PRELIMINARY OVERVIEW OF OPPORTUNITY PLATFORMS AND CITIZENS OBSERVATIONS

PRELIMINARY OVERVIEW OF OPPORTUNITY PLATFORMS AND CITIZENS OBSERVATIONS

<u>Note of the Secretariat</u>:
This document is an update of the document SC12.Doc11 presented during the Twelfth Meeting of the ACCOBAMS Scientific Committee.

Resolution 7.6 "Work Programme and Budget for the triennium 2020-2022", adopted by Parties at MOP7 in November 2019, requests the Scientific Committee to:
- Review the current citizen sciences initiatives in the ACCOBAMS area;
- Evaluate the relevance of "Citizen Science" input of cetaceans' sightings in expert-supervised databases;
- Produce basic guidelines on the use and how to gather information.

In order to assist the Scientific Committee in this task, the ACCOBAMS Permanent Secretariat prepared a preliminary overview of opportunity platforms and Citizens observations. It is a living document that will be updated regularly whenever needed.

Eleven initiatives are listed in this document:
1- OBSenMER
2- Ionian Dolphin Project
3- BlueDiscovery System
4- Cetacei FAI attenzione
5- Black Sea Watch project
6- Romanian initiative
7- IMMRAC initiative
8- CIMA Research Foundation initiatives
9- Associazione Me.Ri.S. Mediterraneo Ricerca e Sviluppo
10- Social Media in the Service of conservation: Case study of Dolphins in the Hellenic Seas
11- Opportunistic data: what supply for the knowledge on cetaceans?

Most of the information regarding these initiatives originate from ACCOBAMS Partners.

1- OBSenMER

OBSenMER is a collaborative platform that facilitates the capture and analysis of observations at sea. It concerns all types of observations: marine mammals, sea turtles, fish, birds, but also human activities, such as boating, fishing, pollution, etc.
OBSenMER is aimed at collecting and sharing data on the Mediterranean macro-fauna and environmental factors.
A possible development of OBSenMER would be a dynamic interface for general public application (cetacean stranding monitoring, turtle nesting monitoring, marine waste monitoring), a creation of a new user type (species or group referees), exportation tools…

- **Open source tools**
  - **Mobile Application, OBSenMER** : from beginner to expert users
  - **Web platform :** to manage, see, and export data. www.obsenmer.org
  - **Tool to manage and share Photo-Identification catalogues**
- **Exchanges and sharing facilitated**
  - Between Observers and their Organization
  - Between Organizations and Data Users

- **Data Base**
  - **Shared**
  - **Open sharing** (CC-by-NC)
  - Data collected by expert naturalists **can be private**
- **Protection of sensitive species**
  - Public display delayed of 12 H
  - No public GPS coordinates
  - Possibility to privatize access to specific observations

