MARINE TURTLE CONSERVATION IN THE MEDITERRANEAN

Update Report on Marine Turtle Conservation in Zakynthos (Laganas Bay), Greece 2009

Submitted to:
The European Commission, DG Environment
The 29th Meeting of the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)
Greek Ministry of Environment, Planning and Public Works
Management Body of the National Marine Park of Zakynthos

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MEDASSET
The Mediterranean Association to Save the Sea Turtles

15th of December 2009
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1. Background

Poorly planned development catering to the increasing tourism business in the 1980s, has created major problems in managing the nesting beaches of the endangered loggerhead (Caretta caretta) at Laganas Bay, Zakynthos. With the area being the most important loggerhead nesting site in the Mediterranean, its protection has been a priority. Since 1983, MEDASSET has lobbied the Greek Authorities and the European Commission (EC) for effective protection of the nesting beaches in Laganas Bay on the island of Zakynthos, Greece, which lead to the Presidential Decree providing the constitution for the Zakynthos National Marine Park (ZNMP) in Laganas Bay in 1999. (See section 2 for a brief timeline).

Environmental organisations have played a key role in regulating the situation and in achieving the constitution of the ZNMP:

- ARCHELON, since 1983, carries out monitoring of the nesting beaches and scientific assessment (with the applicable permit issued by the Park Management), in situ awareness raising and educational activities (on beaches, hotels and sea-turtle spotting boats).
- WWF Greece acquired the land behind Sekania beach in 1992 to prevent development of the highest density nesting beach and to carry out scientific assessments. With ARCHELON, it is alternately represented at the ZNMP Board of Management.
- MEDASSET undertakes continuous lobbying of the ZNMP Management, the Greek Ministry of Environment, the EC, the Bern Convention, and the European Ombudsman. The role of MEDASSET is that of an independent ‘watch-dog’ monitoring the enforcement of regulations and conservation measures, in order to safeguard this most important sea turtle habitat.
- Ecological Movement of Zakynthos has extensively lobbied the EC, the local and national authorities for the creation of the ZNMP.
- Greenpeace has contributed through lobbying for the protection of Laganas Bay over the years and the mapping of the Posidonia meadows of Marathonisi islet.

Figure 1: Zakynthos National Marine Park Map: The most important loggerhead nesting area in the Mediterranean, Laganas Bay at Zakynthos, consists of six discrete nesting beaches (East Laganas, Kalamaki, Sekania, Daphne, Gerakas and Marathonisi islet).
2. Timeline

The nesting area of Laganas Bay has been the scene of much contention for over 26 years, with the EC taking Greece to the European Court of Justice (ECJ) in 2002 for failing to implement an effective system of strict protection for the loggerhead turtle in Zakynthos.

Figure 2: Timeline - Brief summary of the case history since 1994.

<table>
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<tr>
<th>Year</th>
<th>Events</th>
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<tr>
<td>1994</td>
<td>• MEDASSET made a formal complaint to the European Union; case No. 4/4667SG(94)A/15702 against the Greek Government for its failure to apply National and International Law and Bern Convention Recommendations, concerning the preservation of sea turtles on Zakynthos. In particular the Council Directive 92/43/EEC 21st May 1992, on the Conservation of European Wildlife &amp; Natural Habitats of which the European Community is a party. The complaint was renewed each year until 1998.</td>
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<td>1997</td>
<td>• The complaint to the EC was put in abeyance. MEDASSET appealed to the EC Ombudsman.</td>
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<td>1998</td>
<td>• Eventually the annual complaints to the EC proved effective, leading to an &quot;on the spot appraisal&quot; by the EC Directorate-General (DG) XI, whose representative at the 18th Bern Meeting in 1998 announced the commencement of infringement procedures against Greece.</td>
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<td>1999</td>
<td>• The Zakynthos Case File was closed at the 22nd Bern Convention Meeting in 1999 subsequent to the EC initiative to take the Greek Government to the European Court of Justice for non-implementation of conservation legislation and EC Environmental Directives in Laganas Bay. • The Presidential Decree providing the constitution for the Zakynthos National Marine Park (ZNMP) in Laganas Bay was signed immediately after the EC announced its action, in December 1999, during the Bern Convention Meeting.</td>
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<td>2002</td>
<td>• The EC lodged the Case at the European Court of Justice Ruling against Greece for failing to fulfil obligations under Article 12(1)(b) and (d) of Habitat’s Directive (92/43/EEC). • Final written warning after on-the-spot appraisal showed Greece’s progress unsatisfactory.</td>
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<td>2003</td>
<td>• EC Delegation consisting of all Greek nationals conducted an ‘on-the-spot’ appraisal of Laganas Bay finding ‘substantial progress has been made towards effective implementation of a system of strict protection for the sea turtles’. The findings were in contradiction to the NGO Reports to the EC. • A European Parliament Petition Committee visited Laganas Bay, highlighting in their report (10.12.03) to the Commission that “It was clear from our visit, conversations and pictures seen, that the provisions of the EC Directive are not being complied with...” • Greek Authorities issued a “short-term timetable for the adoption of the remaining actions” in order to comply with the Court Judgement of 30th January 2002.</td>
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<td>2004</td>
<td>• Ombudsman denied NGO full access to the results of 2003 on-the-spot appraisal. • The EC sent Greece a Final Written Warning ‘Reasoned Opinion’ urging the Government to comply within 2 months • Greece responded to the EC’s ‘Reasoned Opinion’ by providing €90,000 towards the €300,000 debts of the non-functioning ZNMP Body • On December 31st 2004 the Waste Disposal Area on the hill above Sekania nesting beach, once again overflowed and the beaches and Bay were awash with effluent. The Plant has been the subject of Public Health Department prosecutions since 2000.</td>
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| 2005 | • General Inspectors of Public Administration (GEDD) investigated Zakynthos in respects to compliance with ECJ ruling. Report gave strict recommendations to meet Ruling obligations. • Director of the Land Registry of Zakynthos was hospitalised after having been violently assaulted following signing of official documents confirming the State owned the majority of land around the nesting beaches. • NGOs MEDASSET and EuroNature delivered a 17,000 signature petition to the Greek Prime Minister. No response was issued. • The Minister of Environment appointed a replacement for the ZNMP President. A month later the
NGOs lobbied against the appointment due to vested interests with his family owning illegal buildings on Daphne nesting beach.
- New appointment of Prof. Amalia Karagounis-Kyrtso s of Athens University (current President) by Minister of Environment.
- Local Zakynthos Prefect refused to demolish illegal buildings despite Government order eleven years beforehand to do so.
- Daphne landowners lost an appeal at the Greek Constitutional Court to remove restrictions (imposed by the Presidential Decree constituting the Park) on private property development within the boundaries of the Park.
- On 28th September 2005, a Management Body for the ZNMP was established according to the regulations outlined in the Park’s Management Plan.

