as a result of the particles carried by rivers. The water is therefore mineral-rich.

The rocky isles and steep cliffs along the coast of Turkey are the birds' nesting areas. The mediterranean shag, yellow legged gulls and cormorants inhabit these areas. The estuaries of the Dnieper, Dniester, Danube, Sakarya, Kızılırmak, Yeşilırmak and Çoruh form important habitats. As the Black Sea is situated to the south of the temperate zone, it does not freeze like some other inner seas (e.g., the Baltic Sea). Thus, water birds living in lakes in southeastern Europe find refuge in the Black Sea with the freezing of their lakes in January and February.

** This excerpt is taken from "The Black Sea Box Education Set" prepared jointly by BSEC, WWF Turkey, UNDP and TCCC.*



TRAININGS

The Black Sea Project also aimed to train staff and volunteers from Romania, Bulgaria and Turkey on seabird research and conservation methods. Three international trainings have been realized within the project:

Training on Standard boat-based and land-based survey methods

The methodologies produced were presented to the 25 participants of project staff and volunteers from Turkey, Bulgaria and Romania at a training seminar which took place in Istanbul on the 6th and 7th July 2012. The seminar included theoretical training in all mentioned methods and their demonstrative implementation on the ferry boat in Bosphorus for ESAS, coastal counts and Shag colony surveys methods.

Training on GIS methods and seabird database

A series of lessons on GIS, statistical and GIS data analysis, as well as on the ESAS database have been prepared and presented at the 2nd project's workshop which took place in Istanbul on the 3rd-4th November 2012. The training workshop was attended by 24 participants of the project staff, academicians, NGO Representatives and volunteers from Turkey, Bulgaria and Romania.

Training on Marine IBA data analysis-Black Sea Marine IBA Workshop

The training for Marine IBA data analysis has been implemented on 30th, 31st of October and 1st of November 2013 (3 days).

The training workshop was attended by 24 participants of the project staff, academicians, NGO Representatives and volunteers from Turkey, Bulgaria and Romania



Section **2**

BIRDS AND RESULTS

The Yelkouan Shearwater
(*Puffinus Yelkouan*)

The Mediterranean Shag
(*Phalacrocorax aristotelis desmarestii*)



The Yelkouan Shearwater *Puffinus yelkouan*

Yelkouan Shearwater *Puffinus yelkouan*

The Yelkouan Shearwater is a member of the Procellariidae or tube noses, a group of seabirds so diverse that they encompass a wide variety of species ranging from the large albatrosses to the tiny storm-petrels. Yet all these seabirds share one common feature, a pair of tube-like nostrils on the top of their beak which allows them to filter salt. This enables these seabirds to stay out at sea for long periods without access to fresh water. The Yelkouan is a relatively small shearwater and can dive up to depths of 30 m to catch fish. The main breeding colonies are concentrated in the central and eastern basin of the Mediterranean, from Corsica and Sardinia through the Central Mediterranean, the Adriatic and the Aegean.



290 DAYS

The project team has spent 290 days at the sea and on the shore for the research

THE BLACK SEA SEABIRDS LAYMAN'S REPORT

BIRDS AND RESULTS Section 2

The distribution of Yelkouan Shearwater colonies in the Mediterranean Basin



Distribution

Endemic to the Mediterranean basin, with breeding populations in Malta, Spain, France, Italy, Greece, Albania, Croatia, Algeria and might breed in Turkey and Bulgaria..

Global Population

10,815 - 53,574 breeding pairs

Length 30 - 35 cm

Wing span 70 - 84 cm

Call

Single (sometimes up to three) in-drawn breath-like calls Aaah-ha Aaah-ha. Calls can be used to differentiate between male and female, with the female having a deeper pitch than the male.

Reproduction

Incubates single egg in deep crevices along generally inaccessible cliffs. Pair raises one chick per year.

Lifespan

Up to 25 years
Reaches maturity at 2-3 years

Food

Small fish and squid up to 30m depth

Status in Mediterranean

Declining

IUCN Classification

Near Threatened

Adapted from BirdLife International Species Factsheet

Identification of important areas for Yelkouan Shearwater

Boat-based Observations

Using the ESAS (*European Seabirds at Sea*) methodology, two years of boat-based observations were carried out, mapping the distribution of Yelkouan Shearwaters as well as other bird species and dolphins. Transects were undertaken each month around the coasts of Bulgaria and Romania and at the open sea along Turkey and Ukraine.

ESAS surveys were carried out along predaefined routes within territorial waters of the three countries during 2013. In total, 37 trips were made and a distance of 2,428 km was covered during ESAS surveys, resulting in a total surveyed area equivalent to 1,438 km². On completion of all the surveys, 75 species and 14,459 individuals were observed of which 24 were seabirds with 12,535 individuals including 2,753 Yelkouans Shearwaters.



