

The Turtle Tragedy

By Tom Harrisson

The world's turtles are decreasing at a rate which, if unchecked, could mean their extinction before the end of the century. In March this year a group of marine turtle specialists from all over the world met at IUCN headquarters in Switzerland to discuss what action could and should be taken.* Professor Tom Harrisson, who is a specialist on the turtles of the South China Sea and Vice Chairman of the SSC Turtle Group, attended the meeting and drafted the first version of the agreed statement, the opening paragraphs of which are quoted at the beginning of this article, and the recommendations for action - 'the now attack' - at the end.

THE present world situation for the great marine turtles is tragic. The presence in 1969 of many turtles in a few places and many turtle products in markets all over the world may obscure this fact from the public. But the scientific evidence is overwhelming that, after a long period of slow decline, we are now at a time when this decrease is accelerating into a catastrophic depopulation. Like many species once seemingly inexhaustible, the seven surviving species of sea turtle are now faced with massive depletion and extinction inside this century.

'The great turtles are vulnerable from birth to death. For any of the species to survive at all, the female turtle must come ashore and lay eggs. Then she can easily be killed on the beaches, while her eggs are taken in millions for food. At sea both sexes are easy prey to the incessantly increasing demand for turtle meat, turtle leather, turtle shell and turtle oil. Nowhere in the seas of the world is any turtle at any age, today or tonight, safe from the imminent danger of death by human predation.

'Under these critical conditions, conservation on a correspondingly massive scale becomes of urgent and obvious importance if the world is not to lose a natural resource of such economic, scientific and aesthetic importance. Therefore active scientific conservation must take priority over all other considerations. Though there are still serious gaps in our knowledge many of the immediate matters of conservation concern are now known. This information provides a basis for effective action if supported by other measures.'

These are the opening paragraphs of a statement issued by a group of specialists active in turtle research and conservation after a five-day meet-

*From Central and South America came Dr J. P. Schilz (Surinam) and Dr A. E. Montaya (Mexico), as well as Drs Carr and Pritchard for the Caribbean and Guyana; from Africa and the Middle East Professor H. F. Hirth (Seychelles, Aldabra and Yemen) and Mr G. H. Hughes (S. Africa); from Australia and the Pacific Dr H. R. Bustard (Queensland especially) and Professor J. Hendrickson (Hawaii); from Asia Dr E. Balasingam (Malaya), Mr G. S. de Silva (Sabah and Ceylon) and the present writer (Philippines, Sarawak, Thailand); and for temperate seas, especially in Europe, Professor L. D. Brongersma of Holland. These specialists did not necessarily participate as official representatives for any particular country. They reported the position in each case, based on their own direct study and knowledge.

ing last March at Morges in Switzerland, organized by the WWF. They came as widely representative group, most of the others only by their participation in scientific papers, monographs and reports. The leadership of Mr Herbert Mills, Executive Director of WWF, Professor Archie Carr, Chairman of the SSC Turtle Group, with Dr Peter Holloway, Secretary of SSC, as

This pooled turtle power has raised many issues and problems, bringing together specialists from around the oceanic world in a formal session over 30 hours. There were also two sessions where slides covering the whole spectrum of turtle life, including the remarkable range of life patterns inside certain frameworks, were shown. A major sector of uncertainty was an apparent gap in the hatching of turtles of the principal species on the laying beaches on until a gap of a year and in some cases in Asia, a gap of six to eight years. This wide mystery, the solution of which is a major conservation programme.

Similarly, the finely developed tagging of turtles to lay on their movements, intervals and migrations, remains a major problem. From the point of view of defining the acute problems of oceanic conservation, these are the most acute.

Those present were unanimous in their opinion that many species, often all species; and the need for international efforts in the form of programmes of hatching large numbers of turtles on the beaches and the understandable attitude of conservationists to conserve their own turtles this time by others.

This raised the issue of artificial beaches, island turtle experience of the specialists and how to ensure highly efficient hatchlings under virtually any conditions. The conservation issues involved in these matters remain to be ironed out.

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ing last March at Morges in Switzerland, sponsored by IUCN and supported by the WWF. They came from all parts of the world to make a widely representative group, most of whom had previously known most of the others only by their published work – which is in excess of 100 scientific papers, monographs and books – and met under the chairmanship of Mr Herbert Mills, Executive Director of WWF (USA) and Professor Archie Carr, Chairman of the Survival Service Commission's Turtle Group, with Dr Peter Pritchard as rapporteur and Dr Colin Holloway, Secretary of SSC, as executive secretary.

This pooled turtle power hatched a mass of short-term and long-term issues and problems, bringing out differences as well as many parallels from around the oceanic world. Discussions of these kept the group in formal session over 30 hours, plus many more informally. Impressive also were two sessions where most of the participants showed films or slides covering the whole spectrum of this combined experience, illustrating the remarkable range of local and other variations in turtle behaviour patterns inside certain frameworks which, in most cases, could now be defined even where not yet fully understood. Particularly significant in this sector of uncertainty was an agreed and total ignorance on what happens to hatching turtles of the principal species *after* they scramble into the sea at the laying beaches on until well towards maturity. At the least there is a gap of a year and in some cases, as with all the species in South East Asia, a gap of six to eight years. These 'missing years' remain a world-wide mystery, the solution of which is clearly germane to any complete conservation programme.

Similarly, the finely developed homing mechanisms which bring the same tagged turtle to lay on the same beach time after time after long intervals and migrations, remain very incompletely understood. These and many other problems were discussed – and usually clarified – primarily from the point of view of defining future research and relating this to the acute problems of oceanic conservation.

