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Report of the workshop on the standardisation of tagging and centralisation of information

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1. Introduction

Historically, tagging marine turtles has proved to be a valuable source of information on various aspects of marine turtle's biology including reproductive biology, growth, population sizes and migration. Further, tagging does not conserve turtle and is not a substitute for conservation.

At worst, i.e., if badly done, tagging can disrupt nesting and create new threats to the animals, such as making them more vulnerable to being entangled in stationary nets (trammel and gill nets). If aimlessly done it can divert attention and precious effort from other perhaps more significant actions.

The progress made through genetics work is now answering many of the questions that tagging was trying to answer. It is nonetheless a very valuable tool if properly used. Tagging is undertaken to obtain information on such parameters as, populations, reproductive biology, movements/migrations, strandings, residency and growth rates. The aims of any tagging programme and the methods used, therefore, need to be carefully analysed and assessed in the first place, before going down to the beaches and embarking on tagging turtles.

There is a wealth of information on tagging techniques used for conservation and for research purposes in sea turtles. In spite of the fact that historically speaking, tagging has been perhaps the main tool that has helped in the understanding of sea turtles, there are shortcomings in all the methods/techniques used so far. The merits and shortcomings of each, therefore, need to be assessed in relation with the aims of a programme. This assessment needs to take into consideration not only the effectiveness of a tagging technique but also the risks tags and tagging pose to the animals.

Tagging systems are often chosen taking into consideration the aims of a programme. Considerations, such as cost, simplicity in use and the length of time the tag is expected to stay on the turtle, often influences the choice of system used.

Tagging has been used in different Mediterranean countries and projects for many years. Different techniques have been used by different researchers and programmes, though in most cases plastic (or sometimes metal) flipper tags are used. Other methods, such as internal tagging (Passive Integrated Transponder tags - PIT) or satellite telemetry, are used by some programmes. An increasing number of PIT tags are now being used. Satellite tracking of turtles is not intended to be covered at this stage by the working group, for a variety of reasons, the main ones being the cost and the (consequently) small and specific use of this method.

Even though some of these alternative systems have given excellent results in specific research programmes, none of them have succeeded in equalling cattle ear tags in simplicity, cheapness, endurance and ease of use in the field. They can moreover be read by fishermen at sea. The use of a combination of tags, such as flipper and PIT tags, used at the same time promises to solve some of the problems of tag losses.

2. The International Scene

International collaboration in tagging techniques, as well as information exchange between researchers, can enhance the effectiveness of any tagging programme. Much progress has been achieved in the last few years on the issues outlined above.

Special mention needs to be made here to SEATURTLE.ORGs **Tag Finder** website (http://www.seaturtle.org/tagfinder/index.shtml) in which very valuable information on tagging techniques can be found. It has also a searchable database for finding information on any tag that has been submitted for inclusion in the database: ***"Sea Turtle Tag Database"***

> *SEATURTLE.ORG's Tag Finder is a resource to assist in reporting recapture data for sea turtles based upon their tag numbers. The database includes tag numbers, tag type, ocean basin in which tags were applied, species of the tagged turtle, and contact information for the organization that applied the tag.*
>
> *All organizations and individuals involved in tagging turtles are encouraged to visit the ACCSTR Sea Turtle Tag Inventory. ACCSTR maintains an archive of tag series that have been used by various organizations and is useful for preventing duplication of tag series between organizations.*
>
> *Organizations and individuals that have applied tags to sea turtles are encouraged to submit a list of tags so that they can be added to the database. The more tags included, the more useful this resource will be to tagging projects around the world."*
>
> George H. Balazs (Balazs, G. H. 1999) paper "Factors to Consider in the Tagging of Sea Turtles" presents a very valuable analysis of the aims and issues involved in tagging, in the criteria for tag selection etc. This can be downloaded in pdf format from the **Tag Finder** website.

The **Tag Finder** website mentions *inter alia* the following**:**

> "Much of the information available about tags, their benefits and weaknesses, comes from the pooled experience of many people working on sea turtles. For these reasons, we have created this single centralized site in order to provide as much information and detail as possible about tagging. However, the act of tagging is not to be taken lightly, and placing any kind of tag on a turtle should not be done simply for the sake of tagging, otherwise known as the "tagging reflex" coined by Mrosovsky (1983) and revisited by Witzell (1998). The tag that might be attached to any turtle will be for the purpose of specifically identifying that individual and discovering something about its life history and habits. The relevant time span for this might be from days to decades. In some cases a combination of different tags placed on each turtle may be desirable.
>
> Prior to initiating a tagging program, various issues must be addressed, including the health and safety of the field personnel, the welfare of the turtles and the objectives of the study that involves tagging (Balazs 1999)"