The Mobile App

3 user levels
- **Level 1 : Opportunistic observations**– free access
- **Level 2 : Sighting effort without protocol**– free access – at least 15 minutes
- **Level 3 : Sighting effort with a protocol** only for expert naturalists – limited access
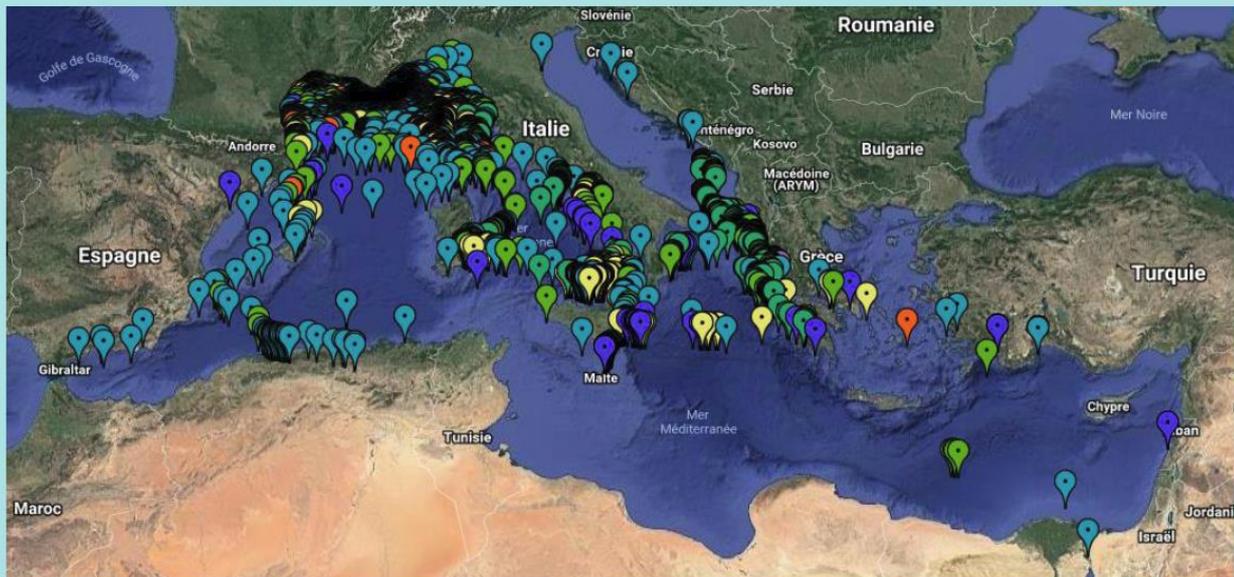
Data collected
- **Levels 1 and 2 :**
  - Marine mammals, rays and sharks, pelagic fishes, marine turtles, macro-plankton.
  - A **not dynamic interface** (non-changeable protocol)
- **Level 3 :**
  - Marine mammals, rays and sharks, pelagic fishes, marine turtles, macro-plankton, birds...
  - Weather conditions, Maritime Traffic...
  - **A dynamic interface** to add group of species or improve the protocol easily

Regardez **la mer autrement**

Disponible sur **App Store**

DISPONIBLE SUR **Google play**

6995 observations reported in the Mediterranean sea

More information on http://www.obsenmer.org/ .
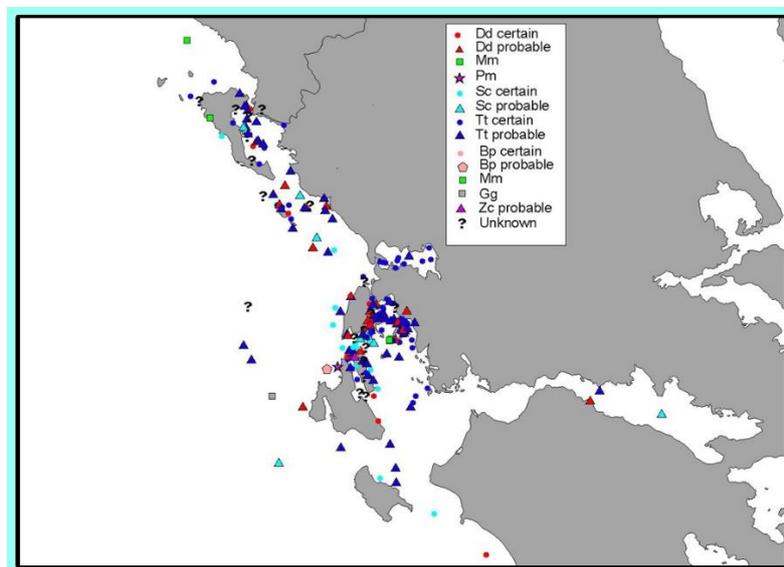
2- Ionian Dolphin Project