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<td>2006</td>
<td>ZNMP President without the knowledge or consent of the Management Body developed a ‘Pilot Management Plan of Daphne’ and signed a ‘Cooperative Agreement’ with the owners of the local illegal building owners in Daphne. It indicated the locals should implement “…aesthetic and other improvements as indicated by the ZNMP” to their buildings.</td>
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<td>2006</td>
<td>A ‘Pilot Management Plan of Daphne’ was undertaken closing the beach and allowing the construction of 9 new buildings on the area directly behind the nesting beach.</td>
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<td>2006</td>
<td>NGOs filed formal complaint leading to Police visits and an arrest.</td>
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<td>2006</td>
<td>NGOs lobbied the EC for intervention on the continued construction. Multiple Press Releases were circulated.</td>
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<td>2006</td>
<td>Zakynthos Department of Urban Planning imposed fines ranging from €270 to €670,000 on those landowners that had further developed under the instructions of the ZNMP President (those that refused to co-operate with ZNMP President were not fined).</td>
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<td>2006</td>
<td>Local Daphne residents held protests destroying ZNMP guard posts and signage.</td>
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<td>2006</td>
<td>ZNMP President meets with EC DG Environment. Reports to media after she has successfully convinced the EC to close the ECJ Case and avoid fine.</td>
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<td>2007</td>
<td>EC DG Environment sent the NGOs a letter on their intention to close the ECJ Case. ECJ case closed on 27/6/2007.</td>
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<td>2007</td>
<td>Minister of Environment confirmed that the fines imposed on the local buildings in 2006 would not be removed.</td>
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<td>2007</td>
<td>ZNMP President instigates the construction of 2 new car parks (100 cars each) in Daphne, further facilitating access. No regulation of number of tourists on the beach. No EIA on the carrying capacity of the nesting beaches.</td>
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<td>2007</td>
<td>Mayor of the city of Zakynthos imprisoned for embezzlement of €10 million.</td>
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<td>2007</td>
<td>Improvement seen in the Management of the ZNMP; however the situation in Daphne remains largely the same.</td>
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<td>2008</td>
<td>Fines imposed 30 months ago by the Zakynthos Department of Urban Planning on illegal building owners have yet to be settled.</td>
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<td>2008</td>
<td>Discussions regarding the amendment of the existing Presidential Decree have been extensive. The President of the Park is making efforts to prevent changes to the Presidential Decree by promoting first a management plan for the area.</td>
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<td>2008</td>
<td>Although an official decision on the expansion or the relocation of the existing Waste Disposal Site (XYTA) has not been issued, it is anticipated that the expansion will not be approved since the Ministry of the Environment has made it clear in writing that such a development at Skopos is not a sustainable solution to the Zakynthos waste management problem. The ZNMP, the Hellenic Ministry of Environment and the NGOs agree that there can not be a XYTA at Skopos. Local authorities however strongly support such a development.</td>
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<td>2008</td>
<td>The representative of WWF in Zakynthos and sole representative of the NGOs on the Management Board of the ZNMP (WWF and ARCHELON are represented in rotation), submitted her resignation from Secretary General to the Board, claiming non-transparency of decision-making procedures.</td>
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</table>
The Zakynthos Municipal Council asked the ZNMP Agency to stop all activities related to the preparation of the 5-year Management Plan and to proceed with a new Special Environmental Study (SES) that would allow for a series of amendments to the Presidential Decree, favourable to local residents’ property rights.

NGOs filed a joint letter of complaint to the Minister of Environment concerning the Waste Disposal Site operating within the ZNMP, demanding its immediate sealing and relocation outside the boundaries of the Park.

EC DG Environment Delegation visited Laganas Bay in June 2009 and inspected the Waste Disposal Site and Daphne nesting beach.

MEDASSET wrote to the ZNMP regarding the sound pollution generated by the illegally operating “Cameo” night club at Agios Sostis, affecting the entire Bay.

On May 29th the European Court of Human Rights ruled there had been a violation of Article 1 of Protocol No. 1 (protection of property) and that 2 million Euros be paid by the Greek State as compensation to the lawful owner of Marathonisi islet (part of the ZNMP).

Fines imposed in 2006 by the Zakynthos Department of Urban Planning on Daphne residents for engaging in illegal building activities remain unpaid.

The Zakynthos Municipal Council, in an extraordinary Meeting, unanimously asked the President of the ZNMP to resign.

Fires, declared by the Fire Brigade as the result of coordinated arson, destroyed 250,000 sq. meters of Mediterranean maquis vegetation surrounding Daphne nesting beach.

3. Aims and Objectives of this Report

Following the EC’s decision to close the 2002 European Court of Justice case (C-103/00, ECR 2002:1147) on June 27th, 2007, despite the numerous complaints by NGOs, MEDASSET has continued monitoring Laganas Bay, publishing annual update reports regarding the implementation and enforcement of marine turtle conservation measures.

This annual report aims to:

- Independently assess the conservation status of each of the nesting beaches and the surrounding sea, identifying the strengths and weaknesses of Management measures or lack thereof and provide useful recommendations.

- Draw attention to issues within the ZNMP, which negatively affect the survival of the endangered sea turtles and harm the protected area. Highlight any lax approach or breaches of EC and National environmental legislation.

