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CONFIDENTIAL

RAMSAR CONVENTION MONITORING PROCEDURE

REPORT NO.12: RIA LAGARTOS, YUCATAN, MEXICO

General Introduction

1. Each Contracting Party to the Ramsar Convention ("Convention on Wetlands of International Importance especially as Waterfowl Habitat" Ramsar, 1971) "shall designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance" (Article 2.1 of the Convention). The Contracting Parties "shall designate at least one wetland to be included in the List" (Article 2.4) and "shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List"(Article 3.1). Furthermore, each Contracting Party "shall arrange to be informed at the earliest possible time if the ecological character of any wetland in its territory and included in the list has changed, is changing or is likely to change as the result of technological developments, pollution or other human interference. Information on such changes shall be passed without delay to the organization or government responsible for continuing bureau duties" (Article 3.2).
2. These are the principal stipulations of the Convention concerning wetlands included in the Ramsar List. Successive meetings of the Conference of the Contracting Parties (held in 1980 at Cagliari, Italy, in 1984 at Groningen, Netherlands and in 1987 at Regina, Canada) have devoted special attention to the conservation of listed wetlands and to the best ways of avoiding 'change in ecological character'.
3. Conference Document C.3.6 of the Regina meeting ("Review of national reports submitted by Contracting Parties and Review of implementation of the Convention since the second meeting in Groningen, Netherlands in May 1984") included a section (paragraphs 66 to 107) entitled "Changes in the ecological character of listed wetlands". This section recalls that it is "essential that, after a wetland has been designated for the List, its conservation status should be maintained", and that "the concept of preventing 'change in the ecological character' is fundamental to the Ramsar Convention". Paragraphs 74 to 107 then review the various wetlands on the List where such changes have occurred, are occurring, or are likely to occur.

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4. During the discussion of these paragraphs, several delegates emphasized the importance of avoiding changes of this kind in listed wetlands and the Conference approved a Recommendation (C.3.9) on this matter. The Recommendation (text attached to the present document) urges Contracting Parties to take swift and effective action to prevent any further degradation of sites and to restore, as far as possible, the value of degraded sites; the Recommendation requests Contracting Parties in whose territory are located the sites identified in Conference Document C.3.6 as having incurred or being threatened by damage, to report to the Convention Bureau the actions undertaken to safeguard these sites.
5. At the fourth Meeting of the Ramsar Convention Standing Committee, the members (Pakistan, Canada, Chile, Netherlands, Poland, Switzerland, Tunisia and USA) and observers (United Kingdom, IUCN, IWRB and WWF) considered the best way of promoting the implementation of Recommendation C.3.9. A "Monitoring Procedure" (the text of which is attached to the present document) was adopted by the Standing Committee as a procedure to monitor Ramsar sites, and has been used since February 1988 by the Convention Bureau.

Ría Lagartos - general.

6. Mexico deposited its instrument of accession to the Ramsar Convention and Paris Protocol with the Director General of Unesco on 4 July 1986. On this occasion it designated one wetland, the "Ría Lagartos" in the province of Yucatán, an area covering 47,340 hectares, for the "List of wetlands of international importance". According to the documentation provided by the Mexican authorities, the area enjoys the legal status of refuge ("Zona de Refugio Faunística") following a federal decree dated 18 June 1979, and is currently managed by SEDUE (the Secretariat of State for Urban Development and Ecology) as an ecological reserve ("Reserva ecológica"). The document deposited by the Mexican authorities emphasizes the ornithological value of the site, whose importance for the flamingo Phoenicopterus ruber ruber is noted as outstanding.
7. In their "Directory of Neotropical Wetlands" Scott and Carbonell give a brief site description, as follows: "A series of small estuaries and saline coastal lagoons up to 2m deep, with fringing mangrove swamps. The lagoons are separated from the sea by a sand barrier and are flooded at high tides; there is some inflow of fresh water from seepage and local rainfall. Salinities range from 33 parts per thousand to 107 p.p.t. About 30,000 ha are permanently flooded; the remaining 18,000 ha dry out during the dry season". Scott and Carbonell emphasize the importance of the area as "the only regular breeding site for the Yucatán population of the Caribbean Flamingo". Under "threats"

they mention disturbance from tourists, particularly in power boats and destruction of flamingo feeding and nesting habitat for salt extraction.

