

## Network for the Conservation of Cetaceans and Sea Turtles in the Adriatic

The Netcet Project is financed by the IPA Adriatic CBC Programme and more specifically within the Priority 2 "Natural and Cultural Resources and Risk Prevention".

The general aim of this Cross-border Cooperation Programme is strengthening sustainable development capabilities of the Adriatic region through a concerted strategy of action among the partners of the eligible territories.

Web site: [www.adriaticipacbc.org](http://www.adriaticipacbc.org)

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## 1. The mass stranding of Sea Turtle along the North Adriatic coasts



The mass stranding event that took place along the North Adriatic coasts between October and December 2013, has known no precedent in history. A total of 286 animals were found (1 still alive at the time of stranding), concentrated into limited geographical areas and time periods. Four large groups of arrivals can be defined, most probably related to the direction of winds and marine currents:

65 animals between 1 October and 2 November just south of the Po River (44°42'00"N 12°11'00"E);

36 animals between 1 October and 11 November in Grado (GO - 45°41'00"N 13°24'00"E);

166 animals between 7 November and the end of December around Rimini (44°03'00"N 12°34'00"E);

39 animals between 12 November and the beginning of December around Ancona (43°37'00"N 13°31'00"E).

No significant strandings took place along the Eastern coasts of the Adriatic basin, as Blue World, MEC and SINP (Croatia) and Primorska University (Slovenia) confirmed, nor in the Southern part, as reported by APAWA (Albania) and the University of Bari

The Cetacean Foundation and WWF – Marine Protected Area of Miramare immediately started a collaboration with ASL and IZS (agencies of the Italian Health Ministry) in their regions, respectively Emilia Romagna and Friuli Venezia Giulia; they also turned to the Universities of Padova and Bologna to perform necropsies.

The biological aspects of the phenomenon are studied by the Natural History Museum of Venice and Oceanographic Institute of Trieste, which is also investigating the relationship between tidal currents, winds and the location of the strandings in each period (ECHO group), in collaboration with ARSO (Slovenian Environment Agency).

Necropsies revealed common consistent lesions in most of the animals. Excluding those animals in which by-catch signs were evident (their number being consistent with a nearly constant fishing effort in the North Adriatic basin), inflammatory lesions of the intestine (severe diffuse catarrhal haemorrhagic enteritis) and severe multifocal oedematous-haemorrhagic lesions on pectoral muscles and ventral part of the neck were evident. The lesions are attributable to the deep alteration of vessel wall permeability, leading to fluid and/or blood spill, as observed in some bacterial, viral or fungal infections or some intoxication. Since animal size varied between 20 and 115 cm of CCL, the initial hypothesis linking the cause of death to an alimentary source left place to a more probable idea of the presence of a biological (algal?) or chemical toxic substance in the water, in limited marine areas, also considering that decomposition conditions of carcasses were nearly uniform in each group. Since there have been no relevant differences in principal oceanographic parameters in the basin - as referred by ARPA (Regional Environment Protection Agency) - neither in the period in question nor in previous periods, apart from a mild

delay in temperature decrease in the waters of the Gulf of Trieste in October, we can hypothesize that geological prospection which took place in Croatian waters, just before the beginning of the stranding event, could have induced the animals to move, maybe concentrating into limited areas in the sea. However, no sound wave-related lesions, however, were found in the carcasses during necropsies.

Unfortunately the long term impact of this event upon the population equilibrium seems to be tragic: 49% of the dead animals were sub adult and 26% adult, so the next reproductive seasons are going to be greatly affected by this loss.

Finally, two other mysteries are still to be solved: at the University of Padova, the routinely performed bacteriological exams of the intestines of the animals submitted to necropsies, indicated the complete sterility of the organ in the 50% of cases. Moreover, in more than a half (7/10) of the animals from Grado the presence of round structures, 7-10  $\mu\text{m}$  long, were observed in the faeces during parasitological exams. Initially thought to be algae, and thus somehow correlated to the cause of death, these “corpuscles” are still to be identified.

Hoping to succeed in giving a solution to this mystery, many analyses are still to be performed on the collected samples, like toxicological exams from the livers, for principal toxic environmental agents of both biological and chemical origin.

*Lisa Poppi - University of Padua*

## **2. First members of the NETCET City Network: Adriatic Cities Together for Cetaceans and Sea Turtles**

One of the main purposes of the NETCET project is to enhance cooperation and strengthen networking among cities involved in sea turtles/cetaceans conservation throughout the Adriatic. The NETCET City Network, foreseen within the NETCET project, is aiming at raising awareness of cities on their role for the conservation of sea turtles and cetaceans. Adriatic Cities participating to the Network commit themselves to inform the general public about the threats for these endangered species and

proceed to reduce directly the risks for this marine animals (for example promoting the speed reduction of boats in the area with cetaceans and sea turtles).