- Urge the EC to pressurise the Greek Authorities to implement the EC Habitat Directive (92/43/EEC) within the ZNMP and to continue monitoring Greece’s compliance with EC legislation.

- Bring the assessment’s results to the Greek Authorities’ attention, provide policy recommendations and urge the Greek state to comply with its obligation to effectively protect this ecologically valuable area.

4. Overview of the Situation in 2009

Compliance to the regulations of the Presidential Decree and EC legislation was monitored by MEDASSET volunteers during the summer. The effectiveness of guarding on each nesting beach was determined by visits at various times and dates during the nesting/hatching season (May-October). Note: Nest and strandings data mentioned in this report have been provided by ARCHELON and/or the ZNMP.

- The number of nests during 2009 represents the lowest number ever recorded (829) since 1984 (ARCHELON).
Although Park Administration increased guarding efforts this year, on several occasions tourists and vehicles were observed trespassing East Laganas and Kalamaki beaches at night time, probably causing disturbance to female turtles attempting to nest and to emerging hatchlings (see section 5).

In general, the overall ZNMP guarding programme has improved compared to 2008 and most of the 77 ZNMP guards demonstrated willingness to inform visitors about the protective measures in place, with the exception of those at Daphne nesting beach (see section 5.3). On a few occasions it was noted that visitors were not adequately informed by ZNMP guards, who were only taking on the role of policing. Guards should be provided with a basic knowledge of the conservation work that is being carried out in the area, in order to ensure that simple queries by visitors are satisfied.

An increased number of visitors were observed on all nesting beaches, exceeding the allowed limit, especially during August 2009. The ticketing system was not enforced at Gerakas or at Daphne nesting beaches this year.

Daphne’s illegal development has now become a “little village venture”, in order to accommodate growing numbers of visitors. Increased tension between Daphne local landowners and the Park Administration created a number of problems pertaining to the management of the area, such as some illegal businesses operating well into the night, illegal building activity and a higher number of cars parked even closer to the nesting beach. Moreover, fines imposed in 2006 on the illegal building owners in Daphne have yet to be settled.

Three fire outbreaks, documented by the Fire Brigade as arson, occurred simultaneously on the evening of July 26th 2009 in Daphne, within the core protection zone of the ZNMP destroying 250,000 sq. meters of Mediterranean maquis vegetation surrounding the nesting beach. Combined with the winter’s rainfalls and continued soil erosion, this will lead to an ever increasing degradation of Daphne nesting beach.

Sekania has become a feeding haven for sea gulls preying on hatchlings, as the saturated and badly managed Waste Disposal Site (WDS) continues to operate without a license within the ZNMP, polluting the surrounding area as well as the sea of Laganas Bay on numerous occasions throughout 2009.

At the unique islet of Marathonisi, the great numbers of incoming visitors and boats compromise monitoring and conservation measures. Illegal anchoring in front of the nesting beach was observed on several occasions.

Speeding boats are still entering the protected NMPZ Marine Zone and illegal fishing is an ongoing issue. 34 sea turtles were stranded of which 28 were dead, 5 were wounded and 1 was found alive entangled in fishing nets which was transported to ARCHELON’s Rescue Centre near Athens. The number of dead turtles has been the highest ever recorded in one nesting season, creating much concern about the need for stricter regulation and monitoring of sea activities. Fishing and collision with marine vessels seem to be the major causes leading to strandings. Despite the availability of two ZNMP inflatable boats, only one was put to use this year. Sadly, patrolling by ZNMP personnel of the Marine Zones was not very effective this year.

Boats continue to release sewage into Laganas Bay to this day. The Port Authority imposed only one fine for illegal sewage discharge in Zone C during the nesting season. Harassment of the turtles by ‘Sea Turtle Spotting Boats’ and privately rented vessels was severe throughout the summer.

5. The Nesting Beaches in Detail

5.1 East Laganas and Kalamaki

(Zone Π3: Nature Protection Site, Marine Zone B) Beach Size: 2250km

East Laganas and Kalamaki nesting beaches, due to their proximity to the main tourist strip in Laganas, are relatively tourism-intensive with problems of excessive beach furniture, umbrellas and pedal boats ever since 2006.

There was no significant change concerning nesting activity this year on East Laganas and Kalamaki beaches (240 nests recorded in 2009; 247 nests counted in 2008).
In 2009, MEDASSET’s volunteers walked the beach during the day and night, counting umbrellas and sun beds, as well as reporting any illegal actions.

There are eight entrances (6 public and 2 private) to East Laganas and Kalamaki nesting beaches. Only 5 of 8 entrances have ZNMP Warden Stations (Kiosks). On several occasions throughout the nesting season people entered the beach at night via the unguarded entrances, causing disturbance to turtles attempting to nest.

On July 17th 2009, due to the lack of effective guarding on several occasions, tourists were seen trampling over unmarked nests and even seemed to be attracted closer to nests with cages as they approached to read the cage signs (Photo 1). The absence of metal barriers at the unguarded entrances meant vehicles were entering the beach at night. Barriers (poles) erected by the Park in 2007 next to Laganas rivulet and sand dunes should be more densely spaced at certain points, to stop vehicles from entering the beach at night. (Photo 2) On several occasions MEDASSET volunteers reported finding vehicle tracks along both beaches (Photo 3).

On July 18th 2009, in order to check guarding of the area, a MEDASSET volunteer entered E.Laganas nesting beach before midnight and photographed a turtle attempting to nest, from the back so as not to disturb it (Photo 4). No guard was encountered informing and/or preventing people from entering the nesting beach.

Lack of effective guarding in East Laganas and Kalamaki nesting beaches could be attributed to personnel shortages and the subsequent transfer of an important number of wardens from this section to Daphne nesting beach. It is important that management of guarding resources allows equal, full-day guarding on all ZNMP nesting beaches.

Largely due to the Park’s monitoring, the number of umbrellas (150) and sun beds (300) was in compliance with the provisions of the Presidential Decree for most of the nesting season. Beach furniture was removed from both beaches at night and the provision for daytime location (5 metres from the sea) was respected, an improvement compared to previous years. A marked increase of the number of beach furniture was observed during August, exceeding the legal quota.