2428 KM² The project team has surveyed 2428 km² area

Number of bird species observed	75
Number of bird observed	14,459
Number of seabird observed	12,535
Travel distance (km)	2,428
Prospected area (km ²)	1,438

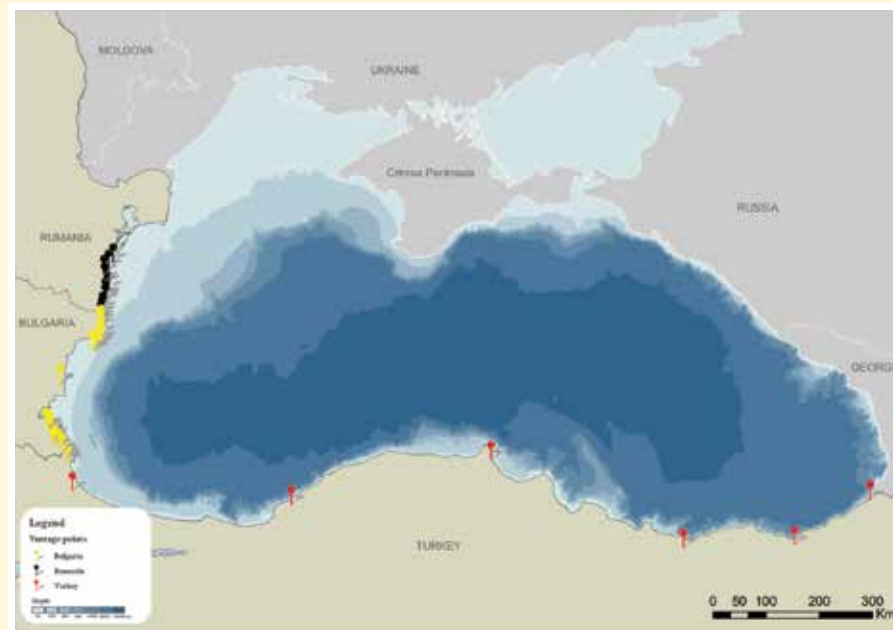
Summary of ship-based surveys

Land-based observations

Observations took place from fixed watch points in Bulgaria, Romania and Turkey and data were also collected from BirdLife Turkey volunteers on near-shore movement patterns of this species. These records were particularly important to allow a better understanding of rafting behavior.

The process followed to identify the preliminary marine IBAs for Yelkouan Shearwater and Mediterranean Shag was based on the standardized protocol

developed by BirdLife International in the document “*Marine Important Bird Areas toolkit*” (BirdLife International), as well as on the knowledge and experience of other BirdLife partners which have already completed their marine IBA inventories, i.e. SPEA/BirdLife Portugal (Ramirez *et al.* 2008), SEO/ BirdLife Spain (Arcos *et al.* 2009) and HOS/BirdLife Greece (Fric *et al.* 2012).



Vantage points in each country
(Romania in black, Bulgaria in yellow and Turkey in red color)

This protocol can be summarized in four main steps:

Step 1: Data collection. A great effort was focused on collecting data at sea, which were complemented with external sources and habitat information.

Step 2: Data analysis and identification of candidate sites. This was a complex phase involving statistical and geographical analysis of collected data in association with statistical modeling in the identification and delineation of candidate sites for the two species separately.

Step 3: Application of IBA criteria on identified candidate sites. To validate (or reject) the candidate site as areas

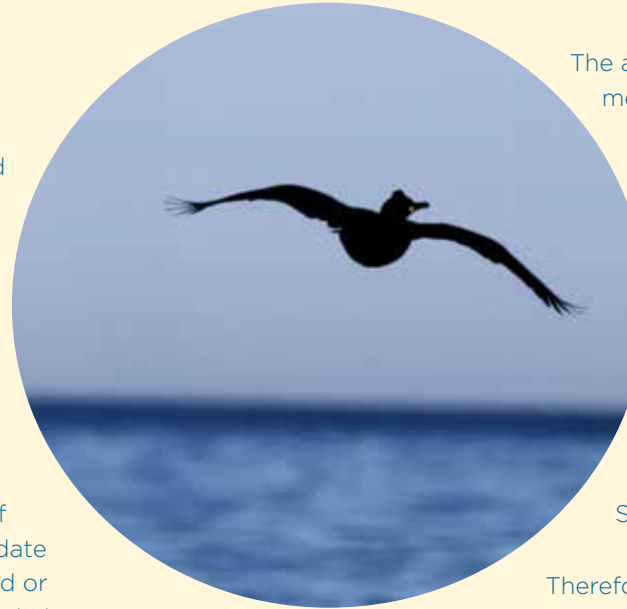
contributing to marine IBA delimitation.

Step 4: Final delineation of boundaries and identification of marine IBAs. Final IBA boundaries were adjusted to facilitate their future management. If different candidate sites overlapped or were very closed, they were

combined to form a single IBA.

The analysis and methodologies employed differ according to the type of marine IBA. High seas sites were identified for Yelkouan Shearwater and Seaward Extensions for Mediterranean Shag.

Therefore the procedures are treated separately below.



Step 1

Indirect Information: Habitat data

Distribution Models

Collecting bird data is obviously essential, but habitat information is also important to identify key areas for seabirds, as well as to understand why these are so special. Yelkouans data and habitat data were therefore combined, by means of habitat modeling procedures. For these models