8. There was no Mexican national report at the Third meeting of the Conference of Contracting Parties to the Ramsar Convention, held in Regina, Saskatchewan, Canada in June 1987. Nor was Ría Lagartos mentioned on the basis of other reports submitted to IUCN and IWRB, in document C.3.6.
9. From 20-23 April 1989, SEDUE organized a "Workshop for the management, protection and conservation of the flamingo and its habitat at Ría Lagartos, Yucatán". The participants included SEDUE and CINVESTAV (Centro de Investigación y de Estudios Avanzados del IPN, Unidad Mérida) personnel, Pronatura members, a representative of USFWS (Don Woodward) and Dr Bart de Boer of the Carmabi Foundation, who is New World coordinator of the ICBP/IWRB Flamingo Research Group. The Workshop approved a series of conclusions and recommendations, aimed at developing a general management strategy for the area and increasing the awareness and involvement of local people (see Appendix for text). The Recommendations also propose that Ría Celestum should be included on the Ramsar List. We received information about the workshop from Dr de Boer on our return from Mexico.
10. In view of the paucity of available published information on the site, it seems worth adding further general descriptive material derived from a site visit by C M Samuel and M Smart (accompanied by personnel of SEDUE and CINVESTAV) on 26/27 June 1989. The Ramsar site is basically composed of a bar of sand dunes some 50 kilometres long running along the north coast of Yucatán; behind the sand dunes is a long inlet of varying depth; inland again is an area of marsh, varying in humidity with the season at the northern tip of the Yucatán limestone peninsula. At the western (seaward) end of the sandbar, near San Felipe, the dunes support a considerable growth of mangroves and a locally important fishing industry. In the central dune area an industrial salt extraction plant has been established. At the eastern end of the sand bar (near El Cuyo) the dune vegetation is largely untouched, and exhibits a rich succession of vegetational types which included several endemics.
11. The area is of international importance not only for its flamingo breeding colony and feeding habitat, but also as a wintering site for shorebirds; as a turtle breeding beach; for its vegetation (notably the succession of dune communities); and as a largely untouched example of a specific wetland habitat. In addition it is important for local human populations, under the Ramsar concept of 'wise use' because it supports a number of fishing villages (San Felipe, Río Lagartos) and a salt industry (at Las Coloradas). The potential - as yet largely unexploited - for ecotourism is considerable, and there is a small SEDUE research station, also largely unused, at El Cuyo. The Refuge is wardened by a small SEDUE staff under the leadership of Antonio Rogel; CINVESTAV personnel from the Unit of Mérida cooperate with SEDUE in studies of the area.

12. In September 1988, hurricane Gilbert passed directly over the Ría Lagartos Ramsar site and broke through the dune cordon in several places. The Ramsar Bureau received reports from a number of sources about the effects of the hurricane and also about the possibility that salt extraction activities might be extended, with potentially serious effects on the ecological character of the Ramsar site. The Ramsar Bureau was invited to take part in the workshops held at Ría Lagartos on Marine Turtles and Flamingos; because of other commitments the Bureau was unable to take part in these workshops, but the Secretary General wrote (on 3 March 1989) to SEDUE suggesting that the Ramsar 'Monitoring Procedure' might be applied at Ría Lagartos during a visit to Mexico by Bureau staff in late June or early July. As a result Christine Samuel and Michael Smart of the Slimbridge section of the Ramsar Bureau visited Mexico from 22-27 June 1989.

Current situation

Programme

13. CMS & MS arrived in Mexico City on 22 June 1989 and had extensive discussions with SEDUE staff in Mexico on 23 June. On 24 June they flew from Mexico to Mérida, where they were met by officials of SEDUE and scientists from CINVESTAV, Mérida and a member of Pronatura. They drove to Ría Lagartos in the company of SEDUE and CINVESTAV personnel, visiting San Felipe, Río Lagartos and Las Coloradas that afternoon. After spending the night at Tiximin, they visited El Cuyo and the eastern part of the reserve on 25 June, before flying back in the evening to Mexico City. On 26 June they discussed the situation further with SEDUE officials in Mexico City.

Effects of hurricane Gilbert

14. Hurricane Gilbert caused the sea to break through the dunes in a number of places of the central part of the refuge, to the east of Las Coloradas. Such breaks in the dunes are of course a natural phenomenon, likely to happen from time to time in the Gulf of Mexico, where hurricanes and northerly storms are common. The break in the dunes can scarcely therefore be regarded as a change in ecological character occurring "as result of technological developments, pollution or other human interference" (Article 3.2 of the Ramsar Convention). As Dr de Boer remarks, hurricanes are a natural disaster, and the flamingos should be able to cope with them in a natural way.