Several pedaloes that occupy a considerable section of Kalamaki beach, at Kalamaki Beach Taverna, remain on the beach at night, forming an obstacle to turtles attempting to nest.

In 2003, 104 umbrellas and 160 sun beds were illegally placed on the flattened sand dunes. These were removed in 2009. Sand dunes play an important part in protecting the coastline. They act as a
buffer against wave damage during storms, protecting the land behind from salt water intrusion. The dunes also act as a reservoir of sand, to replenish and maintain the beach at times of erosion. Restoring degraded biotopes to allow efficient ecological functioning is important and must be sustained throughout the National Marine Park. This is a pertinent issue at these beaches as well as at Daphne, which should be addressed by the Park Management.

5.2 Sekania

(Zone A1: Absolute Protection Site, Marine Zone A) Beach Size: 350 m

Sekania, a nesting beach of ‘Absolute Protection’ has the largest known nesting density of loggerhead turtles in the world. It supports well over 50% of the total number of nests made in the whole Bay. The land behind the beach is owned by WWF Greece.

During the 2009 nesting season the Park appointed a day-guard for Sekania. MEDASSET volunteers and other sources reported that safeguarding of Sekania this year was consistent and at every attempt made to enter the beach, access was not granted. On several occasions speeding boats (exceeding the 6mph limit) in Zone A were observed by MEDASSET volunteers. Compared to 2008, a decrease in the number of nests was recorded this year: 470 nests in 2008, compared to 400 nests in 2009. See section 7 on the Waste Disposal Site issues adversely affecting Sekania beach.

5.3 Daphne

(Zone Π1: Nature Protection Site, Marine Zone A) ‘Strictly Protected’ Daphne nesting beach measures 300m in length and 20-30m in width. The Presidential Decree states that a maximum of 100 visitors are permitted at any time on the beach and only between 07:00 to 19:00.

Twenty five percent of total loggerhead nesting in the Mediterranean occurs at the ZNMP, with Daphne being the second most important nesting beach of the island after Sekania (ARCHELON, 2009). However, nest numbers fell from 119 in 2008, to 55 in 2009, potentially indicating that the beach’s poor condition impeded successful nesting. Daphne has been an area of serious concern and it is becoming more and more apparent that piecemeal developments over the past years have slowly transformed a natural area into an increasingly dense “small village” (Photo 5).

Illegal Buildings & Fines

The removal of illegal buildings at Daphne has been an obligation of the Greek State since 1987, when only two buildings existed, following recommendations by the Council of Europe (Recommendation No.9, Bern Convention). Since 1999, the Greek authorities have agreed to remove all the illegal buildings (ECJ 2002, provision n°11). The immediate demolition order by the Supreme Court was confirmed by the Greek General Inspectors of Public Administration in 2005, but has not been materialised to this date. These buildings remain, including the twelve additional ones constructed in 2006 with no indication in sight of proceeding with the demolition. Most importantly, the Greek State has yet to set a compensation scheme for the owners of the illegal buildings to be demolished.

The “Pilot Management Plan of Daphne”, instigated by the President of the ZNMP in 2006, was an attempt for a cooperative approach between the Park and the owners of the illegal buildings in Daphne, which ultimately led to the creation of a “little village” on the nesting beach (Photo 5). New developments in 2008 and 2009 have been ‘minor’, but remain nevertheless contrary to the Presidential Decree (Article 4, par.4) and the ECJ 2002 Ruling (provision n°38), which stresses that “the presence of buildings on a breeding beach such as the one at Daphne is liable to lead to the deterioration or destruction of the breeding site within the meaning of Article 12(1)(d) of the Directive”. ‘Minor’ building activity on an existing foundation was observed in late October 2009.

Fines imposed in 2006 by the Zakynthos Department of Urban Planning ranging from €270,000 to €670,000, remain unpaid. The former Minister of Environment and Public Works had stated that the Ministry could not intervene since the illegal buildings and subsequent fines are under the Local
Government’s jurisdiction (January 2008). It remains unclear if payment of the fines would affect the illegal status of the buildings and the existing decision for their removal.

As per the Presidential Decree, all fines could be controlled and managed by the Park Authority. Although this has been previously raised by the ZNMP President, no action has been taken to address the management and control of fines imposed. The recently elected Government and the newly formed Ministry of Environment, Energy and Climate Change have yet to address the situation at Daphne.

Additionally, in absence of a comprehensive, long-term solution to these issues through an integrated Management Plan, important consequential problems occur:

- The illegal status of the buildings means that they do not have access to electricity while no public sewage system is in place in Daphne. Untreated sewage is still released into the Bay, with water quality, bathers and marine life subsequently at risk. Park Management has supplied owners with electricity generators for their power needs and recently elaborated a plan and allocated funds in order to buy land to install photovoltaic panels to supply the illegal buildings with electricity.
- Due to the illegal status of the buildings, businesses operated in Daphne lack legal permits. Nevertheless, these businesses pay taxes, issue legal receipts and employ personnel insured through the national social security system, creating an extremely contradictory relationship between users of these illegal buildings and the Greek state. The operation of illegal private businesses in a strictly protected area of the ZNMP with the tolerance of the Government is unacceptable and should by no means be legalized through legislation loopholes.

Roads and Car Parks
Since 2007, the beach is easily accessible by the new wider roads and two main car-parks of a total 200-car capacity, even though the number of visitors cannot exceed 100 at any one time. In 2008, road network developments at Daphne included expansion of roads and the laying of tarmac, in breach of the Presidential Decree (Article 6) that prohibits such activities. In 2009, no further developments took place.

The Park rents one of the parking lots in Daphne in order to more effectively manage the large number of cars and so that Daphne residents derive some financial benefits from collaborating with the Park. The fact that the second car park was not managed by the Park, resulted in poor vehicle management, with the number of cars exceeding the permitted limit set by the ZNMP. On many occasions, large amounts of vehicles were parked close to the nesting beach in breach of the Park rules.