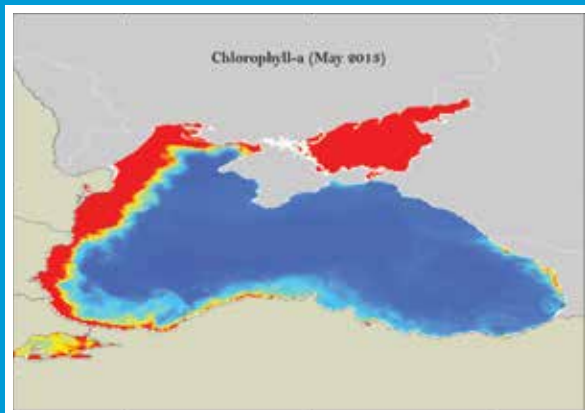
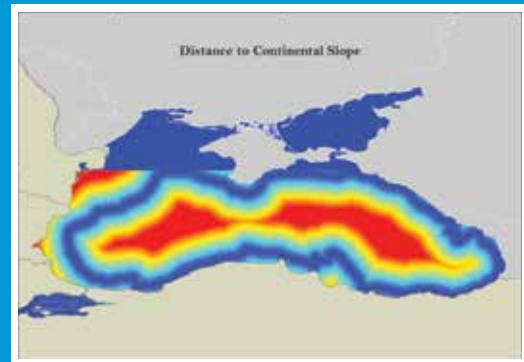
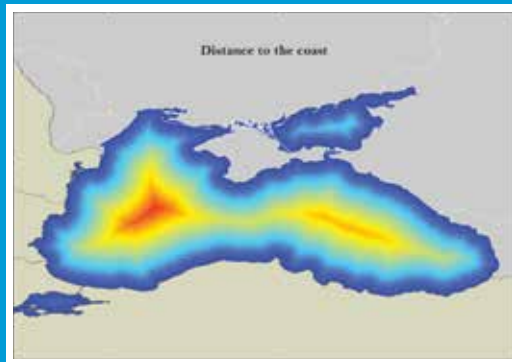
several variables were used, both static (*bathymetry, distance to the coast, distance to the continental slope*) and dynamic (*sea surface temperature and chlorophyll concentration*). The influence of these variables on the seabird distribution was tested through statistical analysis. These models also allowed for

the extrapolation of Yelkouans densities to areas which could not be surveyed, due to the large range of seabird distribution.

Datasets of environmental variables, which were collected and used, together with data from boat-based surveys are provided below.

	Variable	Spatial Resolution*	Temporal Resolution	Source
Static	Bathymetry	0.5'	-	GEBCO (www.bodc.ac.uk)
	Distance to the coast	0.5'	-	Derived from coast line data
	Distance to the continental slope	0.5'	Seasonal average	Derived from GEBCO bathymetry
Dynamic	Sea Surface Temperature (SST)	2.5'	Seasonal average	Terra Modis (http://oceancolor.gsfc.nasa.gov/)
	Chlorophyll- a density	2.5'	Seasonal average	Aqua Modis (http://oceancolor.gsfc.nasa.gov/)

Environmental data collected and used for modeling seabird distribution



Environmental datasets

Step 2 Species Data



Map of recorded Yelkouan Shearwater density in all seasons. Densities above average ($> 1 \text{ bird/km}^2$) depicted by medium circles, while the highest 5% of densities (114 birds/km^2) by large circles. Census locations with lower densities are shown by yellow dots.



First, it was necessary to analyze the raw data using different approaches depending on the type of data, and then arrange them in GIS layers. Information was treated such that the best areas were clearly highlighted in each layer. Data were considered independently for each season (*oversummering, non-breeding*

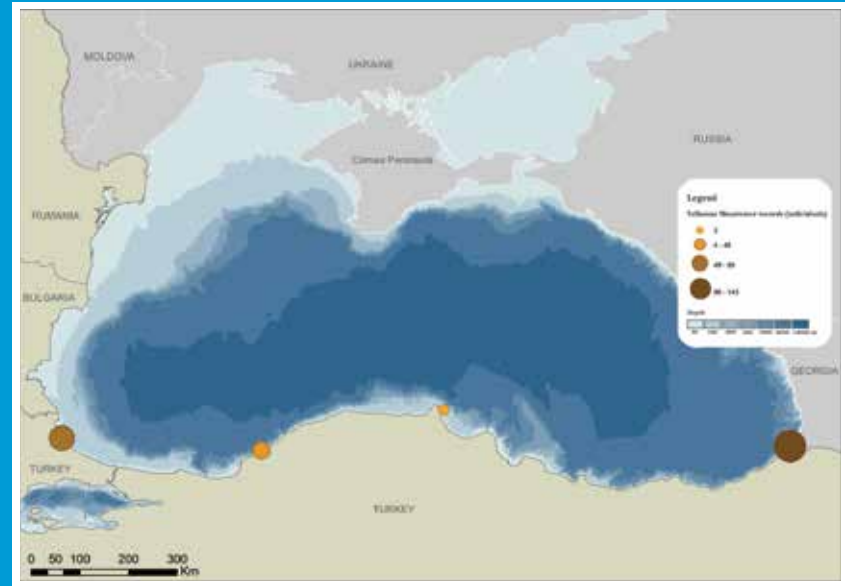
period and all the seasons). Layers were treated as either primary or complementary depending on their quality. Once all available layers had been arranged, candidate sites for Yelkouan Shearwater were identified by overlapping them and picking out the best locations as highlighted by two or more layers.

The main types of layers considered were:

Data from boat-based surveys.

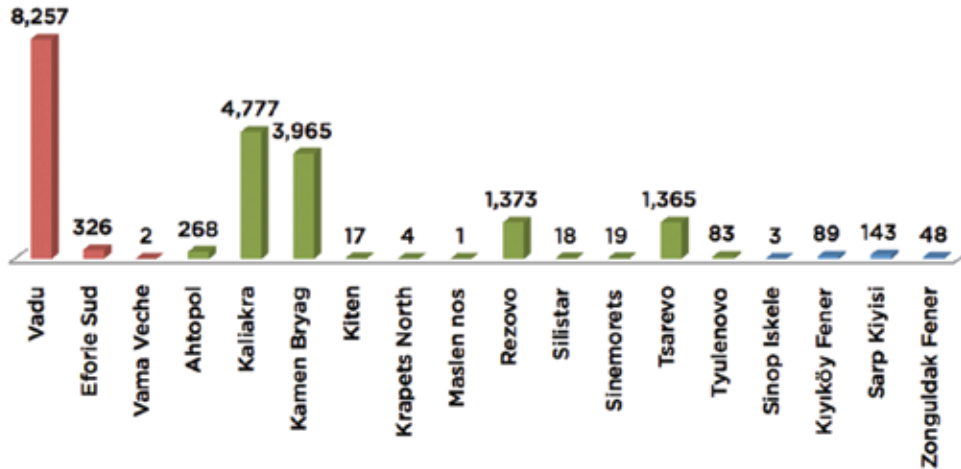
Information from boat surveys was allocated to count-units that correspond to 5 minutes of transect censuses, for which a density value was estimated (*birds observed within transect*

band/area surveyed). Several arrangements were made for this type of data, but the main approach guiding the identification of hotspots was to highlight those count-units with the highest 5% density values (*excluding zero counts*), using counts over 50% as support data.



