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Can ecotourism be developed around marine turtles in French Guiana? (Godfrey & Drif pp. 1-4).

IN THIS ISSUE:

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Guest Editorial:
Developing Sea Turtle Ecotourism in French Guiana: Perils and Practicalities

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Sea turtle conservation programmes traditionally sought to limit human access and presence on nesting beaches, for example by creating exclusionary parks or by limiting development. This was based on the idea that the reproductive activities of sea turtles were easily disrupted, and indeed there are many examples of the negative correlation between human presence and nesting activities by sea turtles. However, in the last decade there has been a change in the thinking of many, with increasing interest in augmenting human visitation to nesting beaches in the form of ecotourism. Even the Marine Turtle Specialist Group of the Species Survival Commission of the World Conservation Union has endorsed ecotourism as a solution on a global scale for the problems facing conservation programmes (IUCN 1995). Currently, when describing nascent conservation activities involving sea turtles, it is almost axiomatic to present the idea that developing ecotourism is a desirable goal (e.g. Drake 1996; Hirth *et al.* 1993, Nichols *et al.* 2000).

The exact definition of ecotourism is elusive, but in general it encompasses more than simply tourism focussed on viewing nature or natural areas. Ecotourism was recently defined as :

> **"....***environmentally responsible, enlightening travel and visitation to relatively undisturbed natural areas in order to enjoy and appreciate nature (and any accompanying cultural features both past and present) that promotes conservation, has low visitor impact, and provides for beneficially active socio-economic involvement of local populations.***"** (Ceballos-Lascurin 1996).

For sea turtles, the relatively easy access to nesting beaches gives an unparalleled opportunity for a close and safe look at a large wild animal which inspires much of the public, and thus can be the focus for the activities that are part of the ecotourism model. Nevertheless, according to the above definition, there must also be promotion of conservation and socio-economic benefits to local communities. Yet when ecotourism is recommended as a proper course of action for sea turtle nesting beaches, there are rarely any guidelines or goals presented by which the success (or failure) of ecotourism ventures can be evaluated. For instance, simply encouraging greater visitation by tourists does not fit the definition of ecotourism, and indeed there is an underlying tension between the desire to preserve and conserve the nesting site while at the same time tapping into the economic value of tourism through development of visitation. Tourism itself is a dynamic and complex process, which must answer to the vagaries of supply and demand. Encouraging an increase in the number of people in a natural area embodies a number of potentially negative impacts, from environmental degradation to the social disruption of small local communities, that must be taken into consideration, no matter how well-intentioned the initial objectives are for ecotourism. There is growing evidence that many ecotourism initiatives have failed to achieve their intended goals (Ross & Wall 1999). It is within this context that we discuss the potential impact of ecotourism in French Guiana.

French Guiana has 3 species of sea turtle that regularly visit its beaches: leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*), and olive ridley (*Lepidochelys olivacea*) turtles. On the beaches of Awala-Yalimapo, great numbers of leatherbacks come to lay their eggs each year (Girondot & Fretey 1996). This beach is easily accessible by car from the major cities in French Guiana, making for a large potential to develop marine turtle ecotourism, and to increase the number of people visiting the beach. The area is situated within a large estuary complex of the Mana and Maroni rivers, and its beaches and coastal ecosystem are fragile and dynamic. Traditional social systems and values are still maintained in the small Amerindian villages of Awala and Yalimapo. Recently, several conservation projects dealing with sea turtles in French Guiana have expressed interest in developing ecotourism on different

beaches, from Montjoly beach in Cayenne to Awala-Yalimapo beach. Thus, it is our intention to look at the potential impacts in French Guiana of marine turtle ecotourism, especially in terms of how it is practiced elsewhere, and reflect on how it may be best to proceed.