In fact the largest breaks in the dunes occurred opposite the area of salt production, and the salt company has now filled in the gaps.

15. The gaps have been filled in by bulldozers which, instead of a gently sloping dune, have created steep walls of sand. Such walls cannot be crossed by nesting turtles, and indeed during our visit we found one turtle trapped behind a recently constructed wall of sand, unable to return to the sea. For the long-term conservation of the site, it would clearly be desirable for the original dune vegetation (as

it stands, untouched, at El Cuyo) to be reconstituted. This will inevitably be a very long-term process.

16. Dr de Boer commented that one of the effects of the hurricane was to cause higher water levels behind the sand bar. We were told, on the contrary, that one of the principal effects of the break in the dunes had been an increase in the quantity of sand clogging up channels inland (south) of the cordon of dunes, and thus preventing circulation of water. A solution to this problem - probably involving some dredging - needs to be found. It may be that experience from other parts of the world (eg via the US Corps of Engineers) could provide guidance.

The flamingo situation

17. We were told that the flamingo colony had been established in a new location east of El Cuyo, and that breeding was in full swing. (Some concern had been expressed at the time of the flamingo symposium, because some traditional nesting islands had been flooded or washed away by the hurricane). We did not visit the colony so as not to provoke disturbance, but SEDUE and CINVESTAV colleagues were confident that all was well. SEDUE staff in Mexico said there was no question of ringing the chicks this year, to avoid disturbance.

Salt production

18. It is worth noting from the outset that salt extraction takes place in many of the wetlands of major importance for flamingos. This is particularly true in the Mediterranean (eg Marismas de Odiel and Laguna de Fuente de Piedra, Spain; Camargue, France; Molentargius, Sardinia, Italy; Megrine, Monastir and Sfax, Tunisia). It might therefore be appropriate for Mexican conservationists and salt industry executives to study the situation in the Mediterranean.
19. Salt production in the Ría Lagartos is clearly a long-established practice, with extensive artisanal production at El Cuyo and more intensive, industrial production at Las Coloradas. As noted above, the salt company has acted swiftly to block the gaps in the dunes, and has not been sensitive to other environmental factors such as turtle reproduction. There seems no reason however why the salt production industry and the conservation authorities - with better coordination of planning and operations - should not work more closely together in future.
20. We were told that the salt industry wished to extend its area of operation in order to increase salt production. SEDUE officials in Mexico City on the other hand told us that they were responsible for Environmental Impact Assessments, and that they would not permit any extension or intensification of salt production in the Ría Lagartos Ramsar site.

Wise use of wetland resources in Ría Lagartos

21. The Ramsar Convention provides in Article 3.1, that 'Contracting Parties shall formulate and implement their planning so as to promote as far as possible the wise use of wetlands in their territory'. The Contracting Parties at the Regina Conference, defined 'wise use' as "their sustainable utilization for the benefit of humankind in a way compatible with the maintenance of the natural properties of the ecosystem". Since at least 7000 people live within the Ramsar site - mainly at the four principal villages of San Felipe, Río Lagartos, Las Coloradas and El Cuyo - the wise use of the site's resources are a matter of major concern,.
22. Apart from salt production, the other major resource of the area is fishing. San Felipe, at the deepest part of the "estuary" inside the sand-dunes and opposite the major stand of mangroves, has a considerable fishing harbour.
23. It has been suggested that tourist development has already had an effect on the park, and that uncontrolled tourists may have disturbed flamingo and other colonies. Dr de Boer mentions small aircraft flying low over flamingo colonies, and boat-trips for tourists (theoretically prohibited in a reserve) in the feeding areas at Río Celestum. We saw no evidence of this in our brief visit but it is clear that a few thoughtless tourists could easily provoke disturbance in breeding colonies and cause their complete abandonment. Breeding colonies must obviously be maintained free of disturbance (except for authorized and carefully-controlled research and monitoring by scientific staff) in the breeding season. With the development of international tourism in the vicinity (eg at Cancún in Quintano Roo), the pressure for eco-tourism in Ría Lagartos is likely to increase further. The area could no doubt support some eco-tourism development but it would need careful supervision and management to ensure eg that breeding birds are not disturbed and that fragile dune vegetation is not trampled.
24. Another particularly important element of wise use is that local people should be aware and indeed proud of the wetland resources of their area. An awareness campaign needs to be organized through local schools and community facilities, emphasizing wetland values and ensuring that local people benefit from any increased visitor and tourist pressure.
25. Arrangements also need to be made for visiting scientific and student groups to study the site; the SEDUE research station at El Cuyo, currently almost unused, offers a wonderful base for small groups of students and their teachers which would be the envy of many industrialized countries. More detailed studies should also be made of the major faunal and floral groups notably the flamingos, perhaps using ringing techniques developed in the Mediterranean.