Total counts of Yelkouans Shearwaters in Romania, Bulgaria (*left*) and Turkey (*above*) vantage points during 2012 and 2013.

The maximum number has been recorded in Vadu (*Romania*) with 8.257 individuals.



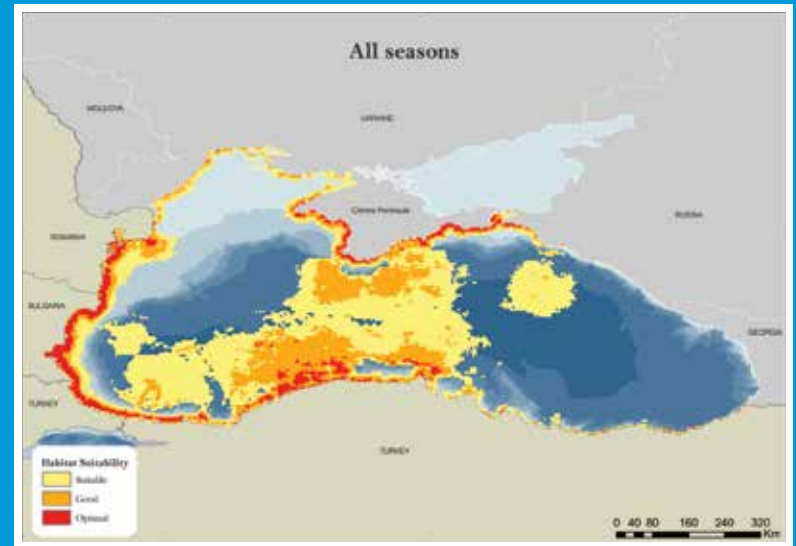
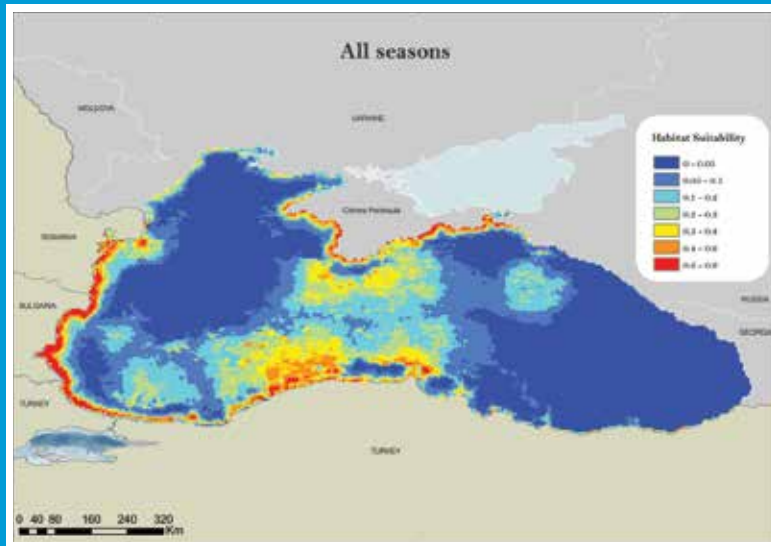
Total number of Yelkouans counted in each vantage point during 2012 and 2013.
(Romania in red, Bulgaria in green and Turkey in blue color).



Habitat Models.

Statistical models were based on presence-only data from boat survey, using the Maximum Entropy approach (*MaxEnt software*). Model output is qualitative and was referred to grid of 2.5' of latitude x 2.5' of longitude (*ffi* 4.5 X 4.5 km); each output cell had a value of 'habitat quality' which ranged from 0 (*low*) to 1 (*high*).

Models were built separately for each season (*oversummering, non-breeding period and all seasons*) only for 2013 due to the limited surveys. Reclassifying the models obtained, the best areas were highlighted in three probability values: Moderate, Good and Optimal areas.

