EDITORIAL:

Hype[1]

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Exhibit 1. Commenting on incidental catch, the long time to reach maturity, and mortality at the egg stage, Musick (2000) concludes: "The bottom line is that all these factors have resulted in sea turtle populations being pushed to the brink of extinction world-wide."

In 1996, more than 12,000 green turtles (*Chelonia mydas*) came ashore on Raine Island on a single night (Jessop *et al.* 1999). Comparable nesting occurred there in 1984 (Raine Island Corporation 1985). The Raine Island population may well be vulnerable to various adverse factors. But with the available indices on nesting (Fig 1) it is hard to discern a downward trend (Fig 1); it is not on the brink of extinction. Green turtle nesting at Tortuguero has almost tripled since 1971 (Bjorndal *et al.* 1999). Striking increases in the number of eggs deposited on the Sabah Turtle Islands have taken place (Basintal & Lakim 1994). Sizeable populations of this species nest on Ascension Island, Tromelin, Europa, Aves Island, and in Suriname; there is no evidence of ongoing declines at these rookeries. Populations of green turtles in Hawaii and Florida are recovering.

Olive ridleys (*Lepidochelys olivacea*) still aggregate in huge numbers in Costa Rica, Mexico, and India. Densities are such that many eggs are destroyed by the turtles digging up each other's nests; nesting numbers at some of these beaches may be approaching carrying capacity during large arribadas. To say that sea turtle populations have been pushed to the brink of extinction world-wide is hype. But perhaps this is true of particular species?

Exhibit 2. "The hawksbill (*Eretmochelys imbricata*) is a Critically Endangered species throughout its range" (Mortimer 1998). The IUCN designation of Critically Endangered depends largely on the claim that the number of hawksbills in the world has decreased by 80% over the last 3 generations, something not universally accepted. Even if this were true, it would not mean the species is Critically Endangered throughout its range. In fact, hawksbill nesting is increasing in the Yucatan, on Mona Island (Puerto Rico), on Cousin Island in the Seychelles, and it appears stable on a number of other monitored beaches (references in Mrosovsky 2000). In Australia, arguably the country with most hawksbills, this species is listed as Vulnerable, not the highest category of threat in that country's classification.

Exhibit 3. Some forms of hype are more subtle than exaggerated statements about the brink. They involve understatements and mentioning encouraging developments in a lukewarm way that avoids conveying their positive nature. Putting the worst construction on things has already been criticised in the pages of this newsletter (Godfrey 1997; Pritchard 1997). Only one additional example is included here. Fig. 2 plots the number of nests of olive ridleys in Sergipe, Brazil (Marcovaldi 2001); the trend up is significant, highly so with an $r^2 = 0.95$ and $p<0001$. Yet the text of the paper reporting these data says that "the overall pattern seems to be steady, with a yearly mean of 200-400 nests."

Exhibit 4. Hype does not concern only population sizes and trends. Consider the following statement: "extirpation of loggerheads from X'cacel would eradicate 30% of the mtDNA diversity in Atlantic populations (Encalada *et al.* 1999)." But the samples on which the 30% figure is based came not only from X'cacel but from both there and Cozumel (Encalada *et al.* 1999). Because haplotype frequencies were not significantly different between these two places, the samples were pooled. So if there were no significant differences, even if X'cacel were paved over with solid concrete, some of the genetic diversity would be preserved by turtles nesting on Cozumel. One wonders how many of the 3 unique haplotypes found in this study were represented in Cozumel nesters.

Another caution about accepting that 30% of the mtDNA diversity would go down if X'cacel were destroyed is that loggerheads (*Caretta caretta*) also nest at Guanacabibes and the Isle of Pines in Cuba. For a turtle, these places are not at all far from the Yucatan. Until data from such nearby places are available, some caution about genetic diversity is in order.

It is heartening to learn that the threat to X'cacel has been repulsed, because there are plenty of valid reasons for looking after the turtles there. But is it really

