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Possible New File

**Report on Green Turtle (*Chelonia mydas*) Conservation
Monitoring in Kazanlı (Turkey)**

REPORT BY THE NGO

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Marine Turtle Conservation in the Mediterranean
Report on Green Turtle (*Chelonia mydas*) Conservation Monitoring in Kazanlı, Turkey

Submitted to:
The 27th Meeting of the Standing Committee of the Convention on the Conservation
of European Wildlife and Natural Habitats (Bern Convention)

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MEDASSET
The Mediterranean Association to Save the Sea Turtles
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BACKGROUND

The population of the green turtle, *Chelonia mydas*, is regarded as globally endangered, and Kazanlı in southern Turkey is one of the species' most important nesting beaches in the Mediterranean. The Kazanlı beach had been subject to gradual degradation since the 1980's, with only limited action by the Turkish authorities to stop the process. After MEDASSET alerted about the release of toxic waste into the sea off the nesting beach from the beachside soda-chrome factory in 2001 and significant public attention, more efforts were spent for the preservation of this area. During the last years, the situation has improved under the leadership of a new local administration. Both the Bern Convention and MEDASSET have contributed significantly to these improvements. This update report relates to information on the conservation status in 2007, as part of MEDASSET's regular long-term monitoring programme of the Mediterranean turtle nesting beaches.

The conservation of marine turtles in the Mediterranean has been under the scrutiny of the *Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)* since the mid-1980s, and the Convention has been instrumental in preserving nesting and feeding habitats particularly in some eastern Mediterranean countries. To encourage action for the conservation of the green turtle at Turkish nesting grounds, the *Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)* opened a case file at its 20th Meeting in 2000.

The situation at Kazanlı has been reported several times in the *Recommendations of the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats*. Concerns about adverse human effects on the turtle population finally lead to an on-the-spot appraisal mission in 2002. The results are available in document T-PVS (2002) 2. In the same year the Standing Committee issued a specific Recommendation on the "Conservation of marine turtles in Kazanlı beach (Turkey)" and opened a case file. After some conservation problems had been addressed, and having achieved better overall-protection of the area, the Standing Committee at its 24th Meeting (29.11.-3.12.2004) followed the Recommendation by the *Meeting of the Bureau* to close the file for the time being, requesting that the Turkish Government continue reporting on the situation. However, the Turkish Government did not follow that request, and did not report on the conservation status of Kazanlı in the 2005 Bern Convention meeting, and no delegation of the Turkish Government attended that meeting either. In 2006 the Turkish Government submitted a brief report, but again did not send a delegate to the Standing Committee meeting again.

TURTLE POPULATION

As part of long-term monitoring by MEDASSET, a marine turtle survey was carried out in Kazanlı between 1 June and 31 August, 2007. Altogether 156 green turtle nests and 8 loggerhead turtle nests were counted. Approximately 100 of these nests were located to the east of Kazanlı Municipality.

These figures confirm the vital role of Kazanlı nesting beach in the Mediterranean. Approximately 11 percent of the entire Mediterranean population nests at this single nesting beach along. Despite serious threats to the nesting population, the area has not lost its significance for the

survival of the Mediterranean population.

CONSERVATION ISSUES

Bern Convention Recommendation No. 95 (2002) lists fourteen issues requiring special action. The following text examines five years after the articulation these recommendations whether the Turkish Government has fulfilled its obligations under the Bern Convention through implementing these recommendations.

1. Control of beach erosion

Beach erosion from the seaside continues at an appalling speed and represents the major threat to the nesting area. Beach erosion undermines other conservation efforts.

Beach section K3, which was once the most important nesting area, with over 40 nests/km, has almost completely disappeared and now only a few hundred square metres of sand remain. Beach erosion is so heavy that not only the sandy parts of the beach have eroded, but adjacent agricultural fields are affected as well. Whereas the existence of green houses in beach section K3 had imposed a major threat to nesting turtles and the removal of these constructions was a high conservation priority, they are no longer of major conservation concern. Further green houses have been removed in 2006/2007, apparently as they themselves have become threatened by the progressing erosion. The remaining green houses are now situated on pure soil, no longer in the former sand dune area, and their removal would not gain additional sandy nesting ground for turtles. There is no longer suitable nesting space for marine turtles between the green houses and the splash line.

The small beach section K4, situated in front of the soda-chrome factory no longer exists as a sandy beach; rocks and concrete constructions prevail, all sandy parts have been washed away. This part of Kazanlı beach has always been of minor importance to turtle nesting.