Guarding
Guarding of Daphne was quite sufficient during the 2009 nesting season, due to the increased tension between Daphne residents and the ZNMP President. At least one guard was present at all times on the beach. Despite Park Management’s increased efforts to strengthen the wardening on Daphne, guards seem reluctant to inform beach users about the protective measures in place, in order to avoid confrontation with local residents. Tourists walked uninhibited around the beach, in spite of the numerous nests, taking photos next to the small cages placed on top of them by the Park. Many of the nests were laid extremely close to the entrances of the illegal bars which litter the sea front.

As mentioned, due to the problematic management of the car parks, no guard was observed taking systematic notes of car numbers, which by far exceeded the Park Management quota.

As in 2008, the illegal bars and tavernas turned lights off after sun set. However, MEDASSET’s volunteers observed businesses on the beach allowing visitors (customers) to stay on the premises until as late as 2:00 a.m.

Sand Dunes and Beach Furniture
Recreational beach furniture is completely banned in Daphne by order of the Presidential Decree (Article 4 §4). However, beach furniture has been placed on a stretch of land, which once formed part of Daphne beach that was bulldozed to accommodate a beach bar-restaurant surrounded by a built-up area for sun beds and umbrellas, separated from the beach by a stone wall (Photo 6).

Remnants of the 2004 stone-wall still remain on the beach, reducing available space on this high nesting density beach. Removal of the wall has proved complicated because the land on which the
rubble stands belongs to the 25% of the landowners who have not signed the “Memorandum of Understanding” with the President of the ZNMP.

Daphne beach appears to have been severely damaged after the winter storms. The beach was very rocky, and appears to have lost a lot of sand due to the storms. Waves and rainwater runoff washed away the sand, uncovering stones and pebbles that were previously deeply buried. The blocked gullies; the constructed buildings that have occupied buffer zones that could protect against storms; and the destruction of the natural coastal protection (sand dune system and vegetation) in order to make space for more beach furniture; have affected the natural coastal processes and are gradually leading to serious erosion in the area. (Photo 7)

**Introduction of Non-Native Plants**
Tamarisk trees planted in 2006 are still in place despite concerns expressed by NGOs since their planting, emphasizing the need for their immediate removal. Known for their extensive rooting, this is a non-native plant that has been proven to damage nests and impede nesting. Recommendation No. 6 from the 6th Standing Committee Meeting to the Bern Convention (1987) stressed that Tamarisk trees should undergo a broad-scale removal from East Laganas and Kalamaki nesting beaches and had been de-rooted by the local administration in 1989.

**Arson**
At least three fire outbreaks occurred simultaneously on the evening of July 26th 2009 in Daphne, within the core protection zone of the ZNMP (Photo 8). Three fire-fighting planes, one helicopter, nine fire engines and 25 firemen worked around the clock to extinguish the fire. Fifty bathers were evacuated by the coastal guard as flames reached the beach.

According to local and national media, the fires were the result of coordinated arson, destroying 250,000 sq. meters of Mediterranean maquis vegetation surrounding the nesting beach. It is likely that next winter’s rainfalls will destabilize the bare soil and will end up covering the turtle nesting beach, as has happened after past arson attacks in 1994, 2001 and 2003.

Sadly, following 26 years of active NGO presence and despite the 9 years of operation of the ZNMP, Daphne nesting beach continues to face many problems and unresolved issues. Controversy and non-compliance to conservation measures will continue to take their toll on this most important nesting beach, unless strict adherence to the Presidential Decree is enforced along with the establishment of a compensation scheme for the removal of the illegal buildings.

**5.4 Gerakas**

*(Zone Π2: Nature Protection Site, Marine Zone A) Beach Size: 500m*

*The Presidential Decree states that a maximum of 60 umbrellas, 120 sun beds and 350 visitors are permitted on the beach at any one time.*

Management of Gerakas is considered a success compared to other nesting beaches and there has been great improvement relative to previous years. In contrast to the decline in nest numbers in 2008, nesting at Gerakas almost doubled in 2009 (86 nests in 2009, 47 in 2008).

However, visitor numbers occasionally exceeded by double or even triple the limit permitted by the Presidential Decree. The ticketing scheme was not utilised this year. The number of visitors was almost always higher than allowed and on some days in August as many as 600 visitors were present on the beach. It is clear that a more concrete approach to controlling the number of visitors should be implemented.

The two or three-hour stay limit (determined according to the number of beach users) was respected by most visitors, but the existing all-day beach furniture hire has yet to be adjusted according to the above scheme. Additionally, although the Presidential Decree allows two sun beds per umbrella, photographs taken by MEDASSET’s volunteers show three or even more sun beds per umbrella (Photo 9 & 10). Despite the small increase in the number of beach furniture on Gerakas beach during August, all beach furniture was removed at night.
The ZNMP Management Agency introduced the placement of a rope surrounding the caged nests to stop beach users from trampling on them, thus protecting nests more effectively (Photo 9 & 10). In addition, a cordon running the entire length of Gerakas nesting beach was placed periodically in order to prevent visitors from walking on the upper part of the beach and treading over any unmarked nests.

During the 2009 nesting season, the cordon limiting access to the cliff above the shore was re-installed to prevent visitors from extracting clay on a daily basis for therapeutic uses, an incident which occurred frequently in 2008 and before, contributing to the erosion of the cliff. Buoys were also placed in order to prevent access of visitors to the clay cliff from the water (Photo 11).

The retention of the natural dune and vegetation succession makes the problems of lights, people and development less severe than on other Laganas Bay nesting beaches.

5.5 Marathonisi Islet

(Zone A2: Nature Protection Site, Marine Zone B) Beach size: 150m

Nesting beaches on Marathonisi islet, situated in Laganas Bay, have a northern orientation and light-coloured sand. This combination results in low nest temperatures, meaning that this nesting site produces only male turtles due to the temperature dependant sex determination of hatchlings; a characteristic of exceptional importance given that all other beaches in Laganas Bay produce predominantly female hatchlings. Climate change makes Marathonisi both important for sea turtle conservation, but also very vulnerable to global warming, requiring further protection.