We are very happy to welcome 4 new cities in the NETCET City Network: Pula, Pescara, Numana and Kotor!



**Pula-Pola (Croatia)** was the first city to become member of the NETCET City Network after Mayor Boris Miletic signed the Memorandum of Understanding together with Environment Deputy Mayor of the City of Venice, Gianfranco Bettin. Pula is the largest city in Istria County, Croatia, situated at the southern tip of the Istria peninsula. The city has a long tradition of shipbuilding, tourism, fishing, but also of nature protection. Thanks to Aquarium Pula in Fort Verudela the city offers exhibitions, educational and conservational activities, and is interested in continuing to promote actions regarding the education, information and consciousness of the presence and conservation of cetacean and sea turtles.



Since 2001 the city of **Numana (Italia)**, thanks to its Civil Protection Service (Environment), is carrying on an important activity of safeguard and assistance of big marine vertebrates with a particular attention to sea turtles and cetaceans living in the Adriatic. It was thus natural for Mayor Marzio Carletti to sign the adhesion of Numana to the NETCET City Network. The project activities comply perfectly with those started years ago by Numana in range of proper actions directed to the protection and conservation of cetaceans and sea turtle.

During the XV Forum of Adriatic and Ionian cities taking place in Brindisi last month, the City of



Venice European Policy director had the pleasure to present the NETCET City Network concept to the Forum participants: This was an occasion for the Forum President, Luigi Albore Mascia, Mayor of **Pescara (Italy)** to sign the Memorandum of Understanding. Other cities expressed their interest to join the network during this meeting and we are eager to welcome them too! The City of Pescara is the governing institution of an area that occupies a central position in the vast urbanised area defined as "Pescara metropolitan area" and, with its 125.000 inhabitants, constitutes a developing factor for regional scale initiatives. Through the Animal Protection Department, the City Council favours the respect and tolerance towards animal species with the aim of helping men and animals to live together and, also, of protecting public health and environment. It is, in fact, involved in interventions and initiatives focused on the ecosystem conservation. Pescara has released over 50 sea turtles in 2013.

On the 17th January 2014, Mr Tvrtko Crepulja, Vice-President (Deputy Mayor) of the Municipality of **Kotor (Montenegro)**, signed the Memorandum



of Understanding between the City of Venice and the City of Kotor and formally joined the NETCET City Network. Representatives of the Institute of Marine Biology presented the various activities realised within the NETCET project, as well as project goals that have yet to be achieved. The Municipality of Kotor will be involved in awareness-raising and will take part in activities

that will directly lower the risks threatening these marine animals. Kotor is a coastal town located in a secluded part of the Gulf of Kotor. The city has a population of 13,510 and is the administrative center of Kotor Municipality. In recent years, Kotor

has seen a steady increase in tourists, many of them coming by cruise ship.

We are expecting other cities to join the network in order to promote the role of cities in the conservation of Cetaceans & Sea Turtles (C&ST) in the specific context of the Adriatic.

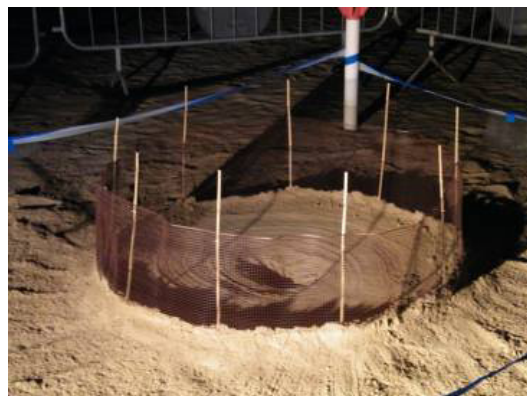
Being part of this network will give cities the immediate possibility to inform and publicise any current or planned activity related to sea turtles and cetaceans on the NETCET project and City of Venice websites and to consult the NETCET Forum (<http://netcet.forumfree.it/>) for any scientific and information sharing. Each interested city can participate to the future elaboration of common strategies for the conservation of sea turtles and cetaceans which will be presented at the Venice Final Conference in July 2015 where they will be invited.