Those present were unanimous in reporting declines of some turtle species, often all species; and often on a drastic scale. All were agreed on the need for international effort and mutual support for much stepped-up programmes of hatching large quotas of turtles' eggs to offset excessive collection on the beaches and slaughter at sea. Here, a major problem is the understandable attitude of some countries who feel that when they conserve their own turtles this only benefits uncontrolled offshore exploitation by others.

This raised the issue of controlled situations – scientific farming, artificial beaches, island turtle sanctuaries, and so on. The research experience of the specialists clearly provided much of the necessary know-how to ensure highly efficient systems for hatching the eggs and rearing the hatchlings under virtually any conditions, but they did not always agree on the conservation issues involved. Some pronounced regional differences of opinion remain to be ironed out.

The other big question mark was the demonstrated absence of collateral, up-to-date information from long coastlines where no studies have been

undertaken but where turtle populations are believed to survive, notably in sectors of Africa, mainland Asia, northern Australasia and the Pacific. A preliminary scheme for filling these gaps developed from the meeting: it is hoped to survey turtle resources in presently blank areas as a matter of urgency.

Seven Points

Of the other issues discussed in detail, the most difficult was clearly the threat posed by new or stepped-up forms of commercial exploitation of the adult turtle, both ashore and afloat. The need for another level of research, more sociological than biological, thus emerged. This serious knowledge gap was dealt with as one of seven major points spelled out in a final statement. These seven points were:

First of all, top priority must go to action on the beaches. There must be maximum incubating and hatching of the eggs of all species in all their natural breeding grounds. Proved methods must be used to obtain optimum yields of hatchlings returned to the sea under the best possible conditions. Where this is not at present done new efforts must be made to generate such measures. Ideally a large proportion of the natural egg-lay should be allowed to return to the sea.

In the sea the problems are more complicated. Present uncontrolled action in international waters is capable of negating conservation measures ashore. It therefore becomes imperative to survey and analyse the existing exploitation of marine turtles outside the breeding areas, providing a basis for plans to regulate the scale and size of commercial operations. The industries concerned in exploitation of the turtle resource could destroy all these largest marine reptiles, and thus their own basis for existence, unless planned controls are brought into force without delay. Compiling the necessary trade and other economic data is, therefore, the second priority for conservation action.

Thirdly, it is necessary to inform and educate the public on the overall turtle situation. This includes not only the people in the breeding and hunting areas, but perhaps even more those in the consumer markets of temperate countries. It is *at the consumer end* that the whole problem begins – with those who, knowingly or unwittingly, for profit or pleasure, are accessories to an accelerated and often cruel exploitation conducted without sufficient regard for the future of this superb life form.

Fourthly, it is clearly in the interest of those countries which still have turtle breeding beaches to strengthen conservation measures ashore and to exert influence to prevent 'their' turtles from over-exploitation outside territorial waters. This aim can only be achieved by international co-operation.

It must be emphasised that a number of countries with significant turtle resources have taken no steps to survey or in any way manage their turtle populations. The assessment of these unrecognised populations is another matter for immediate concern. Beach surveys and the activation of national interest, based on accurate information, are required in many countries as a basis for informing the relevant governments of their position – and if necessary advising them on appropriate action.

A fifth line of action would be the setting up of totally controlled refuge situations for turtles. There are, for instance, significant potentials in a plan to establish a set of suitably situated islands in the Atlantic, Pacific and Indian Oceans as total sanctuaries under scientific management, ensuring perpetuation of the endangered species as well as providing a reservoir of stock available for research.

The need for expanded and intensified research on all aspects of turtle biology, ecology, etc, remains an important activity requiring wide support at the national and international levels. This is especially important for the solution of several difficult long-term problems. In particular there is an urgent need for exact information on such subjects as effective restocking of maintenance quotas, procedures for economic breeding and rearing to maturity under controlled conditions, feeding grounds and oceanic movements and much else. Fragments of this information in fact exist, but require co-ordination and then dissemination through an international agency.

Sixth, then, a central focus must be established for the co-ordination of conservation efforts and of conservation-oriented research. This can be done through IUCN and a direct link with the Chairman and members of the Turtle Group inside the framework of the Survival Service Commission. It will be necessary to obtain the services of a qualified scientist with appropriate field experience.

Finally, periodic meetings of turtle specialists will continue to be necessary in order to deal with problems both old and new. In the future such meetings should include not only scientific but also commercial and other relevant interests. If all of these can agree on at least certain minimum principles and policies the other lines of effort are likely to succeed without undue obstacles or delays caused by conflicts of interest.

To sum up:

- 1 Increased incubation and hatching programmes, using proved techniques.
- 2 Study and analysis of world exploitation patterns.
- 3 A broad information programme.
- 4 Beach surveys where data are lacking, followed up by expert advice as required.
- 5 Establishment of special sanctuaries under scientific management.
- 6 Appointment of a full-time officer to work with the Turtle Group inside SSC/IUCN.
- 7 Further meetings of specialists developing out of the initial experience from the meeting generously financed by WWF at Morges in March 1969.

These seven elements form a NOW-attack, essential if this part of the world's natural wealth is to be restored and maintained in perpetuity. Nothing less will do.

Fighting Pollution

By a unanimous vote the United Nations General Assembly has authorised the calling of an international conference in 1972 to consider ways in which nations could co-operate in the fight against the pollution of the environment.