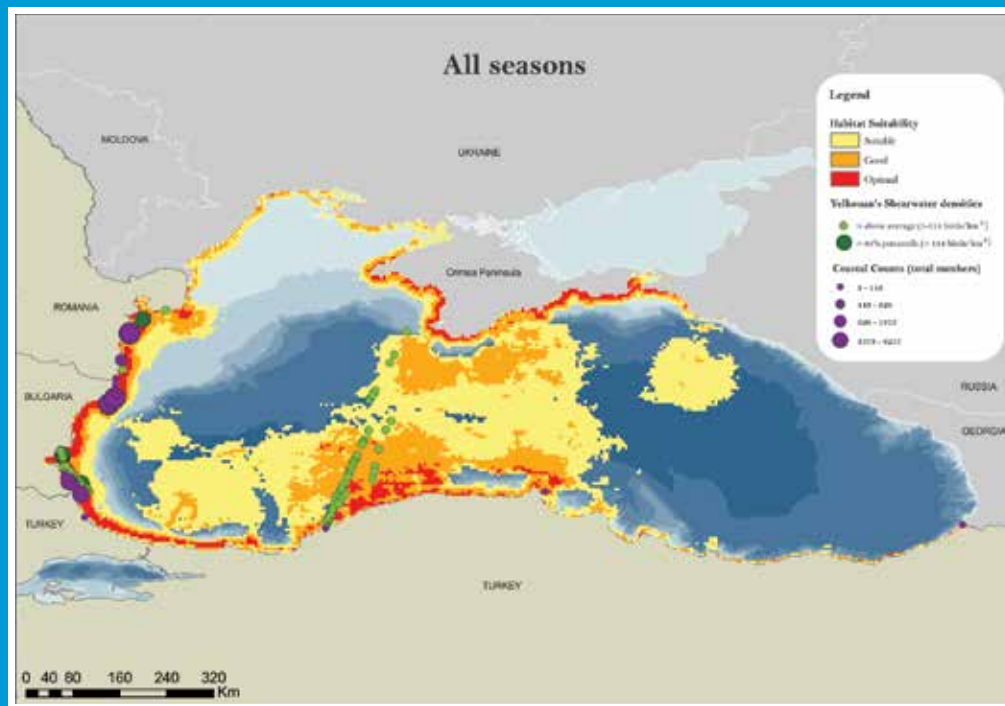


Map on the left shows the habitat suitability for Yelkouan Shearwater in all seasons as deduced by maximum entropy modelling method. Low values (close to 0) represent low suitability, while high values (close to 1) represent optimal areas. The map on the right represents habitat quality resulting from reclassifying the first one. Suitable areas are shown in yellow, good areas in orange and optimal in red.



Integration of data layers and delineation of boundaries of candidate “High seas sites”.

All available data layers, including maps of densities, coastal counts as well as areas exhibiting good and optimal conditions deduced by modelling were overlaid separately for each season for 2013. The boundaries of candidate sites were delineated in such a way as to enclose the overlapping areas of all mentioned layers which ultimately identify the most suitable habitats for seabirds



Identification of “high seas sites” for the Yelkouan Shearwater along the Black Sea in all seasons. The map shows an overview of the best areas according to a combination of boat surveys, coastal counts and habitat modelling data. Note the boat surveys data are expressed in density values while coastal counts in total numbers.



The Mediterranean Shag

(*Phalacrocorax aristotelis desmarestii*)

Mediterranean Shag

Phalacrocorax aristotelis desmarestii

Distribution:

The Mediterranean Shag can be found along the entire Atlantic coast of Europe as far north as Finland and including Iceland, as far south as the coast of Morocco, and ranges in the entire Mediterranean nesting on parts of the coastline of most European and north African countries as well as parts of the Black Sea coast (del Hoyo et al. 1992). In Black Sea, it breeds in scattered colonies, the core population is at the coastline between Zonguldak and Kastamonu, getting less frequent to the East and West. The Western and Eastern edges of the breeding locations are Kiyıköy-Kırklareli and Hopa-Artvin respectively.

Ecology:

The Mediterranean Shag is a coastal species that shows high nesting site fidelity. It feeds exclusively diurnally, and one bird is always present with the clutch or brood during the breeding season. Reproduction: January-May. Food: This species feeds on a wide range of benthic, demersal and schooling, pelagic fish. Ammodytidae, Gadidae, Clupeidae, Cottidae, Labridae are the principal families presented in its diet. It also feeds on polychaetes, cephalopods, other molluscs and small benthic crustaceans.

*Identification
of
“Seaward Extensions”
for
Meditertanean Shag*



Step 1

Mediterranean Shag breeds along the Turkish Black Sea Coast as well as in Bulgaria. Many of its colonies are already known and protected, but in many cases the boundaries of these sites can be extended to include those parts of the environment which are used for feeding, maintenance behaviors and social interactions. Such extensions are limited by the foraging range, depth and/or habitat preferences.

In order to know fully the number of pairs of this specie, direct counts and mapping of apparently occupied nests were performed in Bulgaria and Turkish Black Sea coast.