Since April 2012 the Ionian Dolphin Project has a brand-new web site with basic information about the project activities, as well as the latest news in a blog. With this new initiative the IDP aims to increase the interest about the conservation of cetaceans of the Ionian Sea, by encouraging residents, charter/flotillas sailing holiday operators and visitors to the area to report their sightings of cetaceans, through a user-friendly on-line form.
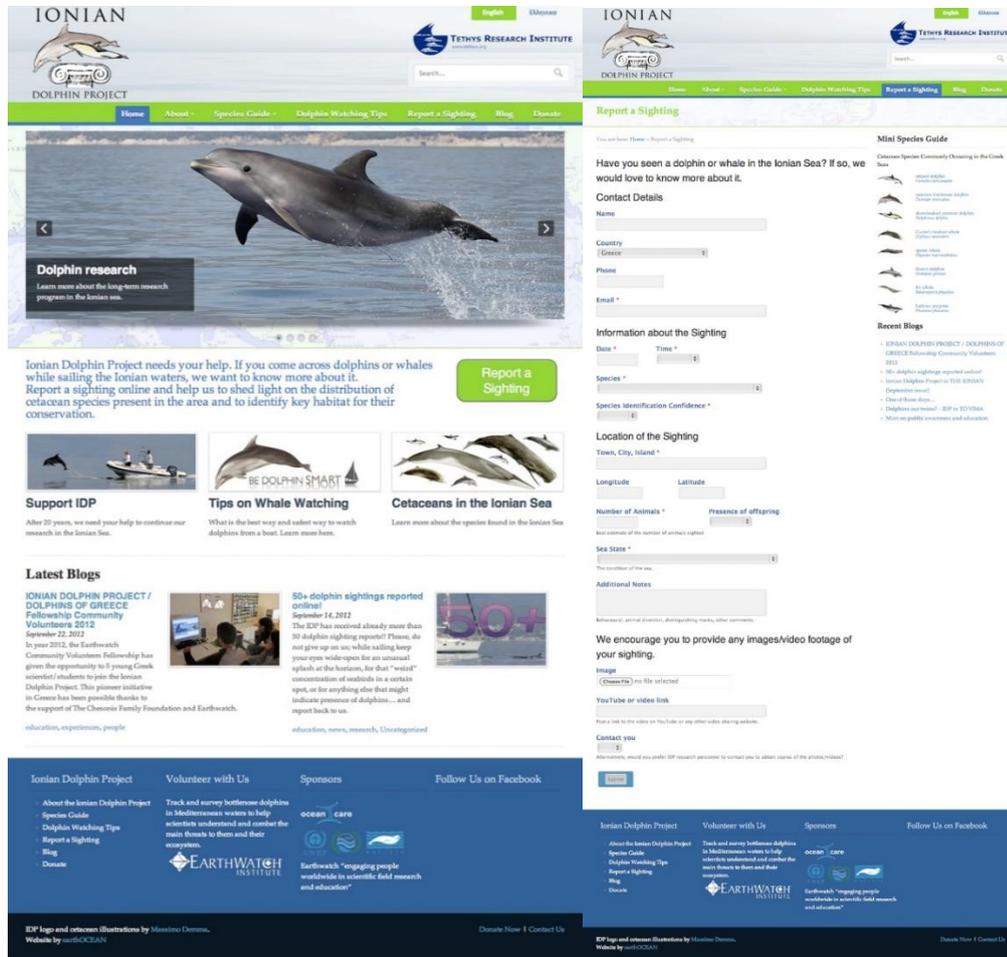
By the end of 2017 had received 301 sighting reports (see map below).

3- BlueDiscovery System

The *BlueDiscovery* System is a platform that allows for the deployment of an efficient and low-cost **Access Control and Visitor Information System** to **Marine Protected Areas (MPAs)**.

Some system functions are however of interest also to other organizations than the MPA itself, such as **Environmental Organizations**, to which the Marine Areas can easily 'export' the environmental and fauna reports thanks to an easy-to-use crowdsourcing feature, and National and International **Organizations responsible for Safety** (at sea and on land) interested to reports related to potential dangers to navigation and to the emergency call functionality.

The *BlueDiscovery* system is a Client-Server & DB-based architecture, consisting of a client **mobile App** free downloadable on any mobile device (smartphones and tablets), a **web-GIS** and an **Operation & Maintenance Portal**

The *BlueDiscovery* system functions can be easily adapted to the different applications and to the specific MPA's needs and include in particular a crowdsourcing function: possibility for the visitor to send to the MPA text messages which may be accompanied with geo-referenced photographs related to the following pre-configured categories:

- Environment: reporting of pollution events, e.g. oil spillage, presence of garbage or identification of any other events that may cause environmental damage
- Warnings and safety: reporting to the Administration of dangerous situations in the area, violations of the regulation and / or related to the safety of navigation,
- Wildlife sighting: for the geo-referenced reporting of naturalistic observations and faunistic sightings, such as observation of birds, dolphins, whales, turtles, etc.