A jetty belonging to the soda-chrome factory, identified in 2000 as being one of the reasons of erosion of the beach, was demolished by the factory in 2002. However, only those parts of the jetty emerging above the surface of the water have been removed and the foundations of the jetty remained for years, causing accelerated beach erosion. Only after intervention of MEDASSET through the Bern Convention (T-PVS/Files (2005) 10), the underwater parts of the jetty were removed in 2006.

The reasons for beach erosion are not only locally caused, but must be regarded as part of a phenomenon common to many eastern Mediterranean beaches. One of the reasons is apparently the construction of dams at many of the rivers, and a resulting decrease of input of sand and soil into the sea. The destruction of the factory jetty at Kazanlı has helped improve the situation, but has not solved the problem. A comprehensive coastal engineering study is necessary to better understand the full range of factors influencing beach erosion, and to identify measures necessary to combat it.

2 Hazardous waste landfill on the beach

The chrome factory on Kazanlı has deposited 1.5 million tons of chemical waste directly onto the nesting beach. The waste has a high concentration of toxic chromium (Cr 3+/6+) compounds, and is a by-product of the factory's activities of the 1990s. In accordance with Council Directive 91/689/EEC of 12 December 1991 this waste is to be classified as hazardous due to its content of chromium (+6). Currently applied technologies produce these toxic compounds in much lower concentrations and in lower quantities. Following an increase in public interest, the factory has been forced to cover the waste with plastic sheeting to avoid the dispersal of toxic substances through wind and rain. However, this measure can, at best, be regarded as a transitional solution. In 2005, the chrome factory disposed additional hazardous waste at that site. It had apparently disposed toxic waste at several locations around Kazanlı in the 1990s, but when this became publicly known in 2005, the factory was forced to take it back to its own premises, thus adding to the already existing threat.

A beach is not at all an appropriate landfill site and does not fulfil minimum safety standards. The coverage of the waste disposal with plastic sheetings should be regarded as nothing but an intermediary solution. The Turkish Government should put high priority to solve this problem immediately. Although this is a long-standing issue, as far as we understand, no professional feasibility study has yet been commissioned to identify options for rendering the hazardous waste

harmless and to arrange for its removal.

3. Other conservation concerns

Tourism development is at present not regarded a major threat to the area, as the Turkish authorities failed to attract investors. Nest predation by stray dogs is not under control and continuous to be a serious problem for the turtle population.

The proximity of Kazanlı settlement and administrative problems exacerbate a solution of this problem. The municipality of Kazanlı has implemented some activities that have helped to screen the lights from the factory buildings and from some houses situated on the beach, but the overall achievements are still not satisfactory. Plastic debris is a permanent problem on the beach, as much is washed ashore from the sea on a continuous basis. More or less regular clean-up activities are being carried out, but these efforts are still not enough.

IMPLEMENTATION OF BERN CONVENTION RECOMMENDATIONS

The following table examines to which extent the fourteen recommendations of Bern Convention (Recommendation No. 95 (2002)) have been implemented. The table only briefly describes the Recommendations. For a full description see Recommendation No. 95 (2002) in T-PVS/ Files (2002) 2, and information given above.

Recommendations	Implemented			Remarks
	yes	partly	no	
1. Remove greenhouses in beach section K3		Partly		Some greenhouses removed because of heavy erosion. According to the Mayor of Kazanlı, no funds for compensation payments are available; removal no longer a priority because of heavy beach erosion.
2. Remove taxi (dolmus) parking area	yes			New parking place to the rear of the beach within the town.
3. Remove plastic debris		Partly		Collected repeatedly, but new plastic debris is continuously washed ashore and added from land-borne sources.
4. Screen lights		Partly		
5. Monitoring of chemical waste discharge	yes			Regularly monitored, monitor screen established in the centre of Kazanlı.
6. Monitoring of beach erosion		Partly		No systematic monitoring. No coastal engineering study giving reasons for beach erosion.
7. Promote public awareness	yes			Comprehensive education programme supported by the Turkish Government (State Planning Organisation) and implemented by a local NGO.
8. Implement environmental plan («cevre düzeni planı»)	yes			Plan adopted in 2004; beach sections K1-K3 allocated as conservation area. Beach section K3 not included in the SIT Conservation Area, but protected by decision of the Municipality Council (stronger legal status required)
9. Remove illegal building in K1		Partly		Some installations removed, some still present.
10. Remove hazardous waste			No	New amount of hazardous waste added to existing one. Feasibility/Pre-feasibility study for ultimate disposal apparently not yet commissioned.
11. Relocate wedding hall			No	
12. Construct sewage treatment plant for Kazanlı		Partly		Very slow progress in construction of sewage collecting system. Responsibility shifted to Mersin Municipality.
13. Look for appropriate solutions for houses built legally on the beach			No	People now living in the houses, no light screening.
14. Reduce impact of agrochemicals		Partly		Some attempts at bio-farming undertaken. So far few positive results.

