

PROPOSAL FOR THE CREATION OF AN ADRIATIC EMERGENCY TASK FORCE

The necessity of creating an Adriatic Emergency Task Force is based to face possible transboundary emergencies occurring in a very narrow basin with an high anthropic pressure and a complex ecosystem. The Adriatic sub-region could be a useful example how to manage a common resource in a cooperative manner with joint effort from the different countries, as asked by several international Agreements.

1. BACKGROUND

Marine species mortalities attract a lot of public attention: all stakeholders involved during these events (i.e. institutions, research groups, stranding networks, media and general public) are in fact extremely involved both on emotional and technical levels, independently from the species involved, and coordination is fundamental also to avoid emotionally based approaches. In particular, in the last years, the relevant attention payed to environmental protection arise great concern regarding possible anthropic activities which could affect marine species, as underline by the tremendous oil spill occurred in 2011 in the Gulf of Mexico along the United States coastlines. From this and other past experiences and due to geographical and morphological features of the Adriatic Sea, the scientific and technical community worling on this basin agree that any possible large scale mortality event mainly due anthropic activities (chemical spills, climate changes, etc.) could threat marine species populations in this sea.

The degree of response to large marine species die-offs of each country depend on the existence of active stranding networks and research groups as well as on its economic and logistic possibilities. Some countries may be able to provide most of the scientific, technical and administrative infrastructure needed to face a massive die-offs while others may only offer a more reduced support or none at all. For these reasons, international agreements as ACCOBAMS encourage the cooperation between state and the sharing of knowledge and resources, in order to respond more effectively in these events. More in detail, this is necessary when these outbreaks become a transboundary event.

Sometimes mass stranding events and large die offs can affect multiple jurisdictions, involve various policy sectors and require a rapid response, which must be delivered under conditions of media and social pressures. Due to this peculiar and emotive attention, cetacean and sea turtles strandings often become a crisis situation, in particular during alive or mass strandings and those related to epidemic or anthropic causes. The causes of stranding events can be hard to understand before the results of data sampling, and also because they stretch without barriers across the sea. The uncertainty deepens if services depend on information held by other colleagues of other countries, in fact information may not be immediately forthcoming, it may follow a different methodology, process or approach and, for this reasons, it may be misleading.

Thus the organization of an effective response to crisis is fundamental. To face the extraordinary effort that marine mammal strandings can require in specific areas, organizational pattern will have to mobilize different services and institutions. Rapid support, participation and cooperation from different stakeholders and within scientific organization are requested to ensure an effective response and an adequate coordination of people who have never worked together before. It may be really difficult to reach a good level of coordination under these possible conditions of uncertainty, urgency and stress and maybe without a clear chain of command or hierarchy. Coordination is usually an important part in a stranding and becomes particularly relevant in a transboundary situation. In this case coordination and communication can be necessary among different jurisdictions provincial zones and even national governments, a situation that can originate sovereignty restrictions that can cause coordination difficulties.

Considering that most of the national procedures used in case of strandings are often recent and in some case incomplete and general, information between countries could flow most easily between jurisdictions and within organizations that have had previous collaborations. Actually, in case of transboundary events it can be necessary to face a continuous change of information distributed over a large number of actors. During this information flow the general common sense making, as interpretation, analysis or decision-making, can be very different. That's way to create a transboundary shared "general common sense" may take a long time but could be facilitate through the creation of a bottom-up process so to overcome subjective limitations and to facilitate rapid decision-making. In this sense data sharing and analysis of origins, distribution and intensity of strandings in different countries could help. One possible major barrier could be due to general difficulty of traditional public bureaucracies to produce dynamic responses. In order to better understand how transboundary response networks might be developed to produce effective responses, a important step is to develop a shared procedure starting from a selection of best practices and a debate among different governments and experts belonging to different services and institutions.

An Adriatic common approach during transboundary emergencies involving cetaceans and sea turtles can give the chance to share the vision on priorities (for example: sharing information promptly, developing and adopting minimum standards and best practices). In the long term, the aim should be to follow a common progression from informal to more formal governance and implementation of the transboundary process.

Within the NETCET project a roadmap to create a common strategy to face similar events have been implemented by several training programmes, dedicated workshops and continuous communication between the scientific and technical community. Even if not already structured, these cooperation allow to face promptly a sperm whales mass stranding inn September 2014 along the Italian coastline: more in detail, the advice from Croatian partners gave to the Italian institutions appointed for the stranding response the possibility to activate in time first aid and a rapid and effective response. These examples underline the importance to create a common strategy in the

Adriatic region to face marine species mass mortalities, in particular those related to human activities as chemical spills and sound sources.

2. MAIN CAUSES OF UNUSAL MORTALITY EVENT (UME)

Since cetaceans die-offs are more studied, these document will describe more in detail events related to marine mammals mortalities. In fact, even if sea turtles mortalities have been reported within the NETCET project monitoring activities, real causes are not still completely understood and poor data are available in literature.