In this context, visitors become active participants for the protection of the environment.

Then, the MPA can decide to disseminate the same information to all other users in case of a general interest or to a smaller interest group.

4- Cetacei FAI attenzione

Cetacei FAI attenzione ("Be aware of cetaceans") is a project mainly sponsored by FAI FONDO AMBIENTE ITALIANO (Italian Fund for the environment) which Tethys will carry out starting summer 2018. It is both a public awareness and a citizen science project. Main subject are Risso's dolphins which have been studied by Tethys in the Pelagos Sanctuary, N-W Mediterranean, since almost 30 years and which are apparently declining in the area. Aim of this project is to identify alternative areas where they have possibly moved to, with the help of the public, namely owner of pleasure boats.

A dedicated poster was printed and will be displayed in harbours and marinas along the Italian coast, from Liguria to Sicily. It is aimed at:

1) making people aware of the 8 cetaceans species living in the Mediterranean;

2) presenting a code of conduct for boats in presence of cetacean (in line with rules adopted by Accobams);

3) asking yachtsmen to report sightings of cetaceans, providing also some baseline data (time, position number and composition of groups), together with pictures usable for photoID, to be possibly matched with those in Tethys' catalogue.

Data can be posted through a dedicated website, which features also further information, and interactive keys for identifying species. This data collection will go on for 3 years, hopefully helping both the much-needed public education and conservation

More information on: https://www.cetaceifaiattenzione.it/segnala-un-avvistamento/

5- Black Sea Watch project

BLACK SEA WATCH PROJECT is a joint initiative of Green Balkans NGO, Bulgaria and TUDAV, Turkey aiming/s to raise public awareness on biodiversity of the Black Sea – a fragile ecosystem facing many threats. The developed tools – mobile app for smart phones and website – intend to raise knowledge about the flora and fauna inhabiting the Black Sea and to promote involvement of public into "citizen science" in the region. Collection of data and its submission by users will contribute to studies on occurrence and distribution of different species in the Black Sea.

To facilitate that process mobile application BLACKSEAWATCH is developed that is freely available with versions for Android at Google Play and iOS at Apple store. Additionally the website BLACKSEAWATCH.ORG is developed to allow people that are not using smartphones to get involved in data collection and become amateur scientists. Mobile version of the website will help users of smartphones that work on operation systems different from Android and iOS to submit information for their observations and findings.

Use of the mobile application and the website requires a simple registration with email and password. After registration users will be able to submit their observations by pictures with information on location, date, suggested observed species and other comments. Experts on different groups will review and verify the submitted information and after approval it will visualize on a map. All observations will be able to be filtered by group and species and shown on the map
Mobile application has four main pages. Three of these are accessible by icons at the bottom - home page at the left showing all observations by different groups of organisms, central page for login and submitting pictures with information and on the right will be accessible Species catalogue helping amateur naturalists to identify their finding. Fourth icon is situated at top right corner and leads to info page for the project and allows selection of language – English, Bulgarian or Turkish.

More information on: http://blackseawatch.org/

6- Romanian initiative

Before the Black Sea Watch project, an initiative was undertook through the www.delfini.ro webpage on which included a standard form to submit sightings and strandings event but which did not prove to be as effective as WhatsApp. Even though some people are just calling, Mare Nostrum NGO requests the directly to try and send also picture and location.

7- IMMRAC initiative

In the IMMRAC web and Facebook page, there is a system of chat that receives reports of sighting.

They have also a working research app for coastal marine mammal survey called Delphis. The plan in the future is to have a public edition the will be social and the incentive for downloading it is the ability to see where the last sightings of marine mammals were and to update about the sighting through the social media.