[1] Hype, short for hyperbole, excess, exaggeration

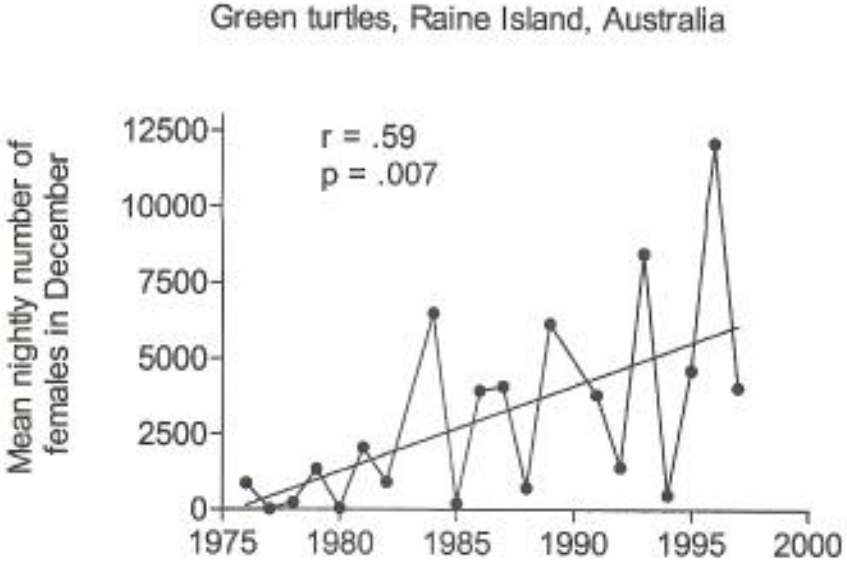

Figure 1. Index of green turtle nesting at Raine Island, Australia. (Data from Table 1 in Limpus and Nicholls 2000). Values for 1974 are not given in this table, but the legend of Fig 1 indicates that although not graphed there, large numbers were nesting that season. However, even if a value of 11,000 were included for 1974, there is still no downward trend.

essential to concoct biodiversity hype to make the case? Presumably the reason is that hype provides some short-term gains in fund raising and activating campaigns. But there is also a downside.

Negative consequences of hype. As well as any short-term tactical gains, the potential damage caused by hype must be considered. How can sound conservation and management proceed, and priorities be appropriately set, if people do not have as accurate information as possible on the biological situation? Also, telling people that species are facing a high risk of extinction in the near or immediate future when manifestly this is not so undermines IUCN and its red lists. It undermines the credibility of those who promulgate such views. Sooner or later, the "truth will come to light."

Perhaps worse are the insidious consequences of enveloping conservation biology in exaggeration and unsubstantiated assertions. It encourages people entering the field to think it is the norm to automatically and uncritically say a species is on the brink of extinction. When their mentors, supervisors, and seniors are putting such statements in their grant proposals and pamphlets to the public, it becomes the accepted practice. Hype perniciously downgrades precisely what one should wish to encourage in scientists: an overriding respect for the truth. Hype corrupts.

Of course, the inspiration for conservation does not come only from scientific considerations. Some people have religious or other grounds for wanting no turtles killed (cf Pritchard 2000). Many biologists would probably find it acceptable that some people wish to make the eating of turtles a taboo in their culture — provided they do not try to force their views on other cultures. If people place greater moral disapproval on killing a turtle than killing a fish, that is their prerogative. But the scientific aspects of conservation — if they are to be truly scientific — must necessarily stand outside personal values. Their authentication comes from providing — as far as is possible — a truthful representation or explanation of the facts. Therefore, if biological considerations are brought into the reasons for conserving turtles, we must strive as much as possible to make the science accurate, and to resist alarmist statements that ignore obvious facts, such as that on some beaches turtles are nesting in densities so great as to result in them digging up thousands of eggs of those that nested before.

Most turtle biologists — *if* they were being dispassionate — would accept, I believe, that some sea turtle populations are in a dire predicament, but that others are holding their own or even increasing. They would have to accept this, because that is the truth of the matter, however much some may try to conceal this from the public.

Separation of assessment and action. To the extent we want a scientifically based conservation, we should start with the facts. As Mace and Lande (people who have been prominent in the development of the red listing system) put it in 1991:

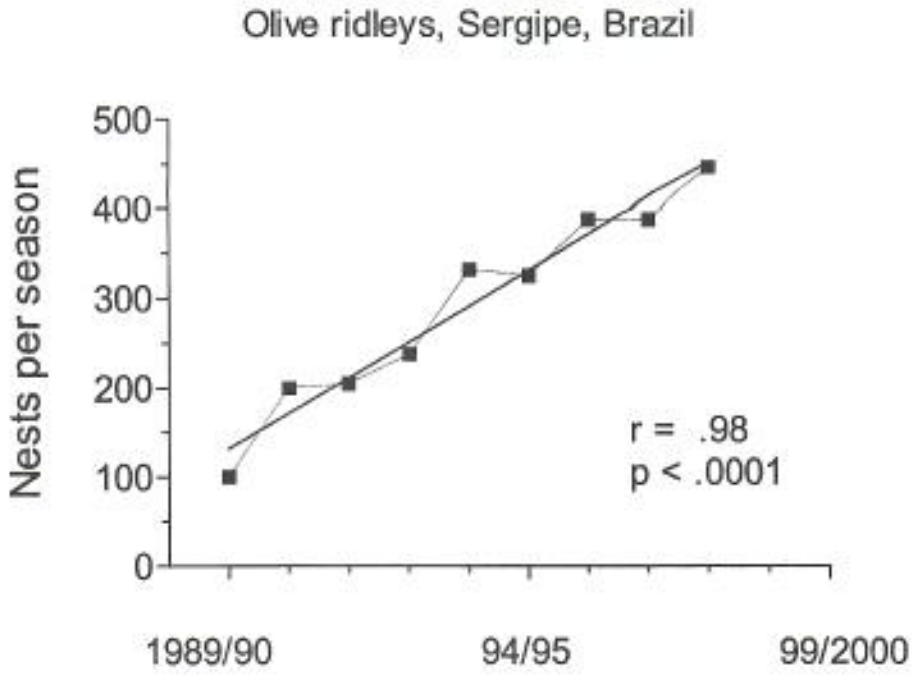

Figure 2. Number of olive ridley nests laid in Sergipe (data from Marcovaldi 2001). The values have been read off a graph and are therefore approximate. However, the trend is also up using nonparametric statistics ($p<.0001$, Spearman's rho = .98). The data for the 1998/99 season have been excluded because "the monitoring effort was reduced" then. This implies that monitoring was reasonably standard in the other years, and the paper mentions that "regular monitoring was begun in 1982." The Spanish version uses the word "sistemático". Should some of the changes reported be attributable to changes in monitoring, then even though the value of this work would be diminished, the discrepancy between what the text says and the graph shows would still stand as a classic example of hype of the understatement variety.

> *It is important to distinguish systems for assessing threats of extinction from systems designed to help set priorities for action. The categories of threat should simply provide an assessment of the likelihood that if current circumstances prevail the species will go extinct within a given period of time. This should be a scientific assessment, which ideally should be completely objective. In contrast, a system for setting priorities for action will include the likelihood of extinction, but will also embrace numerous other factors, such as the likelihood that restorative action will be successful; economic, political, and logistical considerations; and perhaps the taxonomic distinctiveness of the species under review.*

To this list one might add the charisma or huggability of a species, personal preferences and ethics, and religious beliefs. But if such considerations are to be allowed to override a scientific assessment of survival prospects, then — and this is the essential plea of this article — lets give up the pretence of being concerned about the biology and the actual risk of extinction, and discuss only why one might want to conserve turtles. If it stems from some overriding ethical conviction, lets be open about that; there is room for diversity.

But if such convictions are wrapped in pseudo science and hype, then others may legitimately object. Those others should include all who are trying to get the facts straight, trying to understand the biology despite the gaps in information and the intrinsic difficulties of sea turtle demography, and all those who value the assessment stage of Mace and Lande's programme.

That objections are so few makes one think that most sea turtle conservationists are happy with the hype and unconcerned with scientific substantiation — or are too intimidated to voice their opinions. When can we stop pretending? Most sea turtle species are not on the brink of extinction, but some populations are. Let's start with the facts, and base our actions accordingly (Mrosovsky 1983).

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Marine Turtle Nesting in Kuriat Islands, Tunisia, 2000

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Three marine turtle species are observed in Tunisian waters. The green turtle, *Chelonia mydas*, is rare, the leatherback, *Dermochelys coriacea*, is regularly observed (Bradai & El Abed 1998) and the loggerhead, *Caretta caretta*, is common and reproduces on some beaches (Bradai 1995; Laurent *et al.* 1990).

The Kuriat islands (35° 48'05"N, 11° 02'05"E) lie 18 km from the coast of Monastir and represent the most important nesting site of *Caretta caretta* in Tunisia. Kuriat islands consist of two small islands: Little Kuriat (Kuria Sgira) which is *ca.* 0.7km² and the larger Great Kuriat (Kuria Kbira) which is *ca.* 2.7km² in area. Little Kuriat has a total of 800m of sandy beach situated in the north-eastern part of the island whereas the rest of the coastline is rocky or marshy. Almost one third of the Great Kuriat shoreline is rocky and enormous deposits of *Posidonia oceanica* detritus further restrict the accessible nesting sites (Bradai 1996). The principal nesting beach lies on the western coast and is almost 900 m in length. Although both islands are closed to visitors at night, they play host to hundreds of day-trippers.

The beaches of both islands have been the object of monitoring since 1997 to enumerate and protect nests,

Marine Turtle Newsletter

Issue Number 96. *April 2002.*

Egg collectors at work, Sangalaki Island, Indonesia (see Obermeier pp27-28).

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ISSN 0839-7708