CONCLUSION

The Kazanli green turtle nesting beach has an interesting history: Its significance as the second most important Mediterranean green turtle nesting beach was acknowledged in 1988 (Baran & Kasperek 1989), during which a number of serious threats were identified. These threats increased in subsequent years, and although confirmed and reported by numerous researchers and conservationists the responsible authorities failed to take action for many years. As a result the situation gradually deteriorated over the years.

The only significant change took place in 2001, after the soda-chrome factory discharged toxic liquid into the sea, resulting in serious damage to marine habitats and wildlife: Following the intervention of MEDASSET, who arranged for analysis of the seawater and organised an international campaign, the Bern Convention conducted an on-the-spot appraisal and a case file was opened. Only then did the responsible authorities undertake serious steps to improve the overall situation significantly. However, as the recent follow-up assessments show, that present measures are still not sufficient and considerable efforts are still required.

Priorities to maintain Kazanli as the second most important Mediterranean nesting beach for the critically endangered green turtle are to stop beach erosion and to rehabilitate the destroyed nesting beaches. Threats to both humans and the marine and terrestrial wildlife caused by a hazardous waste landfill on the beach should be immediately addressed.

Both Greece and Turkey share a long history of destructive earthquakes related to the North Anatolian fault system. Should a natural disaster, such as a submarine earthquake and possible consequential tidal wave, affect the soda chrome deposit on Kazanli beach- with no community resiliency planning, National or Regional Management strategy in place; then the environmental impact shall have ramifications for the north-east Mediterranean (See Annex).

REFERENCES

In the past, the following Recommendations of the Standing Committee dealt with the situation at Kazanli:

- No. 7 (1987) On the protection of marine turtles and their habitat;
- No. 8 (1987) On the protection of marine turtles in Dalyan and other important areas in Turkey;
- No. 12 (1988) Concerning the protection of important turtle nesting beaches in Turkey;
- No. 13 (1988) Concerning measures for the protection of critical biotopes of endangered amphibians and reptiles;
- No. 24 (1991) On the protection of some beaches in Turkey of particular importance to marine turtles;
- No. 66 (1998) On the conservation status of some nesting beaches for marine turtles in Turkey;
- No. 95 (2002) On the conservation of marine turtles in Kazanli beach (Turkey).

A number of other reports describe the situation at Kazanli in detail. These include:

- T-PVS (1999) 74 Report by the NGO: MEDASSET.
- T-PVS (2000) 56 Report by MEDASSET.
- T-PVS (2000) 73 Report by Turkish Government.
- T-PVS (2001) 39 Report by the Secretariat of the Bern Convention.
- T-PVS (2001) 70 Report by the NGO: MEDASSET.
- T-PVS/Files (2002) 2 Report by the Secretariat of on-the-spot appraisal undertaken for the Council of Europe by M. Kasperek.
- T-PVS/Files (2002) 17 Report by Turkish Government.
- T-PVS/Files (2002) 20 Report by the Secretariat of the Bern Convention.
- T-PVS/Files (2003) 14 Report by the NGO: MEDASSET.
- T-PVS/Files (2004) 10 Meeting of the Bureau. Meeting Report.
- T-PVS/Files (2004) 11 Report by the NGO: MEDASSET.
- T-PVS/Files (2004) 16 Report by the Secretariat.
- T-PVS/Files (2005) 10 Report by the NGO (MEDASSET).
- T-PVS/Files (2006) 3 Report by the Government.

T-PVS/Files (2006) 13 Report by the NGO (MEDASSET).

For detailed background information, reference should be made to these Bern Convention Kazanlı documents; most of which are available at http://www.medasset.org/pub_db/All_results.asp.