"However, often there is no real question being asked, and turtles are tagged simply because tagging is thought to be an integral part of a monitoring project. Tagging for no defined reason should be avoided. In other cases, the questions are sometimes too complex to be answered by basic tagging protocols. For instance, it is difficult to estimate survivorship of reproductive females using tags because of the problem of tag loss. Traditionally, researchers have categorized as "dead" those turtles that were tagged but were never seen again. However, other possible explanations exist for not observing the turtle, including the following: the tags simply fell off, the observers failed to find the tags, the turtle returned to a different beach to nest, the turtle returned to nest at a time when there were no observers on the beach. Software packages have been developed to take into account tag loss and other complicating factors in the estimation of survivorship of marked animals, although few of these packages appear to be adequately tailored to the specifics of the natural history sea turtle. A list of software available for analyzing tagging data is available here:

http://www.phidot.org/software/mark/."

Some basic questions that need to be answered before deciding on a tagging program and what kind of tags to use in a sea turtle tagging project are contained in ANNEX I as they could be useful.

3. The Regional Perspective – aims and needs

In view of the wide use and usefulness of tagging and the multiplicity of programmes in the Mediterranean it is now useful to review the situation and come up with proposals and recommendations that will enhance the usefulness of tagging in the region. Exchanging information and sharing experiences can only benefit effective sea turtle conservation and management.

In the Mediterranean region, as elsewhere, there is a need for:

- Standardization of techniques, where possible or appropriate. This could also promote uniform or compatible data collection
- Exchange of information within the region.

Collecting information at national (or project) level on tagging programmes is now needed, in order to assess the actual situation, i.e. to take stock of who is doing what, where and how in the Mediterranean.

RACSPA, is well placed and networked with all the Mediterranean countries and can act as the regional coordinator for such work. It already has its official Focal Points in the countries, through which national coordinators can be designated.

In some countries in the region permits are needed for any research (including tagging, etc…) on endangered species. There is a need for collecting information on the existing legislation within the region that may be applicable to tagging sea turtles. Coordination of tagging programmes within a country, to avoid duplication, is likely to be the responsibility of the RAC/SPA Focal Points

A Working Group met prior the 2nd Mediterranean Conference on marine turtle (2 May 2005) and discussed the followings:

- the collection of information on ongoing tagging programmes and methods used in the Mediterranean.

- the aims of tagging and the merits and drawbacks of the various tagging methods (plastic/metal flipper tags, PIT and other tags, location of tags, etc)

- the centralisation/exchange of information (Directory of Tagging Groups, Inventories of tags used etc.)

- Come up with recommendations on the issue of centralisation of tagging data

The outcome and recommendations of the working group meeting were presented to the Tagging Standardisation Workshop during the conference for discussion.

RACSPA on the basis of the outcome of the meeting and the discussions in the Workshop on Tagging Standardisation during the Second Mediterranean Turtle Conference will consider additional tasks, such as: supporting the purchase of tagging material (tags, applicator, etc…), awareness materials, coordinate the centralization/exchange of information; provide support to developing programmes. A tagging team could also receive training by RACSPA experts.

The Working Group was a forum for discussions on technical issues/questions/problems and exchange of experiences and information regarding the use of different techniques and how to achieve standardization of them. General recommendations and guidelines to minimize disturbance/damage to turtles by tagging were drafted (see Annex II).

References

Balazs, G.H. 1999. Factors to consider in the tagging of sea turtles. In: Research and Management Techniques for the Conservation of Sea Turtles. Eckert, K.L, Bjorndal, K.A.,Abreu-Grobois, F.A.,Donnelly,M. (Eds). IUCN/SSC MTSG publication No.4:101-109.

Gerosa, G. 1996. Manual on Marine Turtle Tagging in the Mediterranean. RAC/SPA (UNEP-MAP), Boulevard de l'Environment, B.P.337 – 1080 Tunis-Cedex.

ANNEX I

Sea Turtle Tagging Questions (from the **Tag Finder** site)

The following list contains some basic questions that you should answer before deciding on a tagging program and what kind of tags to use in a sea turtle tagging project:

A.   Will the individual turtle receiving tags be likely to return and be observed by people working on your project?

If the answer to this question is no, you might want to consider whether it is useful to tag this turtle in the first place (unless it is a satellite transmitter tag). If you are still interested in receiving possible long distance tag returns, then you should consider using tags that are easily visible (i.e. use external flipper tags rather than internal PIT tags).

B.   Where are your turtles likely to go after they have been tagged?

In many cases, this is probably not known. However, in those cases when you do know roughly where they go, this information may help in deciding what kinds of tags to use (or avoid). For instance, if you are interested in putting on a radio tag attached by tether, you may want to rethink this kind of tag-attachment if you know that turtles tend to stay close to shore or in estuaries and sounds. This is because these areas usually have shallow water and a higher content of submerged objects (rocks, branches, boatwrecks, etc.) that can more easily snag the tether.