An unusual mortality event (UME) is defined as: "a stranding that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response."

In recent years, increased efforts to examine carcasses and live stranded animals have improved the knowledge of mortality rates and causes, allowing a better understanding of population threats and stressors and the ability to determine when a situation is "unusual." For cetaceans, main cause of death responsible for large scale events could be divided in natural (diseases, biotoxins, related to ecological and/or behavioral aspects) and due to anthropic activities (chemical spills and related to sound sources). Despite an increase of studies and a better understanding of the main cause of cetaceans' death, more than 50% of these episodes remain unexplained. Herein main causes are very briefly listed.

2.1 Natural causes:

- a) *Dolphin Morbillivirus*: as recently reported in a comprehensive review (2), this RNA virus is responsible for at least 4 epidemic in the Mediterranean Sea and two along the Atlantic coast of US, involving mainly bottlenose and striped dolphins for their greater sensitivity due to a specific route of entry on their lymphocytes. No vaccination protocols are available to avoid infections spread. Other species are involved in epidemics, as fin and pilot whales. Within the Adriatic Sea, only two animals were found positive in the recent years. In case of epidemics, a progressive increase in mortality rate could be observed and it can be reported for several months along an entire tract depending also from marine currents and living populations. Several protocols to detect the virus are described in literature and skilled laboratories should be involved in order to have comparable results: Diagnosis of DMV related disease should consider molecular analyses, pathological and immunohistochemical findings, serological and clinical observations. During an epidemic, about 40% of the examined carcasses could be found positive to DMV and other animals could died for secondary changes related to viral infections.
- b) Biotoxins: UMEs associated with biotoxins from harmful algal blooms have become more prevalent. The majority of recent UMEs have been attributed to toxicity from brevetoxins and domoic acid. Both toxins are produced by algae, respectively *Pseudo-nitschia* (a diatom) and *Karenia brevis* (a dinoflagellate known as "red tide"). Both are lyophilic toxins determining nervous system impairment during acute intoxication, while sub-clinical manifestation could determine immune system impairment. Those algae are regularly reported in Adriatic Sea but

no significant mortality related to toxins production have been reported. Also in this cases, skilled laboratories are necessary to identify the possible involvement of biotoxins.

- c) Biological and ecological factors: even difficult to prove, a certain number of mass strandings are related to ecological factors (sudden meteorological changes as sea temperatures, changes in preys distribution, specific morphological features of the coastline) and/or to social behavior (related to fight and flight response or to strong cohesion of a group which support sick individuals or follow an injured leader).

2.2 Anthropic related causes:

- a) Military sounds related activities: sound sources could be spatially and temporally related with cetaceans mass strandings or unusual mortality events. More in detail, military exercises using active sonars have been associated with several atypical beaked whales' mass strandings since they determine a pathological condition known as "gas and fat embolic syndrome", similar to decompression sickness in human beings. Furthermore, military activities were related to a common dolphins' mass strandings, with the use of helicopters being deemed to be the cause of barotraumas in the inner ear of stranded dolphins.
- b) Civil sounds related activities: during seismic surveys, airguns are used to search oil or gas under the seabed. These very strong sounds emission in the water are considered as a possible threats for cetaceans and many times they have been appointed as causes of unusual mortality events. At the moment there are no pathological evidences that could suggest these possible relation but experimental conditions has shown behavioral changes associated to airguns exposure with an avoidance response both in fishes and in cetaceans. For these reasons, airguns could be considered at least as co-factor in mass strandings if they are spatially and temporally running.
- c) Pollution: generally, unusual mortality events caused by pollution are those related to severe accidents as chemical spills in close basins, determining acute changes and organ failure due to a massive exposure to these contaminants. The best representative event is those occurred in the Gulf of Mexico in 2010, when an oil spills coming from the sea platform "Deep Water Horizon" of the oil company British Petroleum (BP) caused a massive increased of large vertebrates mortality.
- d) Fishery: the impact of fisheries could affect cetaceans population determining severe prey depletion and period of starvation; this situation could be enhance in specific period and with particular fishing gear.

3. THE ADRIATIC SEA

This basin is a narrow and shallow arm of sea delimited by highly inhabited coasts. Within the Adriatic Sea there is a relatively moderate traffic branch towards the northern Adriatic ports. Maritime traffic in the Adriatic includes transport routes for tankers with crude oil to northern Adriatic ports, liquefied gas transport, dry cargo and container ships, chemical tankers and



passenger ships. In addition, fishing vessels, yachts, recreational boats, military and research vessels contribute to the heavy maritime traffic. Such large shipping traffic increases the risk of negative effects on the marine environment, particularly for ballast waters, pollution and oil spill, collision, noise and habitat degradation. Therefore the Adriatic Sea with respect to accidents and casualties is regarded as a high risks area.