For more information on how to join the Network, please visit the project website at the following page: <http://www.netcet.eu/city-network> or send an email to the project coordinators: [netcet@comune.venezia.it](mailto:netcet@comune.venezia.it)

*Carole Maignan – City of Venice*

### **3. Sea Turtle nesting site on the Italian Adriatic Coast: an Extraordinary Event!**

The loggerhead turtle (*Caretta caretta*) nesting is a very unusual event along the Italian coasts, and regular nesting sites are even rarer. For this reason, when on the last 15th September the Centro Studi Cetacei Onlus (Italian Association for the study of marine Mammals and Reptiles which is cooperating with the City of Pescara for the implementation of the NETCET project activities), in collaboration with WWF Abruzzo and the Protected Marine Area “Torre del Cerrano”, identified a nesting site in Roseto degli Abruzzi (Teramo), along the Adriatic coast, everybody was pleasantly surprised: of course, it was an extraordinary event!



The day before the nest discovering, one little sea turtle, only 7 centimeters long, was found by a lady walking on the shore. She immediately informed the Coast Guard and the animal was hospitalized at “Ospedale delle Tartarughe – Carmine Di Silvestro –” located in the “Capitaneria di Porto” di Montesilvano (Pescara), and managed by Centro Studi Cetacei Onlus. Then, other 15 small sea turtles suddenly started to come out from the sand directed to the sea, under the incredulous eyes of the bathers. After these episodes, the volunteers of Centro Studi Cetacei Onlus, WWF Abruzzo and Protected Marine Area “Torre del Cerrano” started to monitor the area 24h and successfully identified the nest. They found eggs inside it and controlled the area night and day, waiting for climbing up events. Through measurement probes applied outside and inside the nest, temperature values were recorded and other data were collected. Turtle beach climbing up events took place during 10 days, mainly at night, between 15th and 26th September 2013 and more than 20 turtles reached the sea safe and sound.

The finding is very important because it is the first documented nesting site in the Italian Adriatic coast at these latitudes. It also shows the value of the Adriatic beaches for reproduction and protection of this species, even if in summer there is a constant presence of tourists in the area. In fact, beach climbing up occurred, in spite of the fact that human pressure is quite strong in this beach section, due to bathing use of the area during the day.

On the 21st of September, the turtle hospitalized at Centro Studi Cetacei has been released back into the sea, among curious and excited adults and children.

*Rosalia Montefusco - City of Pescara*

## 4. Activities in the first two NETCET rescue/rehabilitation centres: Numana (Italy) and Losinj (Croatia)

### Rehabilitation pool for Sea Turtles in Numana (IT)

A pre-release area managed by the Fondazione Cetacea Onlus has been created in the waters of Numana (AN), thanks to funds from the European project NETCET (IPA Adriatic CBC Programme) and in collaboration with the Marche Region Network for the conservation of sea turtle (*Caretta caretta*) and the Municipality of Numana. The area was named "Caletta delle Tartarughe" (Turtle Cove), referring to the name given by the population of Numana.



Specimens that have been found alive but in trouble and who had problems of various kinds, like for example wounded because of fishing or leisure boat activities, or situations with marked debilitation, should be first hospitalised at the rescue centre in tanks housing, and then the actual recovery of sea turtles' functionalities must be verified in a pre-release area with a period of rehabilitation, before release into the sea.

For this reason the protected area was set up in the sea, with an area of 1224 m<sup>2</sup>, enclosed by a net of 114 metre long and 3.5 m high, located next to a coastal area of the City of Numana where, from 21 June 2013,

began an experimental project which provided maintenance for a short period of time (one to two weeks), of some specimens of sea turtle treated at the center of the Fondazione Cetacea in Riccione.

A period of rehabilitation in the sea enables sea turtles that have been hospitalized to have greater mobility than in a normal tank housing, and is therefore a valuable tool to test the repossession of the sea turtles features that are essentials for survival in the natural environment before the final release.

It is possible, in fact, to evaluate a series of behavioral parameters useful to define the state of health of the animal and its complete recovery through the analysis of its ability to swim and move regularly along the entire height of the water column, stay in the lower part and be able to feed.

During this first year, 5 specimens were placed in rehabilitation area, but for only 3 of them were gathered enough useful data for the statistical analysis.

The turtles immersed in the pre-release area, were observed by trainees and volunteers from the beach remaining in the water for 12 hours a day, with the exception of days with adverse weather conditions.

It was thus possible to collect data about the duration of apneas and on the behavior of these animals in an environment very similar to the natural one.

The results were interesting, such as the lengthening of apnea duration as the number of days spent in the sea increased and a more active attitude with respect to the behavior in the tank. This confirms the validity of this tool as the final step of a rehabilitation path.

