

## A Sea Turtle Hospital from Scratch: An Illustrated History of the ARCHELON Rescue Centre in Greece

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Since its foundation in 1983, ARCHELON recorded instances of injured sea turtles in Greece. Most of these cases were left unattended in the absence of any provision or knowledge in the country to take care of these animals. In some instances, ARCHELON members and friends provided basic treatment in their homes (Fig. 1A) or in swimming pools (Fig. 1B). Such treatments were neither sufficient nor could last for long, and turtles were returned prematurely in the wild before acquiring a proper or complete recovery.

Injured turtles, stranded on beaches, were usually reported by citizens to Coast Guard stations around Greece, and this created a problem for the Coast Guard as they did not know what to do with the injured turtles. To assist solving this problem, in 1986 ARCHELON prompted the Ministry of Mercantile Marine, the supervising authority of Coast Guard, to issue a circular providing basic instructions for handling injured turtles. The circular, drafted by ARCHELON and enriched with drawings of the three sea turtle

species encountered in the Mediterranean, provided also contact details of ARCHELON members and friends, residing in various parts of Greece, willing to assist the Coast Guard in this unusual task. These persons, being familiar with sea turtles as most of them had participated in ARCHELON's summer projects, supported the Coast Guard in the collection and treatment of injured turtles, with the assistance of local state veterinarians.

By 1991, a rudimentary Sea Turtle Rescue Network had been developed throughout Greece (Nantsou & Antipas 1992), which was expanded after the full involvement of the Coast Guard in 1992 (Kopsida et al. 2002; Panagopoulou & Tsaros 2012). Some injured turtles (six in 1993), not possible to be treated locally, were sent at the then Hellenic Wildlife Hospital on the island of Aegina (Nantsou & Antipas 1992) but this facility, organized to treat primarily birds and terrestrial animals, did not have water tanks and consequently some unorthodox solutions were sought (Fig. 1C).



**Figure 1.** Turtle treatment before the creation of the Sea Turtle Rescue Centre. A: In a wash tub. The water was brought from the sea in buckets together with live crabs to feed the turtle. B: In a hotel's seawater swimming pool with help from a local vet. Note the makeshift shade at the pool corner where the turtle retreated. C: In a shallow pen at sea, where a local fisher kept his boat, close to the Wildlife Hospital in Aegina. The opening of the pen to the sea (not shown) was closed with stones to prevent the turtle's escape.





**Figure 2.** A: On 27 May 1994 two very old train wagons (weighing 12 tons each) were transported and mounted on rail track, which was installed previously. B: By November 1994 the two train wagons were almost fully renovated with help from ARCHELON members and volunteers.

Injured sea turtles found in Rhodes Island have been treated, since 1991, at the Aquarium of the Hydrobiological Station of Rhodes (Corsini 1996). However, this facility could only handle a limited number of turtles, and not from other areas.

Shortly, the social requirement for a proper sea turtle hospital in Greece became pressing, taking into account the extensively improved public attitude in favour of sea turtle conservation in the 1990s, which instigated people and mass media to frequently report incidents of injured turtles and to stress the need for their proper treatment and welfare.

Under these circumstances, ARCHELON undertook the burden to create such a sea turtle hospital. The first question was “where?”. After toying a little with the idea to have it close to one of the nesting areas, we finally decided that the coastline around Athens’ greater area (Prefecture of Attica)

was a better option. The main advantage of this choice was the availability of public transportation means (bus, train, boat, and airplane) that could promptly convey injured turtles from all over Greece. Members of ARCHELON started searching the coastal municipalities around Athens greater area for an appropriate site or an existing facility that could host a sea turtle rescue centre.

The Municipality of Glyfada, a large seaside peripheral town about 20 km from the centre of Athens, through its then Mayor Theodoros Spondylidis, offered a piece of land by the sea, about 2,500 m<sup>2</sup> (37.8639°N, 23.7417°E), near the yacht marina of the suburb. Architect Nikitas Patiniotis, member of ARCHELON with a personal interest in aquaria and wildlife, drafted a technical proposal and secured the mayor’s offer by obtaining an official decision from the municipal council on 4 April 1993 (Decision



**Figure 3.** A: The first injured turtle arrived before the installation of pools, and sea water was transferred in buckets. B: Illustrator Adam Carnegie painting the mural showing Mediterranean coastal wildlife.