BIBLIOGRAPHY

- Aymak, C., S. E. Gözükar & Y. Kaska (2005): Reproductive ecology of *Caretta caretta* and *Chelonia mydas* during 2002 and 2003 nesting seasons in Alata, Mersin, Turkey. – The Second Mediterranean Conference on Sea Turtles, Kemer Antalya 4-7 May, 2005. Book of Abstracts.
- Baran, I. & M. Kasperek (1989): Marine turtles Turkey. Status survey 1988 and recommendations for conservation and management. - WWF, Heidelberg.
- Canbolat, A. F., K. Atatunc, O. Candan & D. Barcak (2005): A new green turtle (*Chelonia mydas*) nesting site in the Mediterranean: Sugözü beaches, Adana (Turkey). – The Second Mediterranean Conference on Sea Turtles, Kemer Antalya 4-7 May, 2005. Book of Abstracts.
- Kasperek, M., B. J. Godley & A. C. Broderick (2001): Nesting of the Green Turtle, *Chelonia mydas*, in the Mediterranean: a review of status and conservation needs. - Zoology in the Middle East 24: 45-74.



Annexes MEDASSET

The Mediterranean Association to Save the Sea Turtle

Tatjana Hema
48, Vassileos Konstantinou Avenue,
P.O. Box 18019
GR-116 35
Athens, Greece

July 4, 2007

Dear Tatjana,

Our Ref.: 22994

It was wonderful bus-riding with you to the RAC/SPA (UNEP/MAP) 8th Focal Point Meeting in Palermo, I was very happy to have the opportunity to speak with you.

As you may know, the case of Kazanli is currently under consideration for a "*possible case file*" at the next Bureau Meeting for the Bern Convention. As we have been lobbying for the mitigation of the 1.5 million tons of toxic waste and rehabilitation of the nesting beach of Kazanli since 2001, we would like to take this opportunity along with the Delegates of the Bern Convention, particularly Minister Patrick Van Klaveren of Monaco, to ensure that this serious environmental threat is aptly addressed. The waste has a high concentration of highly toxic chromium (Cr 3+/6+) compounds, and is a by-product of the factory's activities of the 1990s, which is stored as a large mountain on the seashore.

Both Greece and Turkey share a long history of destructive earthquakes related to the North Anatolian fault system. Should a natural disaster, such as a submarine earthquake and possible consequential tidal wave, affect the soda chrome deposit on Kazanli beach- with no community resiliency planning, National or Regional Management strategy in place; then the environmental impact shall have ramifications for the north-east Mediterranean.

The soda chrome deposit on the green turtle nesting beach would not only require millions of Euros to remove the mountain of toxic waste but bring to light problems concerning safety, transportation and storage location. Relocating this material of highly toxic substances would create new problems for the environment (dust, transportation on public roads, etc.). This is a threat to highly endangered Mediterranean green turtles, but the much more serious threat is to human beings! So we have reached a point in the Case that goes beyond the scope of sea turtle conservation; instead bringing to light more serious implications on human health and the safety of this part of the Mediterranean marine ecosystem. As discussed in Palermo with Mr Aybars Altiparmak, the Focal Point of Turkey, the Turkish Government does not have the money or the means to mitigate Kazanli alone.

As we wrote you in our e-mail dated 06/03/07, we alerted MED POL in 2001 of these dangers but did not receive any response. To our knowledge no action has been taken so far to mitigate the waste or to assess the seriousness of this issue.

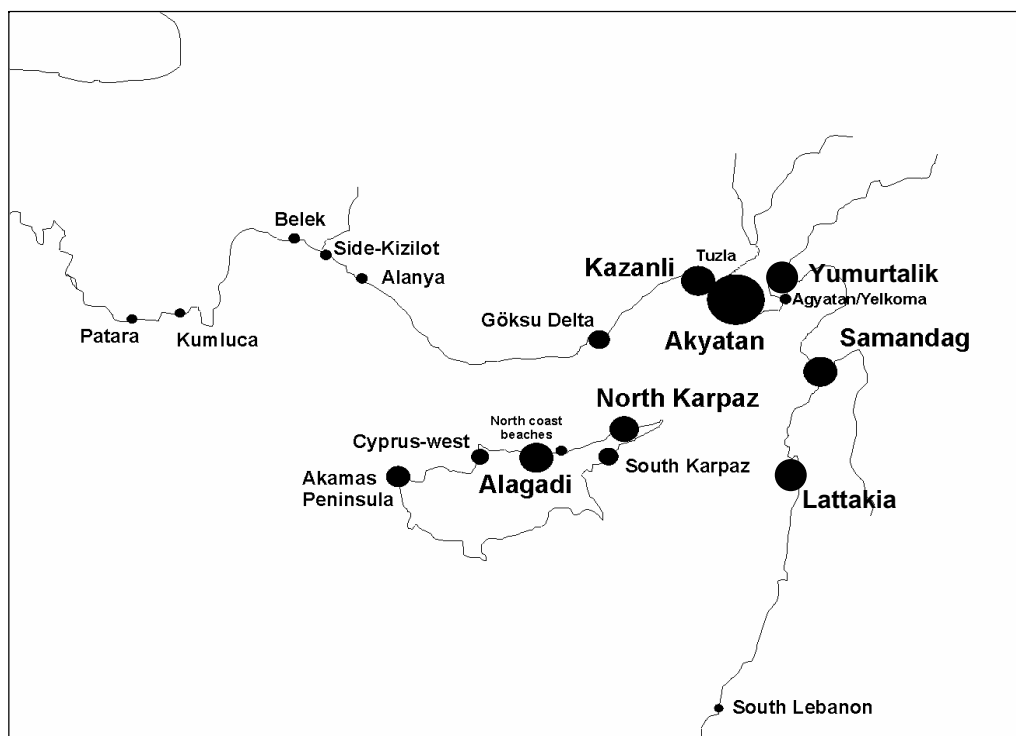
We urge MED POL and UNEP/MAP to remind Turkey of her obligations to the Barcelona Convention and specifically to the MAP LBS Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities.