Regarding cetaceans' unusual mortality events, 3 UME's have been recently reported by Croatia and Italy. Here below, an analyses of main problem of the Adriatic Sea relatives to cetaceans' UMEs is reported.

2.1 Natural causes:

- a) *Dolphin Morbillivirus*: this virus have been reported twice in this basin. During the first large epidemic (1990-1992) a large increase in striped dolphin mortality have been reported along the Southern part of the Adriatic Sea associated to DMV infection; a second finding was reported during a small scale bottlenose dolphins' UME in autumn 2013 in the Northern Adriatic.
- b) Biotoxins: to the best of our knowledge, no UMEs associated with biotoxins from harmful algal blooms in the Adriatic Sea.
- c) Biological and ecological factors: these factors seem to play a major role in the sperm whales' mass strandings occurred since 1555. 8 pods entered the Adriatic Sea and, not being used to swim in these shallow waters delimited by sandy coasts, they tragically stranded, mainly along the Italian coastlines. Only in the most recent one (September 2014), training and effort by NGOs and Institutional groups allow a successful refloating of some animals. In all the other cases, animals tragically died. Anthropic causes has not been excluded, at least in the last ones.

2.2 Anthropic related causes:

- a) Military sounds related activities: no atypical mass strandings spatially and temporally associated to military exercises occurred in the Adriatic Sea, likely because rarely these events involving submarines are organized within this basin due to its scarce deepness.
- b) Civil sounds related activities: Being is one of the most important areas in the Mediterranean region for oil and gas industry, seismic prospections have regularly continued in search for gas and oil exploitable fields. Despite seismic activities are actively running in the entire basin, no spatially and temporally related active strandings, have been reported at the moment.
- c) Pollution: Given the high intensity of maritime traffic and the importance of the Adriatic for oil and gas exploration, this appears to be one of the Mediterranean regions with the highest potential presence of oil slicks. To the best of our knowledge, only minor events occurred in Italian and Slovenian waters. In Croatian waters no similar event has been reported and we have no information from Albanian and Montenegro.
- d) Fishery: exact data on Adriatic fisheries is difficult to be obtained, as exact data on by-catch. Despite this in the last two years, the continuous monitoring of cetaceans and sea turtles

strandings, showed a temporal and spatial relationship with fishing activities: an increase in stranding rate regularly occurred between september (mainly cetaceans) and december (mainly sea turtles) likely due to an increase of by-catch phenomenon in this period. At least one striped dolphins' UME (2012) have been related to prey depletion in the Adriatic Sea.

4. LEGAL FRAMEWORK

Each country has its own national legislative framework in case of environmental disasters, as chemical spills and major shipwrecks, or cetaceans unusual mortality. Despite national identities, specific international agreements, have been signed to face environmental incidents interesting different countries. These agreements are mainly related to the exchange of equipments, personnel and information, in order to obtain a coordinated response at an institutional level. In these documents, cetaceans are not considered and a joined effort in case of marine mammals' unusual mortality events associated to anthropic causes is included only in ACCOBAMS recommendation.

4.1 *Sub-Regional Contingency Plan for Prevention of, Preparedness for and Response to Major Marine Pollution Incidents in the Adriatic Sea (between Croatia, Italy and Slovenia) (OGRC-T no. 7/2008)*

This agreement for the protection of the environment of the Northern Adriatic Sea was adopted taking into account the Barcelona Convention (art. 9) and its Prevention and Emergency Protocol, with the support of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC). Other Parties could join the plan with the consensus of the three Countries.

The Plan is a mechanism for mutual assistance, under which the competent national Authorities of Croatia, Italy and Slovenia will co-operate in order to co-ordinate and integrate their activities related to prevention and response to marine pollution incidents affecting or likely to affect the territorial sea, coasts and related interests of one or more of these countries, or to incidents surpassing the available response capacity of each of these countries alone. Specific objectives of the plan are defined as follows:

- a) to determine the extent of co-operation among the relevant authorities of the Parties to the Plan, in the field of prevention of marine pollution incidents;
- b) to determine the extent of co-operation for the implementation of the Plan in cases of emergency, between the responsible authorities, at the operational level;
- c) to define the areas of responsibility of the Parties to the Plan;
- d) to divide the responsibilities and to anticipate the transfer of responsibility from one State to another;
- e) to establish the principles of command and liaison, and to define the corresponding structures;
- f) to provide arrangements concerning the operation of ships and aircraft of one of the Parties, within the area of responsibility of the other Parties;

g) to specify the type of assistance which might be provided and the conditions under which it will be provided;

h) to determine in advance the financial conditions and administrative modalities related to co-operative actions in case of emergency.