No 80/1993), which was approved on 31 May 1993 by the Prefecture of Attica (Decision No 12684/1993). In the meantime, for the purpose of obtaining more knowledge on the requirements of a proper sea turtle rescue centre, Nikitas visited (5-9 May 1993) the Turtle Hospital in Marathon, Florida Keys, USA.

Upon his return, Nikitas designed the basic structures of a sea turtle rescue centre and arranged to obtain two old train wagons from the Hellenic Railways for housing the basic quarters, since no buildings were allowed in this area and only movable structures could be installed (Fig. 2A). Under the guidance of Nikitas, construction works started towards the end of the 1994 nesting season, to gain the help of volunteers that were returning from ARCHELON's field projects (Fig. 2B).

The first injured turtle –an adult male, named “Odysseus” – arrived on 26 August 1994, from western Greece before the finalization of the basic constructions, and it was treated in a children’s plastic swimming pool (Fig. 3A).

Recognizing the value of public awareness and environmental education, two murals were painted in one wagon by the artist volunteer Adam Carnegie, one showing coastal wildlife (Fig. 3B) and the other a hatchling heading into the sea. This wagon, with the addition of a photographic display, was used during the first school

visits that started in the following year (1995).

The Municipality of Glyfada assisted greatly in the construction works by making the sewage system and creating the entrance to the RC from the adjacent road. Of note, the Municipality provides until today free water and electricity for the Rescue Centre (RC).

In December 1994, a wooden deck was constructed to externally connect the wagons and to allow people to view the turtles in the pools (Fig. 4A). Soon, one large (5 m diameter and 35,000 l volume) and two smaller (2 m diameter and 2,600 l volume) polyethylene pools were established in front of the two renovated wagons (Fig. 4B).

With these works our small budget was exhausted, and in order to draw funding from the Ministry of Environment we decided to inaugurate prematurely the RC, i.e. before completing the basic constructions. The official inauguration took place on 5 June 1995 (World Environment Day) in a memorable event with speeches from the General Secretary of the Ministry of the Environment, the Mayor of Glyfada and myself the then President of ARCHELON. Before the arrival of officials, and since the pools were not connected with the sea, a water-carrying vehicle from the municipality had to fill with sea water the larger pool where



**Figure 4.** A: The renovated wagons with the wooden deck, under construction, connecting them. The circular construction on the left is the base of the large pool (December 1994). B: The three large polyethylene pools. They have subsequently needed to be covered externally with concrete blocks for additional strength (since March 1995).



we put a turtle we had under treatment in one of the wagons. Needless to say, that the inauguration event resulted in a good lump sum from the Ministry to complete our basic plan, with first priority to connect the pools, through pumps and filters, with the sea. Thereafter, the RC was open to the public during certain hours per day, and visitors had the unique opportunity to observe a protected species that was temporarily in need of our care.

In the meantime, a veterinarian practicing in Glyfada, Dr Kostas Dimitriadis, much interested in our work, started to assist voluntarily and at the same time to learn many worthy facts about sea turtles, with the help of some classical reptile medical books which ARCHELON readily purchased (Frye 1991; Mader 1996). Our vet provided, at his clinic, free treatment of injured turtles and blood analysis facilities. He also performed surgery, whenever needed (e.g., during 1999 he performed 15 surgical operations) for free. Radiographs were carried out at another nearby vet clinic. Turtle admissions started to grow as the RC became known to the public and the authorities. Detailed rehabilitation and medication protocols were drafted with the vet's help. The set protocols were frequently adapted to new data from our growing experience as well as from international literature and meetings.

In 1996, with the above-mentioned Ministry funds, we acquired three more old train wagons and renovated them. One

wagon was later equipped with small polyethylene tanks and used for housing turtles in need of intensive care or for turtles that stayed during the winter (Fig. 5A). Another wagon, modified with kitchen, toilet and shower, was used for the accommodation of four volunteers, necessary for the 24h-7d human presence at the RC. The third wagon played the role of a reception and display/shop for visitors.

On 30 October 1997 the RC's Environmental Education Program, was officially inaugurated on site. The educational program had the approval of the Ministry of Education and at the start of each schoolyear the Ministry sent a circular to schools all over Greece suggesting a visit to the RC (Kremezi-Margaritoulis 1998). The schools arranged appointments and usually every working day one or two schools were at the RC to follow a standard program including a slide show and a guided tour.