The area has attracted much attention from tourists and citizens of Numana with a continuous passage in front of the beach, where was exhibited information about the NETCET project and about *Caretta caretta*. The initiative's success was such that the town of Numana has decided to promote the city as "Numana, turtle town" and join the NETCET City Network.

*Valeria Angelini - Fondazione Cetacea Onlus*

## Rescue centre in Mali Lošinj (HR)

The President of the Republic of Croatia, Mr Ivo Josipović, opened the Sea Turtle Rescue Centre (TRC) in Mali Lošinj on the 19th of July 2013. The Centre opening was co-hosted in cooperation with the City of Mali Lošinj, Mali Lošinj Tourist Board and Jadranka Group, which provided the building of the TRC in the pool area of their Hotel Vespera. The internal construction and equipping of the TRC was funded through NETCET project.

The Sea Turtle Rescue Centre is a place where injured sea turtles get all the help they need. It consists of an operating room with an intensive care pool and an area open to the public, which has three recovery pools and visitors information space. Sea turtles are released upon recovery and some of them will be tagged for future monitoring. The tags will enable us to track their movement, observe their recovery and learn more about the biology of these mysterious reptiles.

The first "patient" we had in the Sea Turtle Rescue Centre was a young female loggerhead sea turtle named Sansego. It was found floating on the sea surface close to the island of Susak (in Italian Sansego). Sansego was quickly transferred to the Sea Turtle Rescue Centre, where it was examined by the local veterinarian. He established that the problem was caused by gas build-up in the



intestines which can occur as a reaction to stress. The veterinarian suggested Sansego stayed in for a few days of observation. In spite of the short stay in the Centre, the turtle gained more than a few fans asking about her progress on a daily basis. In the beginning, she wasn't very interested in the food we were offering, but after three days she was hungry and ate everything on the menu. After five days, Sansego was released from the nearby Borik beach. The media showed great interest for this event as well as the tourists gathering on the beach.

Another important role of the Sea Turtle Rescue Centre is education. All sea turtle species are protected by Croatian law and included in the IUCN (International Union for Conservation of Nature) Red list of Endangered

Species. Our mission includes making it easier for the public to understand the reasons for conservation and protection of sea turtles. There are several touch screen applications in our Centre providing information to visitors. Educational boards provide information about the biology and anatomy of sea turtles as well as the threats they encounter. It is possible to watch videos of sea turtles that were recorded during research. We have a team of biologists and biology students willing to give their best to answer your every question. It is even possible to observe the sea turtles through the transparent pool walls. This season, that was rather short, we had 900 visitors and we hope this is only the beginning of public interest in sea turtles.

*Paula Počanić - Blue World Institute*

## 5. Cetacean photo ID survey in Montenegro

Boat based photo ID survey on cetacean populations was performed for the first time in Montenegro in the spring and summer period of 2013 within the framework of the NETCET project. The three-member crew of the Institute of Marine Biology was trained by the experts from the Croatian Blue World Institute in the basic photographing techniques and the identification of individual dolphins according to specific markings (nicks, scars, natural colouring, etc.) on their fins and bodies. Even though the frequent engine trouble didn't allow the full realisation of the planned 45 days of fieldwork, the crew managed to cover almost 3,000 km within the Montenegrin waters, from the Boka Kotorska Bay and border with Croatia in the north to the estuary of Bojana River and Albanian border to the south. Of the 26 completed trips, 15 resulted in dolphin sightings. Most dolphins were sighted in the open waters of the Adriatic, within the Montenegrin territorial waters and two semi-regular groups were frequently encountered, one in front of the popular tourist village of Petrovac (near the city of Budva) and the other group inside the Boka Kotorska Bay.



Several sea turtles were spotted during the photo ID surveys, as well as large pelagic fish like Bluefin tuna, Atlantic bonito and swordfish. Along the standard three-member crew, researchers were occasionally joined by students and foreign scientists. Plans for the 2014 include finishing the photo-identification of dolphins from existing data-base, and with the planned purchase of a new four-stroke outboard engine, continuation of the survey throughout the coming spring and summer.

Zdravko Ikica - Institute of Marine Biology, Kotor

## NEWS IN BRIEF

### Next partner meeting in Chioggia – March 2014



The next partner meeting will be held in Chioggia (Italy) in March 2014, hosted by ISPRA. The event will be an useful occasion for the NETCET partners to evaluate the already achieved results and planning the next steps to realize the project's objectives.



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