In order to achieve these objectives, the Parties intend to take the following actions through the implementation of the Sub-regional Contingency Plan:

- develop adequate activities and take appropriate measures aimed at reducing the risks of incidents or the environmental consequences thereof;
- develop appropriate network(s) for the exchange of information concerning prevention of marine pollution incidents;
- develop appropriate preparedness measures and effective systems for detecting and reporting pollution incidents affecting or likely to affect the areas of responsibility of the Parties;
- promote and implement sub-regional co-operation in the fields of prevention of accidental oil pollution from ships, contingency planning, pollution control and clean-up operations;
- implement the necessary measures to restrict spreading and to minimize the hazard posed by marine pollution incidents;
- develop and implement a programme of training courses and practical exercises for different levels of personnel involved in oil pollution prevention and combating.
- develop procedures for increasing regional co-operation.

The Plan define the area of the intervention and the procedures and define also the **conservation of biological diversity** as a “related interest”, as stated by art. 1 of the Protocol Concerning Co-operation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea, to the Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention), adopted at Malta on 25 January 2002.

The Plan describes and defines responsibilities, national competent and operational authorities with protocol and procedures for preparedness and response. The Plan foreseen exchange of information at an Institutional level. Relevant actions included in the Plan are join trainings. Furthermore, the plan define:

- . action of monitoring, with particular reference to sensitive sea areas,
- . the put in place and maintaining of services, as communication networks, meteorological services, pollution resposnes equipments, personnel trained in pollution response activities, vessels assistane and support
- . planning

In case of an emergency, the lead role in the implementation of the Plan in case of emergency shall be assumed by the Operational Authority of the Party whose area of responsibility or area of interest have been affected or are likely to be affected by a pollution incident and who has activated the Plan or requested assistance. The lead role shall be transferred from a Party to another one, when the major part of the pollutant has moved from the area of responsibility of the Party who had initially

requested assistance, to the area of responsibility of another Party who is requesting assistance. The Lead State shall be responsible for:

- surveillance of the pollution
- assessment of the situation
- spill movement forecasting
- reporting
- exercising Operational Command over Joint Response Operations.

Personnel, equipment and other means rendered as assistance by the other Parties within the framework of the Plan shall execute their tasks and duties following the decisions of the Superior On Scene Commander, under the direct operational control of their National On Scene Commanders and the tactical command of their respective team Leaders and unit Commanders.

Finally, the Agreement define response elements and planning and the contingency plan. Within the last point the Plan include the creation of support teams: to support of the On Field Commanders, each Party shall set up its national Support Team, composed of the representatives of various relevant public authorities, national services and industry, including, in particular, the oil and shipping industries. In case of the activation of the Plan, Support Teams shall operate from their respective national Emergency Response Centers. The role of the Support Teams is advisory, and their functions include:

- a) providing assistance in case of the activation of the Plan;
- b) providing advice concerning, in particular, methods and techniques for combating marine pollution, safety of navigation and salvage, marine biology and fisheries, (radio) communications, public information and compensation for oil pollution damage;
- c) providing support and co-ordinating the activities of national public authorities, services and industry which might take part in Joint Response Operations, concerning in particular the provision of personnel, equipment and other resources, logistic support, immigration and customs formalities;
- d) monitoring incoming reports and assessing the situation;
- e) co-ordinating all reporting on the status of the pollution incident to their respective national Authorities.

For financial matters, In case of Joint Response Operations, the Party which requested assistance shall directly cover the following expenses related to the stay in its territory of personnel, equipment and means (including vessels and aircraft) of the assisting Party.

In order to facilitate the movement of response personnel, equipment and other means including self-contained units such as vessels and aircraft, to the place where the assistance is required, the Parties shall act in conformity with the principles laid down in paragraph 3 of Article 12 of the Prevention and Emergency Protocol and shall follow the «Guidelines for Cooperation in Combating Marine Oil Pollution in the Mediterranean» adopted by the Fifth Ordinary Meeting of the Contracting Parties to the Barcelona Convention in Athens on 11 September 1987 (UNEP/IG.74/5), and in particular the following paragraphs:

«The requesting Party will: (...)

– make arrangements for the rapid entry of equipment, products and personnel prior to their arrival and ensure that customs formalities are facilitated to the maximum extent. Equipment should be admitted on a temporary basis and products should be admitted free of excise and duties.

Each Party shall endeavour to make, at the national level, special arrangements applicable in emergency situations, concerning provisions for the rapid granting of entry visas and work permits for personnel, as well as permits necessary for the transit or temporary importation of the requested equipment and material.

The Parties shall designate competent Customs Authorities, responsible for the prompt clearing of customs formalities related to the transboundary movement of response personnel and means in cases of activation of the Plan..