The operation of the RC augmented greatly ARCHELON's image to the authorities and to the public. Only in 1998, we had 28 visits of mass media (mostly TV channels) and we issued 25 press releases taking advantage of the histories of admitted turtles and the releases of the recovered ones. The increased publicity assisted our efforts to attract private donors and recruit volunteers but also it increased turtle admissions. In the year 2000, the RC handled 60 turtles and, to relieve this heavy load, three non-



**Figure 5.** A: The intensive care wagon (2004). B: The RC “ambulance” taking an injured turtle from the bus terminal in Athens (2011).



releasable turtles (their injuries meant they would not survive in the wild) were sent to aquaria in England. Improvements in the operation of the nationwide Rescue Network (e.g., installation of a 24h-7d telephone number for reporting injured turtles) brought about the prompter transport of turtles to the RC (Fig. 5B).

In 2000 and 2001 eleven medium-sized pools were set outside and connected to the seawater installation through a new pump. A donated large container was equipped with freezers and modified to be used for indoor treatment and necropsies as well as for storing medication and food for turtles. Most of the turtle food (fish, squid, etc.) were donated by fish mongers in Glyfada.

In 2002, a system for continuous circulation of sea water was installed with the financial support of a LIFE project. This was a great improvement because during wintertime it prevented the water temperature in the outside pools from falling below 16°C, which is well above the threshold temperature for loggerheads in the Mediterranean (Hochscheid et al. 2007). The operation of the system was

tested in a cold spell when the RC was covered in snow (Fig. 6).

In 2004, our veterinarian and his colleague visited Marathon Turtle Hospital in Florida to update their knowledge on new methods of sea turtle rehabilitation. Taking advantage of this, and assisted by the provisions of the LIFE project, we organized in Glyfada a Mediterranean Workshop on Sea Turtle Rehabilitation (18-21 November 2004) (Fig. 7A). In 2005, another container was acquired, through a donation, for the needs of the environmental education program (Fig. 7B).

To attract donors, we organized a second (!) “inauguration event” in June 2005, which included several manifestations (Fig. 8A, 8B). By the end of 2005, the RC had 20 pools, connected with the continuous water circulation system, plus some spare ones.

In 2006, a large tent was set outside for the needs of the educational program (Fig. 9A) and for organizing various events. The educational program was now fully-fledged with more than 10,000 pupils visiting the RC per year.



**Figure 6.** During these cold days, the air temperature was -2°C, the sea surface temperature was 16.3°C and the temperature in the outside pools did not fall below 16°C. The pools inside the intensive care wagon, not connected to the continuous water flow, had similar water temperatures thanks to underwater electric heaters.





**Figure 7.** A: More than 30 colleagues specialized in sea turtle rehabilitation, from several Mediterranean countries, convened in Glyfada to exchange views on practical veterinarian matters, and on ways to improve facilities and rescue networks. B: Visiting schoolchildren would receive first a live presentation and slide show in the new container, before being allowed to view turtles in the pools.



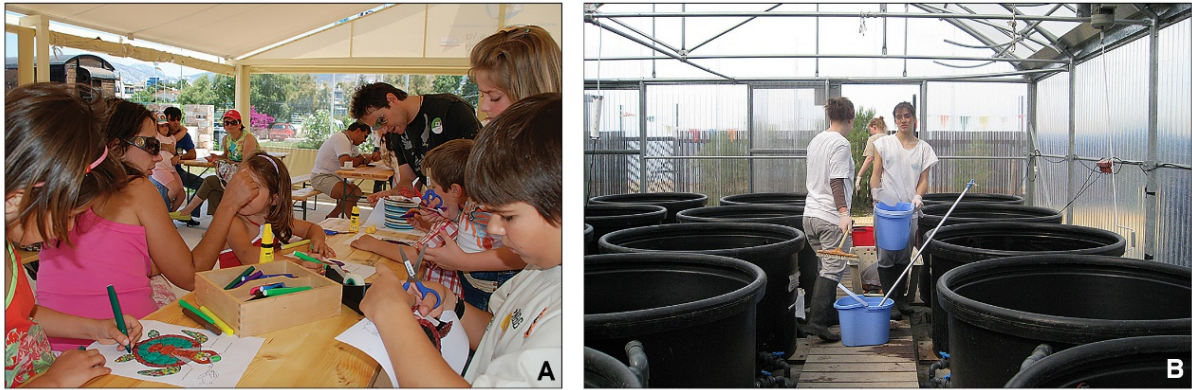
**Figure 8.** June 2005. A: Dr ALAN Rees explaining to visitors the use and benefits of satellite tracking. B: Groups of visitors viewing turtles in the pools from the wooden deck constructed around them.

