N O T I C I A S D E G A L A P A G O S

G A L A P A G O S N E W S

N O U V E L L E S D E S G A L A P A G O S

Publicado por

la

FUNDACION CHARLES DARWIN PARA LAS ISLAS GALAPAGOS
Creada bajo los auspicios de la UNESCO

Con ayuda economica de la Organizacion de las Naciones Unidas
para la Educacion, la Ciencia y la Cultura (UNESCO)

N° 15/16

Noviembre de 1970.

N O T I C I A S D E G A L A P A G O S , N° 15/16

SOMMAIRE

NOTICIAS DE GALAPAGOS - 1, rue Ducale, BRUXELLES-1, Belgium.

TORTOISE REARING IN THE GALAPAGOS ISLANDS

by

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During the past forty or so years the accounts of scientists and many other visitors to the Galapagos have painted a particularly bleak picture of the changes for survival of the giant tortoises of the archipelago. At one time it seemed that the only hope lay in collecting the remnants of surviving populations for safeguarding elsewhere, and a number of expeditions justified extended searches and collections on these grounds. Their fears unfortunately seemed all too well founded. Over-exploitation by the Pacific whaling fleets and by colonists during the 19th century had accounted altogether for some races and brought others to the verge of extinction. Protective legislation, aimed at preserving the tortoises, had been followed by unabated hunting; and there seemed no end to the threats of domestic animals that had been brought at one time or another and allowed to run wild. Yet, somehow, ten or more of the fifteen races have survived, and today they stand at the crossroads of a perhaps brichter, but still very uncertain future.

The Galapagos terrain is notoriously difficult. In one way we must be thankful that this is so, for surely the tortoises would not otherwise have survived to this day. It has also resulted in the remoter, inland regions of the islands remaining very little known; so that until the past few years only scattered and often misleading information was available on the status of the tortoises. The situation was feared worse than it was, and the removal of such animals as could be found was thought at the time wiser than it appears in retrospect.

Of the original fifteen subspecies or races of Galapagos tortoise, ten occurred on separate islands. The remaining five were found, and in fact are still found, on Isabela, the largest of the Galapagos Islands; each having evolved in the isolation of one of the five great volcanoes that united to form the present day island. Of the ten islands each with one subspecies, on only one - Isla Pinta, where individuals were surviving into the 1950s - is the tortoise believed to have become extinct in very recent times. Those on Floreana and Santa Fe disappeared a century or more ago; and the tortoise of Rabida, which as far as anyone knows never had very good grounds for being considered a separate subspecies, no longer exists. In remote areas on Santa Cruz, San Cristobal, Santiago, Pinzon and Espanola, the native tortoises still survive. But all are threatened in one way or another by introduced animals and to a lesser and declining, extent by hunting and poaching.

The final, or fifteenth, race, from Fernandina, really plays no part in this present story, for it remains wholly a mystery. It is nevertheless interesting to relate briefly what we know about it. Only one has been found on the island, by Mr. Rollo Seck in 1906. The finding of this animal was totally unexpected for there had been no records of previous visitors ever reporting tortoises from the island. It was an old male, taken and skinned by moonlight by the indefatigable Mr. Beck, and today lies in the museum of the California Academy of Sciences with the name to itself of Geochelone elephantopus phantastica. Since then no other has been found on the island, despite a number of searches and a report of the finding of droppings of a tortoise in 1964. Whatever have been the fortunes of the race they must be due to natural circumstances, for man has never lived in Fernandina, neither has he introduced animals there. It is possible that volcanic activity brought on the extinction of a once flourishing race; on the other hand, although it is today barely conceivable. A population may still survive on the remote southern slope of the volcano, where sufficient vegetation occurs.

It is one of those tragic misfortunes that the Galapagos, as so many other oceanic islands of the world, have suffered the repeated and thoughtless introductions of animals by man. Feral pigs, dogs and rats are a major threat to the young of several races of tortoise; and feral donkeys and goats not only compete for the available food but have set in motion regressive trends in the vegetation of practically all the lower-lying areas of the islands where they occur. Perhaps the most dramatic commentary on this is provided by the island of Pinta. Pinta is one of the small northern islands, and the only one away from the more central part of the archipelago to have had its own tortoise. Goats were taken there for the first time in 1958, a male and two females were released from a fishing boat, to provide a source of fresh meat for the occasional fishermen coming that far from San Cristobal and Santa Cruz. A team from the Darwin Station visited Pinta in August of 1968, just ten years later, and estimated the number of goats to be between four and five thousand. They had multiplied without check or control, and already on many parts of the island through which we know from the records of early expeditions it was necessary to use a machete to travel without difficulty, open stretches for half a mile or more at a time lay where before vegetation was continuous and almost closed. Seven or eight species of plants, unique to the archipelago, had over the same time virtually disappeared from the island.

The basis of present day programmes to save the Galapagos tortoises goes back to 1959. In thatyear the Government of Ecuador declared all uninhabited areas of the islands territory of a National Park, and required full protection to be given, among other species, to the giant tortoises. The law has been moderately successful. Protection of the tortoises has, on the whole, been rigorously enforced, bearing in mind the scattered nature of the islands and the difficulties facing the Ecuadorian Authorities in ensuring adequate inspections and control. Little progress, however, has

been made in preventing settlers from extending beyond their farmlands into the National Park. The saving grace, as far as the tortoises are concerned, has been and will doubtless remain the overriding unsuitability of much of the terrain for human settlement.

In the same year, 1959, the Charles Darwin Foundation for the Galapagos Isles came into being as an international organization devoted to scientific study and conservation in the archipelago. To promote these aims, the Foundation was entrusted by the Government of Ecuador with the establishment and running of a biological station in the islands, the Charles Darwin Resear Station.