One of the most famous examples of a sea turtle programme that embraces ecotourism wholeheartedly is Projeto TAMAR, in Brazil. Celebrating its 20th anniversary this year, TAMAR (an acronym for *tartaruga marinha*, or marine turtle in Portuguese) is a network of more than 20 conservation stations spread along the Brazilian coast and some of the oceanic islands. Its main objectives are conservation of turtles, community participation and development, and education (Marcovaldi & Marcovaldi 1999). The last two goals are being met by ecotourism, the proceeds of which are then reinvested towards achieving the first goal: conservation. Ecotourism within Projeto TAMAR is tailored to meet the needs of each specific conservation station, but in general it is manifested in three basic structures: its visitor centres, its turtle-watch programmes, and its shops. The three are inter-related and often are cross-referenced, so tourists at the visitor centres are not only encouraged to purchase items but also to take part in a turtle-watch programme, if available. The turtle watch programme consists of paying a fee to be taken to the nesting beach by a trained biologist. Projeto TAMAR is broadly considered a success in ecotourism, (although there is a lack of detailed socio-economic studies of the programme itself), indeed TAMAR has been proposed as a model for sea turtle conservation worldwide by the vice president of Conservation International (Mast 1999).

But is this form of development and exploitation of ecotourism the key to sea turtle conservation in French Guiana? Is there a similarity of available infrastructure, when comparing Brazil and French Guiana? In reality, there are great differences between the two countries that would make it difficult to achieve the same level of success as has been attained in Brazil. First, there are simply far more tourists in Brazil, and they are present for most of the year. TAMAR takes advantage of this feature with its permanent visitor centres, with tanks that hold adult sea turtles, museums with various displays, and other interactive exhibits. These centres are visited year-round, and a peak of the number of tourists at the biggest visitor centre, in Praia do Forte, Bahia, occurs in July, which is outside of the nesting season, when it is not possible to see wild turtles on the beach. In contrast, tourism is seasonal in French Guiana, which would mean numbers of tourists at potential visitor centres would be low for much of the year. In Brazil, the visitors centers are sustained in part by selling souvenirs and t-shirts year round; this would be difficult to duplicate in French Guiana, given the seasonal nature of tourism and also the lower number of visitors. In addition, Brazil has many tourism attractions besides marine turtles, which help to balance the pressure and focus of tourist activities. In contrast, there are few attractions available for visitors in French Guiana, and if ecotourism at nesting beaches was developed, the focus of attention would be even more intense than it is in Brazil, bringing with it increased pressure on the animals, ecosystem, and local communities.

Secondly, nesting density is very low on mainland Brazil, making it difficult for tourists to be successful in finding a nesting turtle by themselves, while in French Guiana, nesting density reaches levels unparalleled on leatherback nesting beaches in other countries. It means that the focus on marine turtles is diffuse in Brazil, while in French Guiana, it would be concentrated on a few beaches, which would increase potential pressures. For example, in French Guiana, there is little incentive to pay to join a turtle watch programme, such as TAMAR's "Tartaruga by Night" programme, except perhaps to receive a guided tour from an experienced biologist. But, in Brazil, the tourists rarely see a nesting turtle during the tour, thus the focus is generally the information provided by the biologists or a release of hatchlings (Vieitas & Marcovaldi 1997). This would not be the case in French Guiana, where turtles are easily encountered; thus perhaps an alternative option would be to develop a cadre of local guides, drawn from local communities such as Awala Yalimapo whose residents already have extensive experience with sea turtles, and could provide general guidance to tourists whose focus would be watching the turtles. This system is currently being developed on other high-density nesting beaches such as Ostional Beach and Tortuguero Beach in Costa Rica, although the success of these programmes have not yet been proved (Jacobson & Lopez 1994).

Thirdly, there is the general problem of increasing the number of people visiting the beaches, which would be a result of developing ecotourism at least in less populated areas, such as Awala-Yalimapo. In the case of Brazil, much of the tourism development occurred before or during the implementation of Projeto TAMAR, and hence its programmes were tailored to meet the demands of an area already well developed for large numbers of people. In contrast, in French Guiana there is only a rudimentary infrastructure available to meet tourist demands, which currently keeps the number of

visitors at a low level. If more tourists were wanted, then infrastructure would have to be developed, for instance more hotels or inns must be built to accommodate people, more workers would have to be brought in to service the increased number of visitors, and so on. But an increased number of people often results in negative impacts on sea turtles, both directly and indirectly.