In 2007 two more train wagons were acquired for storing materials and for various supporting facilities. Now the RC featured seven train wagons in total. In 2008, a continuous increase of injured turtles necessitated the installation of more 20 small pools, which were covered with a “greenhouse” construction, to improve thermal conditions during the cold months (Fig. 9B).

The RC gained national and international recognition and was visited by well-known personalities in the environmental and nature-conservation scene (Fig. 10A). Also, the RC was used frequently to host various environmental meetings where the participants could be inspired by the nearby turtles under rehabilitation.

As mentioned before, all surgery operations were performed at the vet’s premises, nearby the RC. The long-standing goal to have our own surgery unit was eventually fulfilled in 2018. In that year, with financial assistance from the Green Fund of the Ministry of Environment and the LIFE project EUROTURTLES, we managed to install a proper surgery unit in a specially designed container that included all necessary surgical equipment (Fig. 10B). Ever since, veterinarians and trained personnel can carry out surgical operations and perform daily treatments for all turtles within the RC. Since 2019, a close cooperation was developed with foreign veterinarians, members of the Wildlife Vets International (WVI), with objective to further improve rehabilitation practices.





**Figure 9.** A: Environmental education activities under the large tent (2007). B: The 20 small pools inside the “greenhouse”. Note in the top right corner of picture the crane for lifting the “heavy” turtles (2009).



**Figure 10.** A: Welcome ceremony in honour of Dr Jane Goodall who visited the RC in December 2016. B: The brand-new surgery room in the specially designed container (2018).

Today (2024), seven renovated train wagons and three movable containers comprise the main structures of the RC that are used for surgery, preparation of food, public exhibition and shop, presentation and meeting rooms, volunteer housing, offices, and storerooms. The installed pools are now 42 in total, of which six are larger and set outside for the final preparation of the recovered turtles before their release, eight are assigned for intensive care, and 28 for ordinary care. The intensive care pools and 20 of the ordinary care tanks are set under two “greenhouse” installations which provide warmer temperatures in wintertime (Fig. 11).

In all years, volunteers played an important role in construction and maintenance works at the RC, in the turtles’ admissions to the RC from the transportation terminals of Athens and Piraeus, in the everyday treatment of turtles, in the cleaning of pools, in

preparing the food for turtles, in guiding and informing visitors and schoolchildren, and finally in the release to the wild of the recovered turtles. Volunteers trained especially in turtle treatment comprised the so-called Rehabilitation Team, which assist the vets and complete their work.

In the field of research, the RC collects data on turtle injuries for assessment of threats at sea (Panagopoulos et al. 2003; Margaritoulis et al. 2007) and in 2018 cooperated with the Hellenic Centre for Marine Research, in the context of the European program INDICIT, to contribute to the quantification of micro plastics detected in dead turtles (Digka et al. 2020).

The presence of live turtles makes the RC premises an ideal location for training people in handling turtles and this is frequently realized in seminars for the nationwide Sea Turtle Rescue Network as well as for training field leaders and assistants of ARCHELON projects. Various





**Figure 11.** Aerial view of the ARCHELON RC in 2019 (Photo: Jarne Surmont). The second “greenhouse” is not in the picture as it was constructed after 2019.

seminars and workshops are occasionally organized at the RC concerning rescue of turtles during oil pollution incidents and other threats.

Until 2023, the RC has been operating under a temporary permit by the Ministry of Agriculture because specific legislation for wildlife hospitals in Greece was lacking. Following the recent issuing of such legislation, containing detailed specifications which had to be fulfilled, ARCHELON was finally granted a proper permit (No 54340/1691/17-5-2023) for the operation of its RC in Glyfada.

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