4.2 ACCOBAMS Resolution 4.16 - Guidelines for a coordinated stranded response

In this document, ACCOBAMS underline the importance of a coordinated response in case of chemical spills or epidemics and stress the necessity of sub-regional cooperation. All Member States should at least have an on-scene coordinator body (OSCB) that would contact ACCOBAMS Scientific Sub-Committee and any other relevant institution in the case of a suspected mass-mortality, send data to the Mediterranean Database of Cetacean Strandings, deal with the public and media, ensure that the proper samples are taken, be responsible to obtain all necessary permits and deal with the carcasses. The OSCB should ideally depend on an existing stranding network, a natural science museum, a university or a ministry. It should collaborate with existing national entities related to marine mammal stranding such as active stranding networks and marine mammal research groups, wildlife conservation and rescue centres, aquaria and oceanaria, coastguards, park officials and local authorities. The OSCB should also launch an agreement with universities or medical institutions willing to offer free tomographic examination of the cetacean's head stranded during acoustic operations and with universities or research institutes interested to collaborate on chemical and biological contamination. The OSCB should have all necessary addresses and phone numbers in the case of an emergency as well as a precise protocol to collect samples for research.

Protocols on necropsies, sampling and basic equipment are reported. An efficient contingency plan will be based on the foundation of a national OSCB that will be responsible for the activities and decisions related to unusual mortality events as well as on timely relaying information on their occurrence to the Member States and to the suggested CEUM SubCommittee. The easy and open communication between OSCBs will help determine when a die-off is underway, ensure a timely and adequate intervention and, ultimately, uncover the cause of the die-off and explore environmental factors that may have enhanced its severity. Minimal personal of an OSCB should be one scientist, preferably a marine mammal research veterinarian with good knowledge in the biology of cetaceans and of the different factors involved in cetacean strandings.

5. THE ADRIATIC EMERGENCY TASK FORCE (AETF)



The AETF is a tool of cooperation between Countries facing the Adriatic Sea in order to manage emergencies involving cetaceans and sea turtles. This team is composed by all national emergency task forces (ETF) recommended by ACCOBAMS and other international agreements and by scientific experts and veterinarians with a knowledge in cetaceans and sea turtles biology and medicine. The AETF shall be also a platform to exchange informations and best practices to face unusual mortalities and stranding events in a proper and common way.

Within the NETCET Project, a preliminary work was done to understand if all the countries involved in the Adriatic sub-region have similar structures, equipments and trained personnel to responde in case of emergencies and how build up a cooperation between the Countries in order to respond to any environmental disaster.

Based on the sub-regional contingency plan (point 4.1), Croatia, Italy and Slovenia already agree to exchange, information, technical support, equipment and trained personnel for a joined response in case of emergencies during chemical spills. These countries have also veterinary laboratories and environmental and veterinary administrations and institutions which are officially involved during these events. Furthermore, being in te EU, experts could support local institutions as consultant. These cooperation is not already enhanced with Montenegro and Albania. These two countries do not have an existing contingency plan in case of emergencies, also at national level, and it is not clear the institutions involved during these events.

In order to propose an Adriatic Emergency Task Force, we should consider different levels of participation in term of organization, equipment and personnel. Furthermore, also two different level of cooperation should be taken in consideration: more in detail, there is an institutional level who is considered and regulated by the sub-regional contingency plan (or similar bilateral agreement) and allow a sharing of equipment and skilled professional figures (i.e. coast guard, firemen, civil protections, public veterinarians); the second level is characterized by scientists and experts who can join institutions involved in a prompt response on specific themes.

The Adriatic Emergency Task Force should be considered as a support team for monitoring and giving an immediate response in case of threats to biodiversity and biological resources of the Adriatic Sea in case of chemical spills and environmental disaster; furthermore, this task force could also be involved in atypical and mass strandings or unusual mortality events not considered by the sub-regional contingency plan. In both cases, a transboundary event could be managed with a efficient communication and sharing of knowledge and technical capacity.

5.1 COMPOSITION OF THE AETF

The AETF is composed by members of national stranding networks and emergencies task forces created within national borders. The management, the coordination between all the single Countries and the maintenance of continuous updates and follow-up of participants to the AETF will be ensured by a steering committee: the committee will be composed by a maximum of two contact persons (one for cetaceans and one for sea turtles) for each country in an equal proportion between biologists and veterinarians part of national stranding networks, in order to organize proper

responses to any emergency situation. This persons should be the national On Scene Coordinator Body in case of incidents and mortalities, as stated hereafter in the Contingency Plan.

The steering committee will establish a list of experts, national laboratories and general services involved in marine species strandings. The list of included persons and institutions with their role and competence will be communicated to the competent Authorities. The steering committee is appointed to maintain relationships with competent Authorities and Institutions as with general services involved in response to environmental emergencies.

6. CONTINGENY PLAN

The purpose of the present Adriatic Contingency Plan (the Plan) is to establish, within the existing frameworks and in respect of the National plans, a mechanism for mutual assistance, under which the competent national Authorities of the Countries facing the Adriatic Sea (Croatia, Italy, Slovenia , Montenegro and Albania) will co-operate in order to co-ordinate and integrate their activities related to the response to effect of marine pollution incidents affecting or likely to affect the marina fauna and specifically cetaceans and sea turtles, ne or more of these countries, or to incidents surpassing the available response capacity of each of these countries alone; furthermore, the Plan will be active also in case of other transboundary emergency, as defined by ACCOBAMS documents herein cited and defined in a specific workshop in Monaco (2014, 29th and 30th of October) and, namely, mass strandings and epidemic outbreaks or biotoxins.