For instance, greater development means greater potential for night-time lighting, which can negatively affect both nesting adult turtles and emerging hatchling turtles (Witherington 1992; Peters & Verhoeven 1994). An increase in foot traffic and human visitation could degrade the fragile beaches of Awala Yalimapo, and it is often the case that increased human presence on nesting beaches causes nesting sea turtles move to different areas or beaches to nest (e.g. Godfrey *et al.* 1998). One can easily imagine that as increased numbers of tourists arrive in Awala-Yalimapo, decreased numbers of turtles will visit the main nesting beach, and the females seek more remote beaches with less disturbance. In this case, would it be necessary to begin to ferry tourists to remote beaches, in search of sea turtles? Greater environmental impacts from increased boat traffic and human visitation of fragile remote beaches would likely ensue. There are also many potential indirect problems from increased numbers of tourists, such as increased garbage production, which in turn can affect the population of predators of sea turtles. The availability of more refuse may translate into a greater number of feral dogs who prey on eggs and hatchling turtles (Fretey 1981); a similar situation is thought to have occurred in the eastern Mediterranean with fox populations (Brown & McDonald 1995).

In addition to the biological impacts of ecotourism development, there is also the threat of increased social pressure and disunity in small communities caused by a large influx of outsiders. As hotels and inns are constructed in Awala-Yalimapo, so too will be restaurants, bars, and entertainment centres, and with them will come more people to work in the service industry of tourism. Although it is impossible to predict with precision, it is easy to recognize the potential threats to the traditional culture of the local Amerindians caused by an increase in the number of people visiting and working/living in the area. There is also the fact that the tourism industry is a big business, driven by the market economy, which makes it likely that larger and wealthier corporations will decide the fate of ecotourism projects, rather than the local communities who have played a large role in conserving the natural resource in the first place. Related to this is the difficulty in ensuring that at least part of the tourist revenue that is brought into the area stays in the local community, rather than almost all in the hands of the larger developers, and other outside groups (Campbell 1999).

Finally, it is necessary to consider how ecotourism ventures could be made sustainable. As the availability of turtles on the beach is seasonal, will it be necessary to develop other tourist attractions in the area, perhaps in the inland forests or on some of the isolated beaches, to provide activities for visitors outside of the nesting season? What are the potential impacts of these associated ventures, in terms of the ecosystem? Where will the development end? And is it worth the risk of investing in developing an ecotourism programme that may falter because it is not sustainable? Social problems and pressures caused by rapid investment in small communities followed by an economic depression are important issues that should not be ignored when considering development.

But is it all bad news for the potential of ecotourism development? Does Projeto TAMAR have nothing to offer by way of example for French Guiana? The answer is a cautious "no". Firstly, one of TAMAR's greatest strengths is its ability to use the available workforce in local communities. The same can be done here in French Guiana, where, for example, local Amerindians have extensive experience with sea turtles, and for the most part are already exploiting tourism potential on a small scale by providing carbets (a traditional open-sided hut used by local Amerindians) and advice to visitors seeking to experience sea turtles. This local workforce and existing activity could be the focus of tourism development, with limits clearly established for the maximum number of visitors that can be supported, while at the same time ensuring that incoming tourist dollars remain in the local community, which is often a concern in other sea turtle ecotourism projects (Campbell 1999). Secondly, the extensive network of bases of TAMAR have been tailor-made for particular needs of each area, which has likely contributed to the success of TAMAR in the different regions where it is located. The idea of working on a case-by-case basis for ecotourism is an important one, and should not be ignored here: the needs and possibilities of the local areas should be the focus of design and planning, rather than the specifics of programmes elsewhere. That being said, the big difference between ecotourism in French Guiana and in Brazil is that in the latter, the development of ecotourism was a response to already growing or sometimes high levels of tourism. But in French Guiana,

marine turtle ecotourism development means the creation of a greater concentration of tourists in a fragile ecosystem that presently has relatively few tourists. This makes it difficult to predict the best way to meet the needs and requirements of a large number of tourists, and is likely to prejudice the outcome of any such ventures towards the negative.