Visits to the islet by boat are allowed during the day, but anchoring and beach use is restricted. Illegal anchoring has damaged sensitive Posidonia seagrass surrounding the islet1. As in 2008, in 2009, monitoring and conservation measures were compromised by the very large number of vessels and tourists visiting the islet. A floating wooden wharf for boats was placed to prevent anchor damage and control boat and visitor access. It allowed for better and more effective management of the great amount of incoming boats, however, illegal anchoring in front of the nesting beach was observed on many occasions, especially during August 2009.

Information provided to visitors is not sufficient to deter them from using the restricted upper part of the nesting beach. There is a ZNMP sign informing visitors of beach regulations; however, this sign would be more effective if placed nearer to the boat drop-off zone.

Nesting at Marathonisi recorded a twofold decrease in 2009 compared to 2008, falling from 100 to 48 nests.

6. The Sea

Laganas Bay is separated into Marine Zones A, B and C. Vessels are not allowed to enter Zone A and anchoring is prohibited in Zones A and B. A 6-knot speed limit exists in Zones B and C.

The speed limit was again this year breached by private and commercial boats on many occasions, despite surveillance by the Port Authority and the ZNMP, following the acquisition of a new patrolling boat. Buoys delineating the no-entry zone were put in place as required, at the beginning of the nesting season (June 2009).

The presence of small boats near the nesting beaches had already been ruled as an infringement by the ECJ in its 2002 judgement, where it held that they constituted a source of danger to the life and physical well-being of the turtles because of the noise pollution it caused (provision n° 34 & 36).

Thirty four sea turtles were reported stranded of which:

1 Dr G. Papathodorou, University of Patra, 2008
- Twenty eight were dead; some were killed through fisheries interaction, a few were hit by boat propellers but for many the cause of death remains unknown
- five were wounded
- one was found alive entangled in fishing nets and was later rescued and transported to ARCHELON’s Rescue Centre near Athens.

The number of dead turtles has been the highest ever recorded so far in one nesting season, creating much concern about the need for stricter regulation and monitoring of sea activities. This issue should be effectively be addressed by the ZNMP Management and the Port Authority as current measures are proving insufficient.

A significant problem is the ongoing violation of ZNMP’s Code of Conduct for commercial ‘Sea Turtle Spotting Boats’ (Photos 12 & 13). For one more season, pedaloes and several boats with their engines running were documented surrounding a single turtle too closely, in blatant disregard of the 5-metre distance rule. It is of great concern that these boats seen stalking the turtles are endorsed by the NMPZ. Moreover, people dived into the sea from vessels to “swim with the turtles”. As reported by a MEDASSET volunteer on one occasion “there were 8 pedaloes, 4 boats and 7 people swimming with one poor turtle, and not a coast guard in sight”. Additionally, visitors hiring boats and pedaloes are not provided with instructions on required conduct within the protected area and most do not follow the regulations, harassing the turtles, even when advised by other boat operators who try to comply with the rules.

In addition to marine pollution generated by the Waste Disposal Site above the Bay (see section 7), untreated sewage released into the Bay by commercial boats is visible, polluting the sea of the ZNMP and raising complaints by tourists. In July 2009, the captain of a day-trip boat was arrested for releasing his boat’s sewage within Marine Zone C. The Mayor of Laganas also reported observing boat sewage within the Bay.

Illegal fishing continues in the Bay, with fines imposed on eight detected incidents by the Port Authorities during the summer of 2009. On November 2nd, the Zakynthos Association of Artisanal Fishermen wrote to the Greek Prime Minister stating that trawlers, seineing vessels and fishing vessels employing dredging methods continue to illegally operate within Zakynthos NATURA 2000 areas.

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Buoy marking Marine Zone A, unlike in 2008, were in place since early June, delineating the area of absolute protection in Laganas Bay where boats are not allowed to enter or moor.

7. Waste Disposal Site

Zakynthos suffers from a badly managed waste management system. The island’s unique Waste Disposal Site (WDS) is situated at mount Skopos, located above Sekania nesting beach, within the boundaries of the ZNMP and has been operating without an official permit since its establishment in 1996.

The landfill’s operating life had already been surpassed since 2001, yet it still receives tons of rubbish, posing a threat to public health and menacing the protected ecosystem. For the sixth year, on February 6th and again on May 11th, 2009 after strong rainfall, leachate leaked from the malfunctioning WDS into the surrounding land and poured into Laganas Bay through gullies (Photo 14). Landfill leachate is known to carry high organic content and heavy metals which tend to bioaccumulate within living organisms. Samples for analysis taken from the gully outfall area once the leachate had already been dispersed and diluted, were found to contain permitted levels of organic content as they were not taken from the source. On May 11th, at the mouth of the gully at Vrondonero, between Kalamaki and Sekania beaches (Zone Π3: Nature Protection Site), the sea had turned brown and signs of

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2 Similar incidents occurred in 1996, 1999, 2000, 2005, 2006 and in 2007 the Ministry of Environment imposed a fine on the waste management authority due to the badly-operated WDS. (Vima newspaper 04/10/09)
3 Department of Environment, Zakynthos Prefecture. (Statement in “Ermis” newspaper 09/10/09)
eutrophication were reported\(^4\). Since June 2009, one of the walls supporting the WDS is on the verge of collapsing while deficient covering of the waste means that rubbish is spread around when the winds blow, polluting the surrounding area, attracting rodents and resulting in numerous complaints by residents and business owners.

**With the WDS situated above Sekania, it is evident that this important nesting beach has become a feeding haven for sea gulls (*Larus cachinnans michahellis*).** Attracted by the offloading rubbish trucks and by the badly managed WDS, they predate on emerging hatchlings during day time, with gull presence peaking during the peak hatchling emergence hours\(^5\). (Photos 15 & 16)

As in 2005, the Management Agency of the WDS was again prosecuted in 2009 for negligence\(^6\). An EC DG Environment delegation visited Laganas Bay in June 2009 and inspected the site.