Colony Surveys

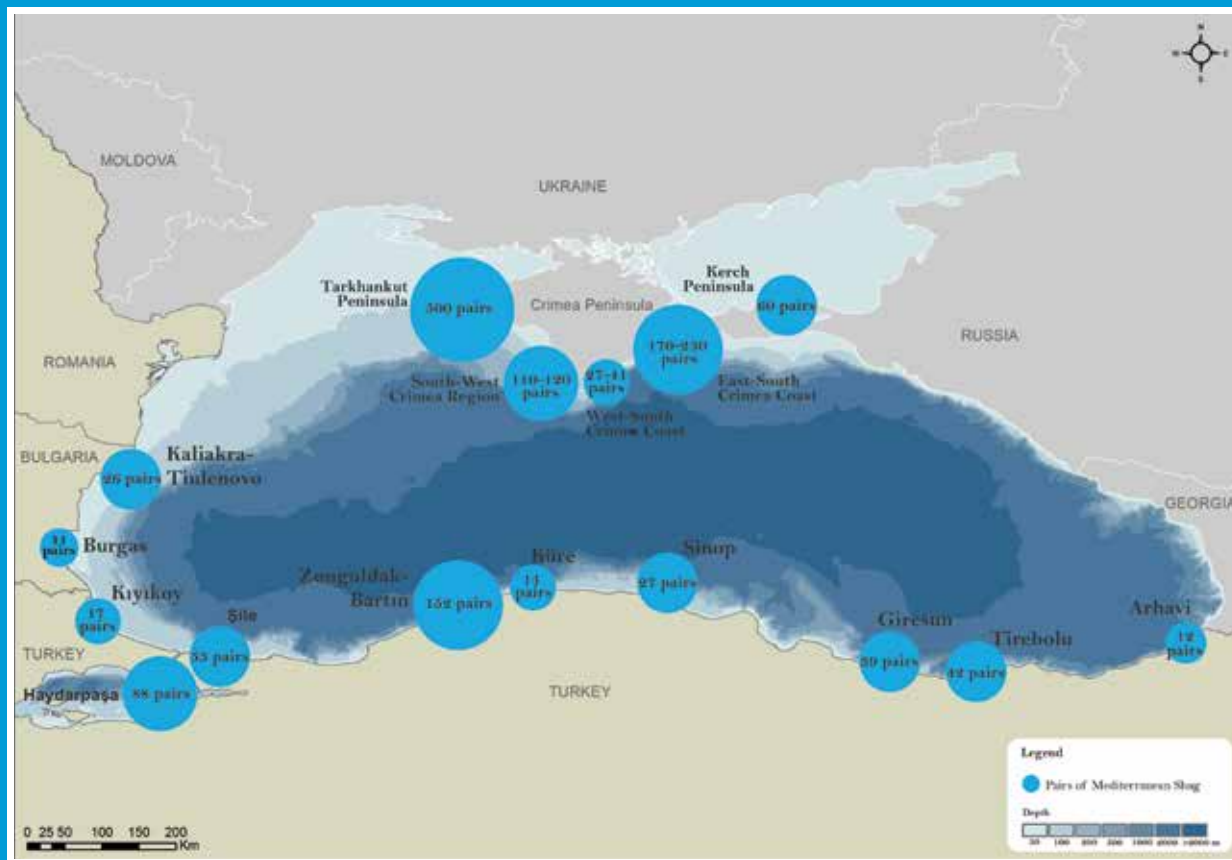


The first stage within the data collection process was the compilation of existing information on the size and location of Shag colonies. We have visited each of the colonies at least twice from December to May however we have surveyed the colonies when we have assessed min-max number of pairs breeding in a colony,

To know the current situation of this breeding species in all the Black Sea, a bibliographic search was carried out in Ukraine, Russia and Georgia. As a result of this we have figured out that the largest congregations were in Crimea.



Distribution of Mediterranean Shag's Colonies along the southern Black Sea Coast and Crimea region. In Bulgaria one colony was located; while in Turkey 45 (some of them grouped in the map) were inventoried along the coast. In the southern coast of Crimea five locations concentrate around 15 colonies.



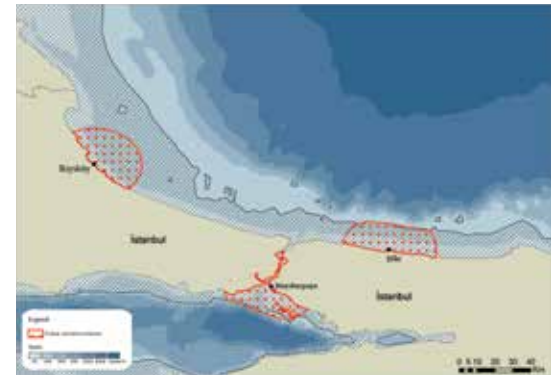
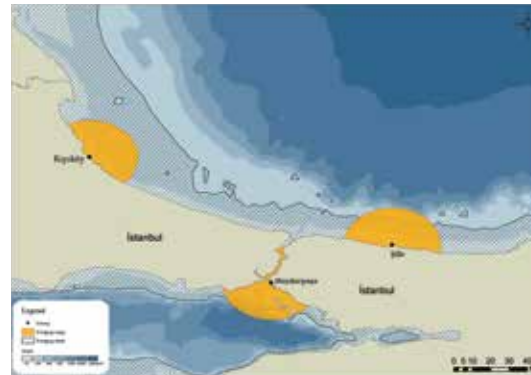
Size of colonies in the Black Sea depicted by circles. In Bulgaria, there are only two colonies. The largest is (*Kaliakra-Tiulenovo*) presents 26 pairs. In Turkey, highlight Zonguldak-Bartın with 152 pairs, followed by Haydarpaşa with 88 and Şile with 53. In Crimea, the largest breeding group is on Tarkhankut with 500-600 pairs (Ukraine data were provided by BirdLife/Ukraine).



Step 2

Seaward extensions of marine IBAs was defined by a foraging distance around the breeding colonies (*Bulgaria and Turkey*), specifically a foraging range (*maximum distance recorded from the colony where Shags are found foraging*) and depth (*maximum depth recorded where Shags are found foraging*).

These radii were obtained from the BirdLife International Seabird Foraging Radii Database, 20 km as Foraging range and 80 m as Foraging depth were considered for the analysis. Fisheries data could not be used for identifying the seaward extensions, since the prey species do not have commercial value and no published information exists.



Example of the process for identifying the Seaward Extensions. The map on the left shows the maximum foraging range (20 km) in orange and maximum foraging depth (80 m) in black. The map on the right represents the final boundaries.