6.1 SCOPE AND GEOGRAPHICAL AREAS

Since prevention of eventual environmental disaster is object of specific agreements between the state within the Barcelona convention, while prevention is not included in epidemics or biotoxins exposure, this Plan will consider only those part addressing preparedness and response to marine animals die offs due to these causes whenever an incident causes or is likely to cause marine pollution that can possibly affect one or more Parties and which is of such magnitude that calling on the other Parties for assistance is justified. The incident might be a spill or an outbreak that occursin the area of responsibility of one Party and threaten the area of responsibility of another Party, or an event that does not threaten other countries, but requires countermeasures that are beyond the capacity of the resources available within the affected Party.

The area considered by the Plan is the Adriatic Sea considering on the western coastline the entire Italian line while on the eastern side the coastline involved cover Slovenia, Croatia, Montenegro and Albania. From North to South, the area considers the Gulf of Trieste till the line from Otranto to the Southern border between Albania and Greece.

6.2 DEFINITIONS AND ABBREVIATIONS

For the purpose of this Plan:

Oil means petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products.

Hazardous and noxious substance (HNS) means any substance other than oil, which if introduced into marine environment is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea and adjacent coastal areas.

Pollutant means polluting substances, including both oil and HNS.

Incident means a collision of ships, grounding, fire, explosion, structural failure, incident of navigation, or other occurrence on board a ship or external to it resulting in material damage or imminent threat of material damage to a ship or cargo.

Pollution incident means an occurrence or series of occurrences having the same origin, which results or may result in a discharge of oil and HNS and which poses or may pose a threat to the marine environment or to the related interests of one or more States, and which requires emergency action or other immediate response.

Unusual Mortality Event (UME) a stranding of cetaceans and sea turtles that is unexpected; involves a significant die-off of any marine mammal population; and demands immediate response. Could be related to pollution incidents or oil spills as herein defined, and to other human related activities as those involving sound sources (i.e. military sonar); biotoxins or pathogens outbreaks, as Dolphin Morbillivirus are also considered. Mass stranding events related to other causes (i.e. sick leader, weather and marine conditions) are also included.

Related interests means, according to the Article 1 of the Prevention and Emergency Protocol rated within the Barcelona Convention, the interests of a coastal State directly affected or threatened and concerning, among others: the conservation of biological diversity and the sustainable use of marine and coastal biological resources.

The Plan means the Sub-regional Contingency Plan for the response to major unusual mortality events involving cetaceans and sea turtles concerning Albania, Croatia, Italy, Montenegro and Slovenia.

Parties means the Republic of Albania, Republic of Croatia, the Republic of Italy, Republic of Montenegro and the Republic of Slovenia.

Area of responsibility means territorial sea of the Republic of Albania, Republic of Croatia, the Republic of Italy, Republic of Montenegro and the Republic of Slovenia respectively, within the Adriatic Sea, as established in accordance with the international law.

Area of interest means waters not included in the areas of responsibility, in which occurrence of a pollution incident affects or is likely to affect the related interests of one or more of the Parties.

Lead State means the Party in whose area of responsibility or area of interest a pollution incident has occurred and who has activated the Plan or requested assistance within the framework of the Plan.

Governmental Authority means the designated competent Department having the *governmental* responsibility for dealing with pollution at sea..

Operational Authority (Response) means the designated competent Department having the *operational* responsibility for dealing with marine vertebrate unusual mortalities.

Lead Authority means the Operational Authority of the Lead State.

Emergency Task Force (ETF) means a group of experts on cetaceans and sea turtles or groups of national experts in biological and behavioral aspects of the species, veterinarians skilled in these species, trained personnel of local and/or national stranding networks, reference laboratories as herein named appointed by the State according to national laws and regulations. All these personnel is coordinated by and On Scene Coordinator Body of the leading Party. The ETF should be considered as a support team and have an advisory role within national frameworks and transboundary emergencies.

On Scene Coordinator Body (OSCB) means an officer and/or a specific group of experts appointed by the supreme on scene commander and the national on scene commander. Its role is coordinating efforts on the stranded animals according specific procedures. Other roles and duty has been defined by ACCOBAMS resolution 4.16. With a view to assisting NOCS and/or SOCS, the OSCB as defined could be part of the Support Team. In case of the activation of the Plan, Support Teams shall operate from their respective national Emergency Response Centres.