Heated discussions are underway among local authorities regarding the sealing and relocation or the expansion of the existing WDS. Expansion clashes with the protected nature of the area, Greek national law\(^7\), EC regulations\(^8\) regarding waste management and the Habitat Directive (Article 12.1(d), 92/43/EEC), which requires the “establishment of a system of strict protection and prohibits the deterioration of breeding sites”. Objections to such a development have been expressed by the Ministry of the Environment, the ZNMP Management, NGOs and local residents. The creation of a new waste management site outside the boundaries of the ZNMP has been approved since 2006 and two proposed sites have been accepted by the Zakynthos Prefecture since March 2008. However, the total lack of action up to date means nothing has been done to address this serious problem, resulting in an unacceptable situation within the boundaries of a National Park. **On October 22\(^{nd}\) 2009, leachate reaching the sea was once again detected by local authorities.**

### 8. Sound Pollution and Night Flights

MEDASSET wrote to the ZNMP Management regarding the sound pollution generated by the illegally operating “Cameo” night club at Agios Sostis (located within the ZNMP) and affecting the entire Bay. Every night, the club’s very loud music and basses generate sound pollution disturbing visitors and negatively impacting sea turtles. The club operates illegally and is advertised throughout Zakynthos, even though it was sealed closed by the local police in 2001 and despite the reactions of NGOs and the formal complaints of residents and local hotels ever since. Yet another severe violation is taking place within the core of this protected area.

Night flights are forbidden at Zakynthos Airport between 22.00 - 05.00 during the nesting season so as not to disturb nesting. Nonetheless, the following night flights were reported by MEDASSET volunteers, between July 16th and August 17th, 2009:

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\(4\) Department of Environment, Zakynthos Prefecture. (Statement in “Ermis” newspaper 09/10/09)


\(6\) A Greek Common Ministerial Decision (A.P.107064, 3/10/2000), based on an Environmental Impact Assessment (EIA) of the Area, issued the “Operational Permit” for the Waste Disposal Area with specifications for terms of operation. As identified by the above Ministerial Decision, negligent management of the Waste Disposal Area contributes to a serious threat to hatchlings with the concentration of seagulls, a major predator to hatchlings, above the nesting beaches.

\(7\) Official Government Gazette of the Hellenic Republic 1016 B 1997, Ministerial Decisions 114218

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9. Conclusions

During the 2009 nesting season, several improvements were documented regarding management and protection of the nesting beaches. Most issues that prevail are long-standing and represent a general need for change in attitude and vision by the Park, the local community, the involved local and governmental authorities. Transparency, stakeholder engagement, communication, empowerment, roles and responsibilities of staff and guards, conflicting interests among community sub-groups have to be addressed if any substantial change is to occur. The importance in identifying barriers to change so that progress can be achieved, cannot be stipulated enough.

It is becoming increasingly apparent that the ZNM Park Management continues to lack a long-term vision and subsequent long-term integrated management plans. This fails to distil confidence in NGOs that have been campaigning for the effective protection of Laganas Bay for the last 26 years. Management decisions are frequently taken by the Park without consulting the two NGOs that are alternatively represented at the ZNMP Management Board. It is also worth noting that on several occasions NGOs would only be informed on new decisions concerning the Park, via press releases after decisions had been made.

Frequent stakeholder engagement meetings could bridge the gap in communication, allowing involved parties to discuss standing issues, collaboration and strategic partnerships. Management decisions should therefore be based on feedback from such formalised processes and this in turn may resolve many conflicts between the sub-groups of the community in Zakynthos.

In Daphne ‘piece-meal’ developments have resulted in the formation of a small village. The poorly regulated visitor and vehicle numbers and minor building activities observed this year are all indications that the “little village” is growing and is becoming easier to access. Proper regulation and enforcement is needed, which now evidently requires a more proactive approach. The absence of a compensation scheme or another kind of settlement by the Greek State for the owners of illegal buildings in Daphne, has resulted in a very low degree of acceptance by the local community of the existence of the Marine Park and sea turtle protection efforts of conservation groups. This, combined with the increased tension between Daphne locals and the ZNMP President regarding the Memorandums of Co-operation signed between them in 2006, renders the work of the Park Administration and NGOs very difficult.

As far as the wardening programme is concerned, guards must be trained to a code of conduct and educated about what needs reporting and controlling. The guards are an important link between visitors, local people and the Park and need to be empowered with the right and relevant knowledge so as to timely and responsibly report illegalities.
The saturated, badly managed Waste Disposal Site which continues to operate without a permit, polluting the surrounding land and sea on numerous occasions throughout 2009, should be sealed and relocated to one of the already earmarked areas outside the ZNMP.

The number of nests recorded in 2009 represents the lowest ever recorded since 1984, when nesting started being recorded. The amount of stranded sea turtles has been the highest ever recorded, creating much concern about the need for stricter regulation and monitoring of sea activities and fisheries interaction.

10. Recommendations

1.) Daphne nesting beach
   a. Commence compensation and acquisition measures for Daphne illegal buildings.
   b. Demolition of all illegal buildings and constructions on the nesting beach of Daphne and removal of any concrete or remaining obstructions on the beach.
   c. Immediate removal of introduced, non-native plants, e.g. Tamarisk Trees
   d. Removal of illegally erected umbrellas and sun beds from the beaches.

2.) Guarding and protection of the nesting beaches
   a. Complete 24-hour guarding of the nesting beaches, including Sekania, throughout the nesting and hatching season, ensuring all accesses to East Laganas are properly guarded.
   b. Strict adherence to beach furniture limits.
   c. Removal of pedaloes occupying part of the beach at East Laganas (by the Kalamaki Beach Taverna entrance)
   d. Regulation of the number of visitors on the nesting beaches, especially at Daphne and Gerakas.
   e. Education of guards on conservation strategies and reporting of illegalities or suspicious actions. Procedures, roles and responsibilities should be determined regarding these issues.
   f. Use of the ticketing scheme throughout the season and enforcement of a three hour maximum sun–bed rental scheme.

3.) Enforcement of Marine Regulations
   b. Strict enforcement of boat speed limits, prohibition of anchoring in Zone B, regulated visitation and mooring at Marathonisi islet and prohibition of all boats entering Zone A.
   c. Placement of buoys as required by the Presidential Decree in the Marine Zone in front of Sekania beach and at Marathonisi well before the nesting season.
   d. Strict enforcement of fishing regulations within the ZNMP and elaboration of a special study investigating interaction between fisheries and turtles in the bay.