8- CIMA Research Foundation initiatives

Smart phone Applications for data collection
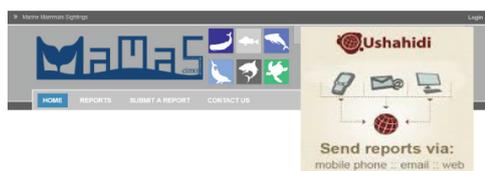
LogWhale

Objectives

According to the **ACCOBAMS Resolution 6.20** on whale-watching activities

Implement the standard to collect data on boats (annexes 4 – 6.20) of the Working Group with smartphone App

Test the procedure on pilot area (ligurian sea)
→ Collect boat tracks and coordinates of sightings

MaMaS Map on Ushahidi
http://mamas.cimafoundation.org/

Objectives

Report cetacean stranding with photo to support species identification, **supporting Coast Guards**

**Report sightings at sea**

More information on: http://mamas.cimafoundation.org/;

9- Associazione Me.Ri.S. Mediterraneo Ricerca e Sviluppo

This project aims to validate the feasibility and accuracy of cetacean monitoring program through the citizen science approach and to test the efficiency of this method to large scale study area. In this work data obtained by researchers monitoring were compared with data coming from citizen, which followed specifically developed protocol. Data collected were used to investigate the presence and distribution of bottlenose dolphins (*Tursiops truncatus*) in the Sicilian Channel and to evaluate the contribution of citizen scientist to improve knowledge about species, in this case for bottlenose dolphin a vulnerable species listed in the Annex II of Habitat Directive (92/43 CE).
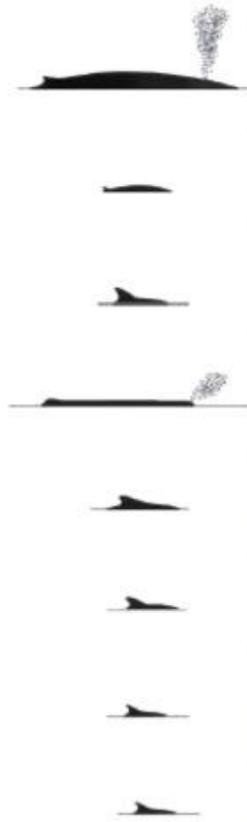
Common name: Fin whale Scientific name: *Balaenoptera physalus* Length: 18-22 m Features: vertical blow White right jaw, light gray left jaw
Common name: Cuvier's beaked whale Scientific name: *Ziphius cavirostris* Length: 6 m Features: body color variable based on age, from reddish brown to white, individuals commonly have white scars
Common name: Risso's dolphin Scientific name: *Grampus griseus* Length: 3-4 m Features: bulbous head without rostrum, body color variable based on age, from gray to white, individuals have many scars
Common name: Sperm whale Scientific name: *Physeter macrocephalus* Length: 12-18 m Features: 45° skewed blow, pull out the tail before dive, body color from dark gray to brown
Common name: Pilot whae Scientific name: *Globicephala melas* Length: 4,5-6 m Features: bulbous head without rostrum, body color black, male dorsal fin wider then female
Common name: Bottlenose dolphin Scientific name: *Tursiops truncatus* Length: 2,5-3 m Features: body color mainly gray, sometimes with light shade (from light gray to white) on the flanks
Common name: Striped dolphin Scientific name: *Stenella coeruleoalba* Length: 2-2,5 m Features: dark gray color on the back, with a white flame running across the flanks up to the dorsal fin
Common name: Short-beaked common dolphin Scientific name: *Delphinus delphis* Length: 2-2,5 m Features: dark gray color on the back, yellow on the flanks, the inside of the dorsal fin are often clearer