Management of the Ramsar site

26. We understand that the Ría Lagartos currently enjoys the status of Refugio Faunístico, declared in 1979 under the old legislation. According to our information, this status protects the fauna but not the habitat and it would seem appropriate for stronger legal protection to be given to the site, under one of the new categories defined in the General Law on Ecological Equilibrium of 28.1.88 (perhaps as a Natural Monument or an Area for protection of Natural Resources, according to Article 46).
27. At the same time a detailed management plan needs to be drawn up for the zone. This should define areas of strict protection, areas where restoration work is required, and areas where wise use of wetland resources is permissible. We were told that SEDUE and the Yucatán unit of CINVESTAV (which has excellent facilities in Mérida) are currently working on a detailed management plan, as recommended at the April workshop. This should be ready in 1990. Once it is ready, funding will be required to put it into practice. In the final section of this report, we put forward certain recommendations which the authors of the Management Plan should, in our view, take into consideration.

Recommendations on management of Ría Lagartos

(a) Areas of strict protection

28. In the management plan the following areas should be given strict protection:
- Flamingo breeding colonies
 - Breeding colonies of other colonial waterfowl (eg terns)
 - Turtle breeding beaches
 - Dune vegetation (especially the area east of El Cuyo)
 - Mangroves (especially the area opposite San Felipe)

The above areas are by no means exclusive. In our short visit we could not hope to appreciate all the areas of special faunal and floral value.

(b) Restoration work

In the management plan, restoration work needs to be carried out in the following areas:

- Stabilization of dunes in the central section between El Cuyo and Las Coloradas. Ideally, the original vegetation (like that to the west near El Cuyo) needs to be restored, but this will be a long process. If dredging of sand from offshore areas is felt to be necessary this should be carried out with utmost care, and in full recognition of the effect of tides and currents. If possible it would be valuable to contact organizations with previous experience of this type of work.

- Improvements of water circulation in the area between the coastal dune and the mainland. Circulation of water between the basins of Río Lagartos, Las Coloradas and El Cuyo, through the natural narrows of El Puente and La Angostura, was already poor before the passage of hurricane Gilbert. This poor circulation and decrease in oxygen in the water was reported to cause a falling-off in fish populations. To some extent, the hurricane may have opened up some dead arms and channels, by allowing new water to enter. On the other hand it also brought in large quantities of sand and some excavation of accumulated sand appears urgently necessary. As in the dune stabilization programme, this work must be carried out with great sensitivity, to avoid inflicting further damage.

(c) Wise use

30. The principal issue here is collaboration with the salt company. As noted above, it seems reasonable to hope that SEDUE and the salt company can come to an agreement which will take account of the natural values of the area. Some communication with comparable Ramsar site and other wetlands elsewhere would appear appropriate.
31. The management plan must give due consideration to the important fishery industry in the area. During our brief visit we had no opportunity to assess current tendencies in fisheries. It will be important to discover whether fish stocks and catches are in a healthy and sustainable state.
32. If eco-tourism is to be developed, this will need strengthening of the Refuge's infrastructure (roads, reception centres, accommodation) and staff (guides). The management plan must take account of these factors.
33. For the whole management plan to succeed, the support and involvement of local people will be necessary. The necessary education programmes and materials will have to be developed, and some form of tangible advantage (eg new jobs) demonstrated.

Further involvement of the Ramsar Bureau

34. It will be apparent from the above report that while Ría Lagartos faces a number of problems, or rather challenges, none are insuperable. The highest priority must be completion of the Management plan. The Ramsar Bureau would be happy to contribute to this end in any way it can; if required by the Mexican authorities, it would be pleased to seek contributions from appropriate experts in other countries.
35. The Ramsar Bureau would be happy to try to make arrangements for Mexican specialists to attend appropriate workshops and seminars, eg flamingo workshop and seminar on the Mediterranean wetland management, both to be held in Andalucia, Spain in November 1989.

36. When the Management Plan is complete, sources of funding will be required. The Ramsar Bureau would be pleased to use its good offices to seek such funding.

C M Samuel, M Smart
July 1989