6.3 DESIGNATION OF NATIONAL OPERATIONAL AUTHORITIES RESPONSIBLE FOR THE IMPLEMENTATION OF THE PLAN IN CASE OF EMERGENCY, AND OF NATIONAL OPERATIONS CENTRES

The responsibility for the implementation of the operational provisions of the Plan in case of emergency and for Joint Response Operations rests with the national Operational Authorities, as defined by the International Agreements and relative Protocols for emergencies rated by the states within the Barcelona Convention. Within the framework of the Plan the responsibilities of the Operational Authorities include those already mentioned in sub-regional agreements.

6.4 MECHANISM FOR ACTIVATING THE PLAN IN CASE OF EMERGENCY

The Plan shall be activated by the Operational Authority of one of the Parties in the following cases:

- occurrence, within the area of responsibility of the Party who activates the Plan, of an UME which threatens to affect or has already affected cetaceans and sea turtles living the area of responsibility of another Party;
- occurrence of an UME within the area of interest, but outside the area of responsibility of the Party who activates the Plan, if in the opinion of the Operational Authority of this Party, there is a reasonable threat for cetaceans and sea turtles living in the area of that Party;
- occurrence, within the area of responsibility of the Party who activates the Plan, of an UME whose severity surpasses the response capabilities of the Party concerned alone.

In the cases of emergency listed above, the Plan shall be activated after consultations with the other Parties concerned. When in the opinion of the Authority of one of the Parties its interests are threatened by a pollution incident which has occurred just outside the area of responsibility of another Party, and when the other Party/ies have not taken appropriate actions to respond to it, that

Party may, after consulting the other Party/ies concerned, activate the Plan. The operational Authority of the Party who has activated the Plan shall immediately inform the Operational Authorities of the other Parties that the Plan has been activated.

6.5 EXCHANGE OF INFORMATION The Parties shall keep each other correctly informed at all times on:

- a) competent national Authorities, responsible at the governmental level for the implementation of the Plan, and on the responsible officers within these Authorities;
- b) national Operational Authorities, responsible at the operational level for the implementation of the Plan in case of emergency;
- c) national Operations Centres;
- d) designated national Emergency Task Force and stranding networks;
- e) directories of experts, trained personnel and strike teams designated by each Party to take part in Joint Response Operation.

The English language shall be used in all communications related to the Plan.

6.6 ASSUMPTION OF LEAD ROLE

In case of spills, the lead role in the implementation of the Plan during emergency shall be assumed as stated by specific sub-regional specific agreements within the Barcelona Convention.

In case of diseases outbreaks every single Countries will have the responsibility within their territory but the coordination of informations shall be assumed by the state with a higher number of stranded animals.

In case of mass strandings, the role will be assumed by the Country where the event occur.

6.7 ETF

With a view to assisting OSCB, each Party shall set up its national Emergency Task Force, composed of the representatives of various relevant public authorities, national services, scientists expert in marine mammals and sea turtles and representatives of response team and emergency centers.

In case of the activation of the Plan, ETFs shall operate from their respective national Operational Authority.

The role of the Support Teams is advisory, and their functions include:

- a) providing assistance to OSCB in case of the activation of the Plan;
- b) providing advice to OSCB concerning, in particular, methods and techniques for rescue operations, stranding response, logistics, data collections, marine and weather forecasts, postmortem examinations and lab analyses;
- c) providing support and co-ordinating the activities of national public authorities, services and stranding networks which might take part in joint response operations, concerning in particular the provision of personnel, equipment and other resources, logistic support, immigration and customs formalities;

- d) monitoring incoming reports and assessing the situation;
- e) co-ordinating all reporting on the status of the UME to their respective national Authorities.

After the termination of response operations, the ETF shall, together with their respective OSCB and national authorities:

- review post-incident reports from the OSCB on the handling of the pollution incident for the purpose of analyzing and introducing recommendations and improvements needed in the Plan and in their respective National Contingency Plans;
- forward to their respective national Authorities relevant reports and recommendations, including OSCB post-incident reports, Support Team debriefing reports and recommendations concerning amendments to the Plan or procedures adopted.

6.8 COMMUNICATIONS ARRANGEMENTS

The communications network established by the Parties shall be used for all exchanges of information pertinent to the implementation of the Plan.

a) *E-mail* shall be used for all communications between the Operational Authorities, OSCB and their respective Support Teams, particularly in case of emergency. *Telephone* could also be used; however, all decisions, information relevant to the situation at the site of operations and, in particular, *requests for assistance and replies to such requests shall be confirmed by e-mail*.

b) *Operational communications* OSCBs, ETFs, team and unit Leaders and other participants in the response operations shall be made by using cellular (portable) telephones and other appropriate means.

c) English language shall be used in all communications related to the implementation of the Plan.

6.9 RESPONSE PLANNING

Response to an UME within the area of responsibility and/or area of interest of each Party shall be conducted in accordance with the provisions of the Lead State.