Look forward to hearing from you at your earliest possible convenience.

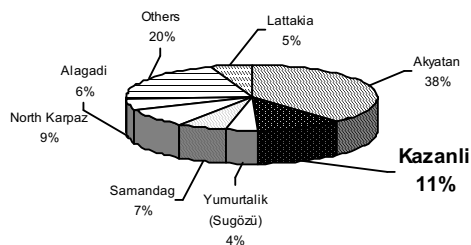
Very best wishes,

Lily Venizelos

Copied to:
Mr. Abderrahmen Gannoun
Ms. Carolina Lasen Diaz
Mr. Patrick Van Klaveren
Mr. Eladio Fernandez-Galiano
Dr. Max Kasperek



Geographic position of the green turtle nesting beaches in the Mediterranean.



Green turtle nesting in the Mediterranean: The figure shows the importance of the four Turkish nesting beaches Akyatan, Kazanlı, Yumurtalik and Samandag in relation to the other Mediterranean nesting beaches. Altogether, they host 60% of the Mediterranean's nesting population. Please note that figures for Lattakia and Yumurtalik beaches are approximate.



Green Turtle nesting in Kazanlı has shell covered in CaCO_3 soda waste discharged by Soda Factory in the Sea.



Nesting beach erosion in Kazanli has taken its' toll on this green turtle nest and eggs.



Beach erosion has become the most serious threat to Kazanli nesting beach. Note that the entire sandy area has eroded, and no space for turtle nesting remains. This beach section (i.e., section K3) had, until a few years ago, the highest nesting density of green turtles in the Mediterranean.



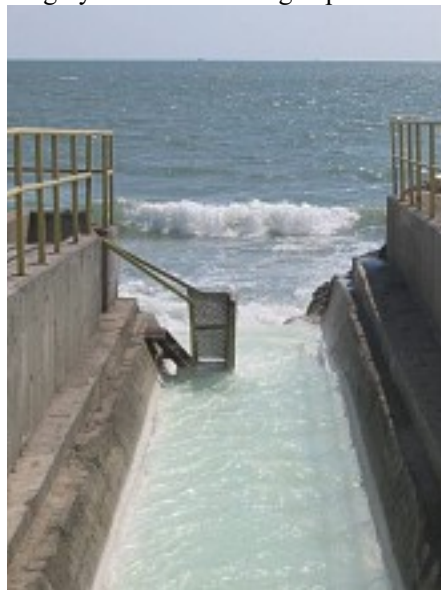
Beach erosion has not only destroyed green turtle nesting beaches, but now encroaches upon agricultural land and local agriculture.



The mountain of hazardous toxic waste on the beach, next to the second most important green turtle nesting area in the Mediterranean. The waste contains highly toxic chromium 3+/6+ substances, and has only recently been covered with plastic sheeting to prevent the dispersal of toxic substances by wind and rain.



New hills of toxic substances, added in 2004/2005. Instead of introducing measures to reduce the amount of waste, the quantity of highly toxic waste being deposited at Kazanlı beach is increasing!



The soda factory discharges carbonates into the Mediterranean Sea on Kazanlı Green Turtle Beach. This gives turtles a whitish appearance.