4.) Relocation of the Waste Disposal Area outside ZNMP Boundaries
   a. Immediate sealing of the saturated and malfunctioning Waste Disposal Area and relocation outside the boundaries of the ZNMP.

5.) Development of a long-term Integrated Management Plan with guidelines and recommendations to establish a comprehensive, sustainable and appropriate approach to management, encouraging the participation of all stakeholders in the implementation of future environmental management actions.
   a. All new plans or projects connected to the Park’s Management that could have a significant impact on conservation objectives should undergo appropriate assessment e.g. environmental impact assessments (EIAs), Sustainability Impact Assessment (SIA).
   b. Concretisation of a ZNMP communication and marketing strategy adapted to the local context and compatible with the conservation aims and objectives.
   c. Appropriate provisions in the EIA and Integrated Management Plan to mitigate noise and light pollution.
   d. Rehabilitation of all degraded sand dunes in the ZNMP.
   e. Establishment of a plan regarding the area’s sustainable development and economic growth within the framework of conservation management.
   a. Continuous monitoring of activities and evaluation of progress in a transparent manner to ensure that the Management Agency is accountable and dynamic in approaches made to Protected Area conservation.
   b. Development of indicators (eg. EU Sustainability Indicators) to quantify results and serve as an internal monitoring tool to prevent diversion from conservation objectives.
   c. Development of environmental performance criteria, objective and targets for the National Marine Park independent of political agendas and powerful vested interests.
   d. Provision of a strategic framework for the implementation and reporting of environmental programs at government and local levels.
   e. Establishment of strict procedures for internal and external evaluation to prevent ‘short-cuts’ being taken and breaches of National and EU legislation.
   f. Continual evaluation of the effectiveness and ramifications of Management Plans in dealing with the cumulative, direct and indirect environmental impacts on nesting beaches and the wider biotope eg. effects of tourism.

7.) Co-operation, Transparency and Stakeholder Engagement
   a. Establishment of transparent procedures. Interested parties should have access to procedures and information on decision-making, to allow cooperative dialogue between all interested parties. Designation of communication channels and procedures required for the decision-making process.
   c. Stakeholder engagement and education. Widening of public consultation and strengthening of public participation during the selection of management options.

11. List of Reports

Environmental situation and technical reports presented by MEDASSET to the EC DG XI and Standing Committee to the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) at the Council of Europe, published under T-PVS reference:

Updated reports prepared from 1984 and published as T-PVS since 1993:

T-PVS (95) 63: MEDASSET (L. Venizelos): Specific Sites, Caretta caretta, in Laganas Bay, Zakynthos (Greece), 3 pages. (Follow-up report and recommendations).
T-PVS (96) 86: MEDASSET (L. Venizelos): Caretta caretta in Laganas Bay, Zakynthos (Greece), 5 pages. (Follow-up report and recommendations).
T-PVS (97) 46: L. Venizelos, MEDASSET Marine Turtle Conservation in Zakynthos (Laganas Bay), Greece, 5 pages. (Follow-up report and recommendations).
T-PVS (99) 70: MEDASSET: Specific Site, Caretta caretta in Zakynthos (Laganas Bay, Greece), pp. 2-14. (Update report and recommendations).

Reports published without a T-PVS reference:

Document for information (2005): MEDASSET. Update report on Marine Turtle Conservation in Zakynthos (Laganas Bay), Greece. 29 pages


12. Photographs

Photo 1: East Laganas, July 17th 2009, 19.00pm. Zante Beach Hotel: Uninformed visitors approach caged nests much too close.

Photo 3: East Laganas, July 17th 2009, 20.00pm. Tracks demonstrating the illegal presence of vehicles on nesting beach.

Photo 4: Kalamaki, July 18th 2009, 23.30pm. Photo taken by volunteer, no guard on the beach.
Photo 5: Daphne. The “little Village” in 1998 and now (2009)
2009 UPDATE REPORT ON MARINE TURTLE CONSERVATION IN ZAKYNTHOS NATIONAL MARINE PARK

Photo 6: Daphne. Extra umbrellas placed on the beach in 2008 remain on the nesting beach.

Photo 7: Daphne. In 2009, due to harsh winter conditions the beach was covered in pebbles and stones making nesting more difficult.
**2009 UPDATE REPORT ON MARINE TURTLE CONSERVATION IN ZAKYNTHOS NATIONAL MARINE PARK**

**Photo 8: Daphne, July 27th 2009.** Fire by arson destroyed 250,000 sq. meters of Mediterranean maquis vegetation surrounding Daphne nesting beach. (Photo © Earth, Sea & Sky Ltd 2009)

**Photos 9 & 10: Gerakas, July 2009.** A rope surrounding the caged nests was introduced as a more effective measure to protecting nests. In breach of the Presidential Decree over two sun beds have been placed under each umbrella.

**Photo 11: Gerakas, July 2009.** Buoys and ropes were put in place to prevent access to the clay cliff.
2009 UPDATE REPORT ON MARINE TURTLE CONSERVATION
IN ZAKYNTHOS NATIONAL MARINE PARK

Photo 12: ZNMP, August 2009. Pedaloes, bathers and boats with their engines running surround a single turtle in blatant disregard of the 5-metre distance ZNMP rule. (Photo © H.King 2009)

Photo 13: ZNMP, July 2009. Turtle spotting from boats endorsed by the ZNMP getting much too close to surfacing turtle. (Photo © Earth, Sea & Sky Ltd 2009)

Photo 14: Vrondonero, ZNMP, May 2009. Leachate from Waste Disposal Site (WDS) pouring into the sea of Laganas Bay. (Photo © Ermis SA 2009)

Photo 15: Waste Disposal Site, ZNMP, February 2009. The badly managed and saturated WDS located within ZNMP attracts huge numbers of seagulls which pose a threat to emerging hatchlings.

Photo 16: Sekania, June 5th 2009. Seagulls attracted by the WDS over Sekania are lining the beach. (Photo © Earth, Sea & Sky Ltd 2009).