In order to help the joint response operations to proceed smoothly, the Parties shall inform each other on the relevant parts of their NCPs and, in particular, those sections describing:

- national response organization and regulations;
- resources available at the national level for responding to marine pollution incidents;
- rules concerning rescues, postmortem analyses and animal manipulation;
- logistic support available within the country.

6.10 RESPONSE STRATEGY

The main outline of the strategy which shall be applied by the Operational Authorities of the Parties, in responding to marine animals UME within the framework of the Plan, shall be as follows:

- assessment of the severity of the UME, taking into consideration the following minimum criteria:
 - distribution and numbers of stranded animals

- position at which the incident occurred, if any and type of pollutant involved considering also degree of risk for human life and/or potential health hazard
- type of pathogens possibly involved and potential risk for human health
- weather and marine condition in order to understand possible involvement of other Countries
 - activation of the National Contingency Plan and notification of the other Parties;
 - selection of appropriate response methods and protocols;
 - evaluation of available and required response resources;
 - activation of the Plan and request for assistance;
 - implementation of selected response methods, making use of national resources and resources from assisting Parties;
 - re-assessment of the situation and modification, when necessary, of response actions;
 - termination of response operations;
 - de-activation of the Plan;
 - the return to the country of origin of personnel, equipment and other means rendered as assistance by the other Parties.

7. FACILITIES AND SERVICES

Every countries should define a list of veterinarian with a well define training and knowledge in cetaceans and sea turtles medicines, coordinated by a nationally recognized center. During transboundary emergency situations, the leading country should appoint a coordination team which is able to interact with different facilities and services herein listed.

7.1

In every country, a list of national diagnostic laboratories should be defined in order to have reference facilities for every exams. These laboratories should interact with similar facilities of close countries in the Adriatic Sea in order to exchange and harmonize diagnostic protocols and procedure to have comparable results. More in detail, the following laboratories and methodology should be identified

- a. Virology - *Dolphin Morbillivirus* and *Herpesvirus* (reference laboratories University of Teramo - Faculty of Veterinary Medicine and Padova - Dept. BCA)
- b. bacteriology - *Brucella ceti* (reference laboratories Istituto Zooprofilattico Sperimentale degli Abruzzi)
- c. parasitology - *Toxoplasma gondii* (reference laboratories University of Padova - Dept. MAPS)
- d. biotoxins - domoic acid and brevetoxins (reference laboratories Centro Ricerche Marine Riccione)
- e. toxicology - organo-chlorine pollutants and heavy metals
- f. genetic
- g. forensic pathology (reference laboratories University of Padova - Dept. BCA)

7.2 Experts



A list of experts able to intervene on alive stranded animal should be created and the included persons should be continuously trained. Furthermore, experts on species of cetaceans and sea turtles living in the Adriatic Sea should be identified. Finally, experts on photo-identification and field monitoring should be contacted and they are useful in case of single animal identification.

All these personnel should be coordinated by the on scene coordinator body and, if need, could move to different countries as consultants in case of necessity.

7.3 Meteorological centers

National meteorological centers should be contacted and listed in order to have fresh and continuous update in case of environmental emergencies in order to understand where currents and winds could deliver involved animals. Furthermore, they could give useful information to understand the phenomenon in case of unusual mortality events not related with chemical spills.

8. COMMUNICATION

Since an efficient communication is the basis to share information and for the success of the Plan, Recommendations arise from ACCOBAMS Workshop regarding transboundary emergencies procedures organized in Monaco (2014, 29th-30th October) are adopted. More in detail, to achieve and efficient information exchange, the use of same definition, the adoption of the codes proposed to define different stranding events and the relative approach to be maintained, the application of the suggested terms of reference are considered in the Adriatic Sea to facilitate communications between scientific actors part of the Adriatic Task Force. The codes and communication systems will not interfere with those used by Operational Authorities or other General Services and support teams eventually involved in case of incidents.

9. PROTOCOLS

In case of incidents and/or unusual mortality events of cetaceans and sea turtles, the AETF will apply rules of the Leading Country, considering also the final destination of the animals in respect on European and national legal framework. Also national protocols and procedures will be followed by all AETF's participants; if no official protocol is adopted in the country regarding intervention on sea turtles, cetaceans and management of unusual mortality events, documents are available for both species as adopted by specific international agreements.

10. FINAL STATEMENTS.

The Adriatic Emergency Task Force is a group of scientists (biologists and veterinarians) expert in cetaceans and sea turtles behavior, physiology, rescue and medicine trained to intervene in case of

environmental incidents or unusual mortality events related to pathogens or biotoxins. The AETF will act as support team for Leading Countries in case of chemical spills, as stated within the Barcelona Convention and related sub-regional agreements, since marine animals could be considered as a related interest for countries facing the Adriatic Sea. For these reason, the AETF will act within these agreements and Conventions and within ACCOBAMS recommendation (for cetaceans) in case of outbreaks or similar mortalities.

The present proposal was compiled by Dr. Sandro Mazzariol