C.   If you are using external tags, how permanent is the return address/contact information?

This is extremely important if you want to receive information that may be available several years from when you first applied the tags. Also, if you offer a reward, you should be sure that it will still be available in the future, as some tag returns can be submitted years or decades later. For further discussion on rewards.

D.   Are the tags you want to use appropriate to the size of the turtles?

You should avoid placing large flipper tags on small juvenile turtles, and conversely you should place flipper tags on larger juvenile turtles such that there is room for further unimpeded growth of the flipper where this is expected. Large satellite tags are not suitable for small turtles, as they may greatly affect the turtleYs behavior. More details and recommendations concerning appropriate types of tags and tag placement are available in the different sections of this site."

ANNEX II

General Recommendations

- There is a need to stress to all prospective tagging projects that **tagging is not a conservation measure** and that it is not an alternative to conservation. All it can do, at best, is help get information on which to base conservation policy and actions

- Encourage enforcement, at national level, of **permitting legislation** for tagging. This is to ascertain that aimless tagging does not take place and that tagging teams/persons or organizations have well thought out plans and aims and adequate training for what they are intending to do.

- There is a need for **training courses** in planning and undertaking tagging projects and/or support in training in the field (with the provision of experts), particularly for new projects

- There is a need to **support** tagging project that have been authorised according to the national legislation and working team qualified for such work (having undertaken adequate planning, training etc…)

- It is proposed that tagging should be **coordinated** at national level by a qualified body and if possible at regional level. Tags used should carry the return address of the project or the coordinating body at national level.

- A **Regional Inventory of Tagging Projects** is needed and is in fact a priority issue. This should be updated as new information becomes available and should be available on line. (A **questionnaire** was drafted by the working group and is submitted to the participants in the workshop for completion see Annex III).

- As tagging is not to be taken lightly, there is a need in the countries for **advice and guidelines** to ensure the wellbeing of turtles (basic guidelines were drafted by the RAC/SPA WG aimed at minimizing damage/disturbance to turtles by tagging),

  Advice and guidelines are given inter alia through RAC/SPA and its website www.rac-spa.org, on tagging issues providing links to key websites such as www.seaturtle.org and its **Tag Finder** site, as well as to the **ACCSTR Sea Turtle Tag Inventory** www.accstr.ufl.edu, encouraging visitors to register their tag series in this database. Duplication of effort will this way be avoided

- There is a need for awareness programmes addressed to fishermen and other stakeholders in order to improve the efficiency of the tagging programmes (practical materials, reward, etc…)

Principal guidelines to minimize
disturbance/damage to turtles by tagging
(to be integrated in Manual on Marine Turtle Tagging in the Mediterranean)

Metal tags

- Do not use Style 1005-49 metal tags (National Band and Tag Company (NBTC) USA)

- Use size 681C - for turtles over 30 cm CCL

Plastic tags

- Do not use Jumbo tags (Dalton supplies Ltd, UK) for turtles smaller than 50cm CCL

- Do not use Rototags (or any other tags) for turtles smaller than 30 cm CCL

- Do not use tags in juvenile turtles in such a way as to constrict the growth of the flipper

Pit tags

- Do not use PIT tags (Passive Integrated Transponder) in turtles smaller than 30 cm CCL

- Use PIT tags under the scales or between the digits, in the muscle, on the front left flipper.

General

- Do not use tagging methods proven to be unsatisfactory

- Do not tag a turtle on her way up the beach or during egg-laying. Tag after the egg chamber is covered or if the turtle is on her way back to the sea.

- Do not turn turtles over for tagging

ANNEX III

Inventory of Tagging Projects in the Mediterranean
Please fill in a separate form for each project

Country	
Project/Area	
Brief description	
Name of contact person	
Full name and address of organization/institution	
E-mail	
Tel/fax	
Alternate contact point	
Alternate address	
E-mail	
Tel/fax number	
Tagging on:	Beaches /At Sea /Rescue Center
Tag types used by project Mention makes, sizes, metal/plastic, colour Please give full details, including if possible tag ranges	
Is combination tagging undertake (e.g., Plastic/PIT tag)	
Place tag is usually applied (front/rear flippers or location of PIT tag)	
Return address/es if any	
Date (tagging) project started	
Are the tag series registered in the ACCSTR tag inventory **accstr.ufl.edu** (if not please do)	
Were there any other projects in the past, or ongoing, in your working area	
If you know of any other ongoing or past tagging projects in your country please provide contact details	