In any case, the annual number of tourists visiting the nesting beaches of French Guiana is growing each year. Thus, development of ecotourism infrastructure is going to take place. The question is how much and to what extent, and whether it can be done in such a way as to impact the turtles the least while benefiting the local economy the most. We recommend that guidelines and criteria for evaluation be established before the implementation of ecotourism programmes; these criteria must encompass not only the biological impacts but also the social and political issues surrounding development (Scheyvens 1999). The focus should not be so much on emulating other programmes elsewhere, but finding solutions to problems and situations specific to French Guiana.

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BROWN, L., & D.W. MACDONALD. 1995. Predation on green turtle nests by wild canid at Akyatan beach, Turkey. Biological Conservation 71: 55-60.

CAMPBELL, L.M. Ecotourism in rural developing communities. Annals of Tourism Resarch 26: 534-553.

CEBALLOS-LASCURAIN, H. 1996. Tourism, ecotourism and protected areas. IUCN-World Conservation Union, Gland, Switzerland, 301pp.

DRAKE, D.L. 1996. Marine turtle nesting, nest predation, hatch frequency, and nesting seasonality on the Osa Peninsula, Costa Rica. Chelonian Conservation and Biology 2: 89-92.

FRETEY, J. 1981. Tortue marines de Guyane. Éditions du Léopard d'Or, Paris, 136pp.

GIRONDOT, M., & J. FRETEY, 1996. Leatherback turtles, *Dermochelys coriacea*, nesting in French Guiana, 1978-1995. Chelonian Conservation and Biology 2: 204-208.

GODFREY, M.H., F. DEMIRAYAK, & C. WHITMORE. 1998. Status of marine turtles at Belek beach, Turkey, in 1997. Dogal Hayati Koruma Demgi (Society for the Protection of Nature), Istanbul, Turkey. 36 pp.

HIRTH, H. H., J. KASU, & T. MALA, 1993. Observations on a leatherback turtle *Dermochelys coriacea* nesting population near Piguwa, Papua New Guinea. Biological Conservation 65: 77-82.

IUCN/Species Survival Commission Marine Turtle Specialist Group. 1995. A Global Strategy for the Conservation of Marine Turtles. IUCN-World Conservation Union, Gland, Switzerland, 24 pp.

JACOBSON, S.K. & A.F.LOPEZ. 1994. Biological impacts of ecotourism: tourists and nesting turtles of Tortuguero National Park, Costa Rica. Wildlife Society Bulletin 22: 414-419.

MARCOVALDI, M.Â. & G.G. MARCOVALDI, 1999. Marine turtles of Brazil: the history and structure of Projeto TAMAR-IBAMA. Biological Conservation 91: 35-41.

MAST, R.B. 1999. Common sense conservation. Marine Turtle Newsletter 83: 3-7.

NICHOLS, W.J., K.E. BIRD, & S. GARICÍA. 2000. Community-Based Research and its Application to Sea Turtle Conservation in Bahía Magdalena, BCS, Mexico. Marine Turtle Newsletter 89: 4-7.

PETERS, A. & K.J.F. VERHOEVEN. 1994. Impact of artificial lighting on the seaward orientation of hatchling loggerhead turtles. Journal of Herpetology 28: 112-114.

ROSS, S. & G. WALL. 1999. Ecotourism: towards congruence between theory and practice. Tourism Management 20: 123-132.

SCHEYVENS, R. 1999. Ecotourism and the empowerment of local communities. Tourism Management 20: 245-249.

WITHERINGTION, B. 1992. Behavioral responses of nesting sea turtles to artificial lighting. Herpetologica 48: 31-39.

VIEITAS, C.F. & M.Â. MARCOVALDI. 1997. An ecotourism initiative to increase awareness and protection of marine turtles in Brazil: the Turtle By Night program. Chelonian Conservation and Biology 2: 607-610.