via Milano n°8, 92026 Favara (AG)
C.F. 93060970840
info.meris@gmail.com

via Milano n°8, 92026 Favara (AG)
C.F. 93060970840
info.meris@gmail.com

The results show that citizen dataset contributes to increase the distribution map of the 22% more than only research data were considered.
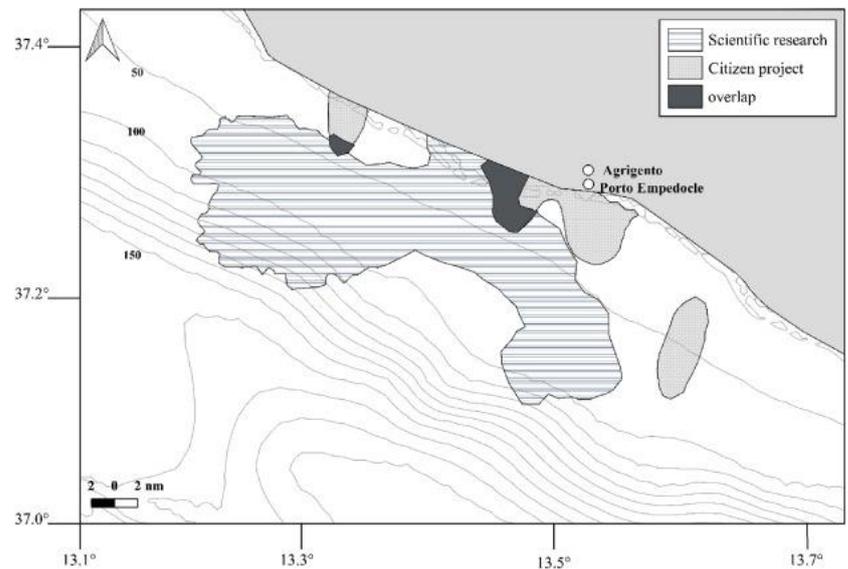
Citizen science programme results useful to gain information in small areas not monitored by scientific programs, such as in this study, and they would be very useful if applied at large-scale. The promotion of citizen science programs in specified small areas could be helpful to cover unmonitored zones, to gain preliminary results and bridge the gap of knowledge about species occurrence and distribution. For this reason, citizen support might help competent authorities to answer to the environmental policies as Habitat Directive and Marine Strategy Framework Directive. This study is a demonstration of how citizen can encourage scientists to start long-term research project in not regularly monitored areas.

Conclusion of the study: Citizen science programme could provide information in small areas not monitored by scientific programs, such as in this study. From this perspective, promoting citizen science projects in specified small areas could be helpful to cover unmonitored zones and bridge the gap of knowledge about species occurrence and distribution.

The contribution deriving from citizen science projects appears to be very useful for species management, provided that a rigorous control on the data received is carried out by expert researchers.

More information on: https://www.sciencedirect.com/science/article/pii/S0964569118303880

10- Social Media in the Service of conservation: Case study of Dolphins in the Hellenic Seas

Over 500 people helped researchers in hellenic waters just by videotaping dolphins during occasional sightings and posting them on **social media**.

With fewer and fewer funds available for environmental research, **citizen science** can help in many ways. In this case non-specialists collected data in the wild – whether they intended to or not. Researchers from Tethys and from the University of Thessaloniki, Greece, studied all geo-tagged YouTube videos of dolphins shot in greek waters they could track.

A high consistency was found between this citizen science results and the available literature, leading to the conclusion that accessing videos uploaded to social media can be a reliable source of information on **dolphin** presence and distribution and a valid complementary tool to traditional **research** studies, particularly for areas with little prior knowledge and limited resources.

More information: *Giovos I, Ganias K, Garagouni M, Gonzalvo J. 2016.* Social Media in the Service of Conservation: A Case Study of Dolphins in the Hellenic Seas. *Aquatic Mammals 42: 12–19.*

11- Opportunistic data: what supply for the knowledge on cetaceans?

The data of opportunistic sightings compiled in this study range from 1996 to 2016 and come from different categories of actors of the sea. A sorting of these data was carried out, and 56 % of the sightings were considered "reliable" or "probable" and were exploited in cartographic analyzes. The objective of this work was to study the contribution of opportunistic data for knowledge on cetaceans. Several elements were analyzed: (i) the spatial and temporal limits of coverage of these data according to distribution and the operating mode at sea of data providers; (ii) the correspondence of the results on the seasonal stands obtained compared with those observed in the scientific literature in the north-western Mediterranean Sea; (iii) the representativeness and/or complementarity of the results of this dataset with the known scientific results about calves and size of groups. The analyzes of this study showed results most often in agreement with what is already known scientifically from animals in the Pelagos Sanctuary. The supply of opportunistic data is interesting from a spatio-temporal point of view only when the suppliers are in small sampled areas and/or outside the summer period

More information: Marine ROUL, Nathalie DI-MEGLIO, Léa DAVID, Julie JOURDAN, Morgane RATEL, Alizée MARTIN, Anissa BELHADJER, Hélène LABACH Sci. Rep. of Port-Cros natl. Park, 31: 275-288 (2017)