Step 3

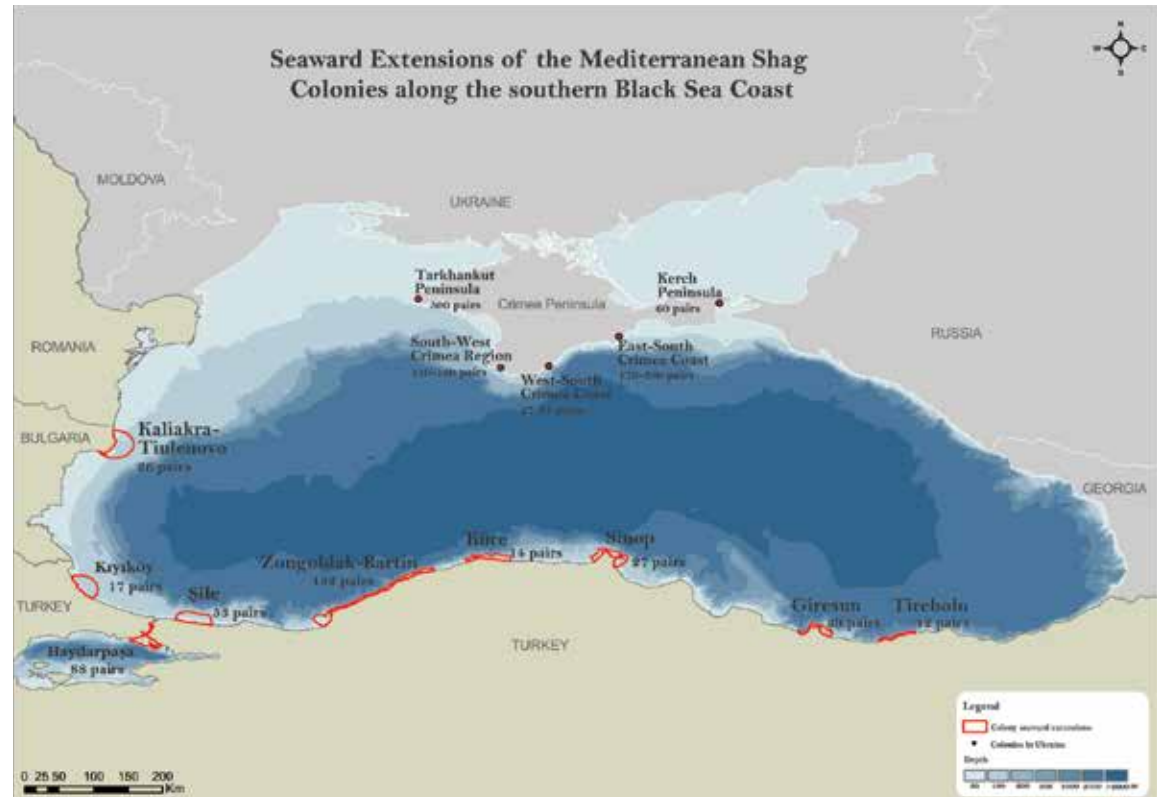
Once obtained the candidate sites, IBA criteria were applied for each site in the 3rd meeting/ training held in Istanbul where it was taken in account the expert opinion of the four partners.

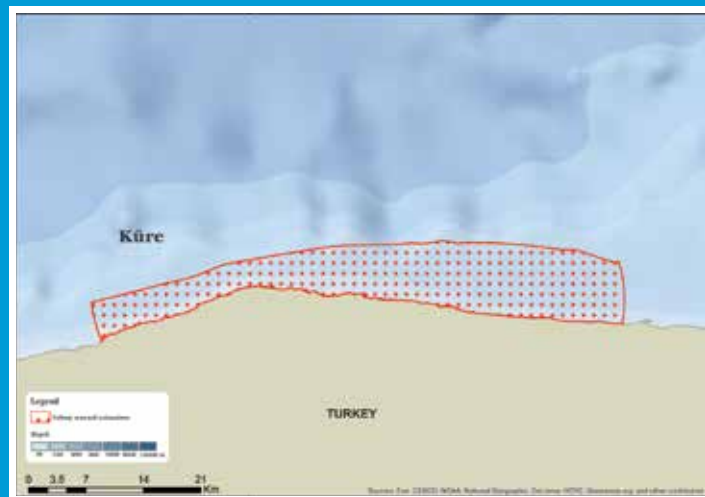
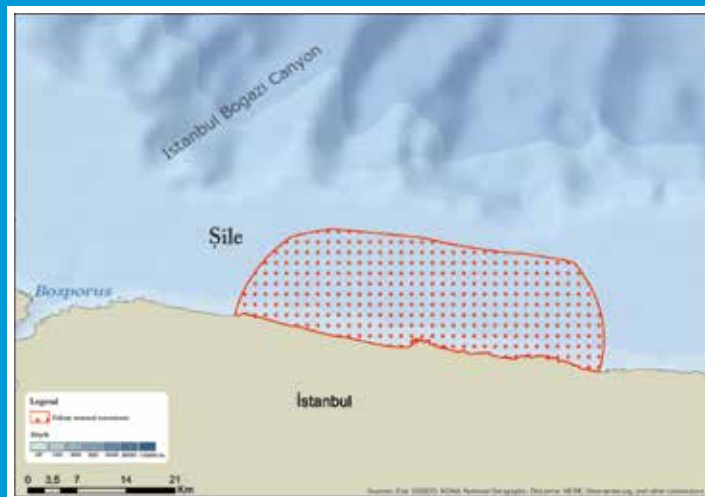
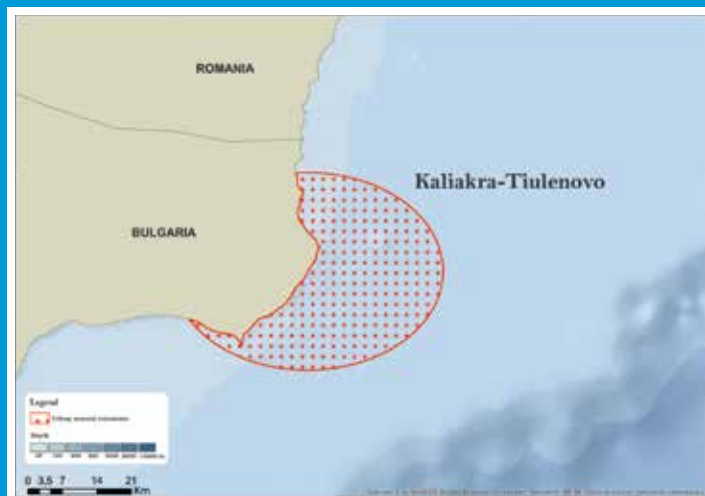
This involved the comparison of the populations recorded in each colony to the numerical threshold values set for the specific criterion.

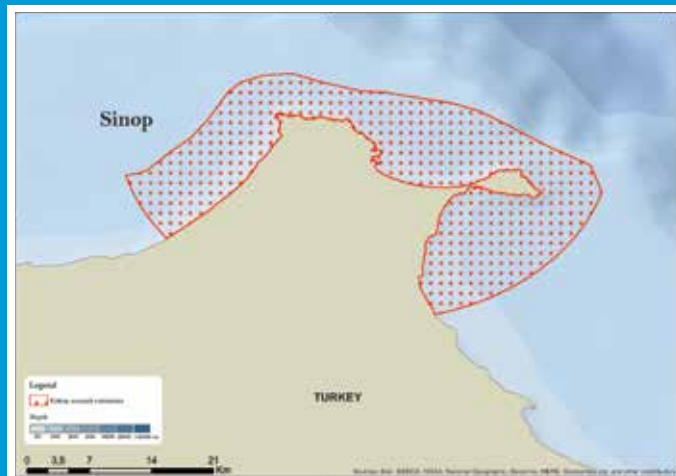
The IBA criteria used were: Global criteria (A4. (i)) and European criteria (B1. (i)); (B1.(iv)).

Hence, 9 Seaward Extensions were proposed for the Mediterranean Shag along the southern Black Sea Coast (Figure X and X), one in Bulgaria and 8 in Turkey.

Seaward extensions colonies proposed in Bulgaria and Turkey







Thumbnails of
each Seaward
Extension





Kick off Meeting

A project launch at a high profile venue has been organised on the 5th of July 2012, in İstanbul. During the launch, DD, along with the project partners, presented this new project showing what actions and results are foreseen. Project partners, representatives from the government, decision makers, representatives of other environmental NGOs and academicians attended to the meeting.



Closing Event

Closing meeting was held in Burgas/Bulgaria on March 20 and 21, 2014 with the participation of project staff, academicians, volunteer, press members. A field trip has been organized to the recently confirmed Mediteranian Shag breeding site near Burgas.



Raising Awareness

TV programs, newspapers, magazines, radio programs and social media are used in order to raise awareness on the importance of Marine Important Bird Areas and protecting the seabirds.

During the reporting period, **4,432,185** people are estimated to have been informed about the project, seabirds and seabird conservation, via informative material available on the internet and media, according to DD's external media agency, Ajans Press. The total media effect of the project has reached **1.467.000 \$**.

Karadeniz'in kuşları tek tek sayılıyor

DD'nin Önemli tarafından yok olma riski bulunan topuklu kuzbata ve yelkovan kuşlarının envanter çalışması yapışık amacıyla yürütülen, "Karadeniz Denizi Kuşları" projesi kapsamında gözlem ekibi Trabzon'a geldi. Karadeniz Denizi Kuşları Projesi Koordinatörü Hayri Dağılı, projenin 239 bin avralık maliyetinde büyük bölümünün Avrupa Komisyonu Çevre Direktörlüğü tarafından karşılanacağını ilave etti. Dağılı, "Proje 17 ilki çalıyor. Proje'nin sonuna da hedeflerimizden bazıları tahdütlerle karşı karşıya olduğu, özellikle yelkovan, topuklu kuzbata, açık denizdeki deniz kuşlarının ve çevre kuşlarının ne olduğunu belirleyeceğiz" dedi.



4 ülke yelkovan için seferber

İNSAN OĞULUNUN doğaya verdiği gırtl denizli olmayan tabii bir medeniyetle sayılan her geçen gün artarak yelkovan kuşları için dört ülke bir araya geldi. Türkiye'den Yunanistan, Bulgaristan ve Kıbrıs'ın yanı sıra, Türkiye'nin de yarı adası deniz ekonomisine Karadeniz'in gırtlende deniz kuşlarının önemli bir yere ve beslenme alanlarının belirleyici haritaların hazırlanmasına çalışacak. **DD'nin Önemli** Genel Müdürü Emin Yılmaz, "Dünya denizlerinde büyük popülasyonların birinci anlama çıkaran insan da dahil tüm canlı türlerini önemimiz yende etkilerken deniz kuşlarının da gelece-



giri tehlike altına atıyor. Bosta listelenmiş olmak üzere yelkovan ve karabatağ gibi bu önemli türlerin de yarı adası deniz ekonomisine beslenerek sahip çıkılmalı. Aksi halde yelkovanın sadece bir mülkümüzde kalan nesnelerin canlılar olarak anılması" dedi.

■ Mustafa ULAKTINTAS / İSTİHARAT





The Black Sea Seabirds Project Layman's Report

"Preparing the basis for an inventory of Marine Important Bird Areas along the southern Black Sea Coast"
(Romania, Bulgaria and Turkey)

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