During initial surveys of the Station, it quickly became apparent that the tortoises were seriously threatened, and that information was required urgently on the status of surviving races. A system of marking and numbering the animals was begun, and, gradually, with more information on the different populations, a more coherent picture came into view of the management programme that should be adopted.

Tortoises could only be said to be numerous in two areas : on Volcan Alcedo, the middle volcano of Isabela, and in the southwestern part of Santa Cruz. The population of each would not be less than two to three thousand animals. An area of sixty-four square miles, corresponding to the principal range of the remaining Santa Cruz tortoises, was set aside as a strict reserve in 1963. Volcan Alcedo, unsettled and active volcanically, has remained an integral part of the National Park.

Over one hundred tortoises have now been found and marked of each of five other races; namely, from Sierra Negra and Cerro Azul on Isabela, and San Cristobal, Santiago and Pinzon. There is, further growing evidence to believe that the two northern races of Isabela, on the volcanoes of Wolf and Darmin, survive in,at any rate potentially, viable numbers. Northern Isabela has been seldom visited, and is among the least well known areas of the archipelago. Only on Espanola, where no more than seven individual have been found in recent years, is the tortoise considered to be in some immediate danger of extinction.

The practical measures that could be taken lay in two directions. Firstly, there was the removal of the threats, by legislation (which had already been enacted by the Government) and to put into practice controls over the worst of the introduced animals. And, secondly, there lay the possibility of raising nuclei of the rarer races under controlled conditions at the Station on Santa Cruz, with a view to restocking islands at a more favourable time or when the young were of an age better able to withstand the immediate threats in their environment. This latter programme received the full encouragement of Ecuador Government authorities.

Today, wardens, working under Conservation Officials of the Galapagos National Park Service (Pertaining to the Forestry Service of Ecuador), are permanently based among tortoise populations on Santa Cruz and southern Isabela. Feral pigs are hunted in tortoise nesting areas and a systematic attempt is being made to exterminate wild dogs which range over Cerro Azul. In addition, with funds made available from Quito, local hunters are being subsidised and encouraged to hunt wild-running pigs. It is planned to station wardens on Santiago, during the months from July to October, again to shoot pigs, at the laying time of the tortoises. As opportunities permit, periodic visits are made to Espanola to keep numbers of goats under some semblance of control. It should however be mentioned that even if it were feasible with the resources available, a programme of extermination of feral goats, used by colonists as a source of fresh meat, is not particularly wise or politic at this time, and greater advantages lie in the more moderate and acceptable course of control in critically affected areas. Finally, it is hoped over coming months to look into ways of exterminating introduced black rats, that are preventing successful breeding of the tortoises on Isla Pinzon.

Because of these rats, a programme was begun in 1965 to raise young of the Pinzon Island tortoise at the Station. So systematically and successfully it appeared had the rats been killing the hatchlings that no tortoises, younger perhaps than thirty or forty years had been found by Station staff on the island. The programme began modestly. A few eggs were brought back and placed in an incubating chamber on the Station, and the young raised in a number of converted bird cages. After some success with the rearing of over a hundred young tortoises, it was felt that the facilities should be improved and the programme extended to include other endangered races.

In May of 1969, with financial support provided by the San Diego Zoological Society, construction began on a special building to house new incubators and tortoise-rearing pens. The site chosen lay a little way inland, amidst the cactus belt and alongside corrals that had already been built for breeding pairs of the San Cristobal and Espanola races. The building, designed and built by the manager of the Station, Mr. Rolf-D. Sievers, incorporated several features that were lacking, or it was felt were needed, during the early days of the programme.

Important among these was to make the programme more accessible to visitors, particularly for the benefit of local people and educational groups who were interested in seeing the Station and its conservation work. A series of exhibition panels at the entrance to the building explains the nature of the project, the status of the tortoises and the reasons generally for protection programmes. These exhibits are accompanied by texts in Spanish and English. Other amenities, in the interests of the tortoises, are running water and central heating. Additional warmth, in the form of underground heat, was found to be desirable in the case of the very small tortoises during the months when cool mist-laden winds come in from the sea. The new tortoise Rearing Centre was opened in January of this year (1970), and the time of

writing houses 103 young tortoises, of ages from a few weeks to four years.

From the first batch of eggs, brought from Isla Pinzon at the end of 1965, twenty-nine young tortoises have been raised. These are now at a weight of five to eight pounds, and large enough to be safe from rats. Already they are being put on to a drier, more Spartan, regimen in keeping with their native island, ready for their return later this year.

PROBLEMES AUX ILES GALAPAGOS

par

Paul SCHAUENBERG

Un bref voyage aux îles Galapagos, au cours duquel j'ai pu m'entretenir avec de nombreux Equatoriens habitant l'archipel, m'a permis de comprendre mieux certains problèmes touchant à la conservation et à l'exploitation de la nature. Depuis une année, des dizaines d'annonces, plus alléchantes les unes que les autres, emplissent les magazines, invitant le touriste à visiter le dernier paradis des bêtes, perdu en plein Pacifique. Cette débauche publicitaire m'a incité à relire l'article du biologiste Eibl-Eibesfeldt : "Das bedrohte Tierparadies der Galapagos-Inseln. Ueber die Notwendigkeit wirksamer Schutzmassnahmen"(Natur u. Volk, 86 : 1956 : 145-157). L'auteur y écrivait : "- Es ist wirklich allerhöchste Zeit, denn es sind Kräfte am Werk, welche die Galapagos-Inseln dem Turistenverkehr erschliessen wollen... Wenn diese Kräfte siegen, dann werden wohl bald der letzte flugunfähige Kormoran und die letzten Pelzrobben verschwunden sein". - La création de la Station Charles Darwin a fort heureusement permis à la science de devancer l'invasion touristique. Des années durant, les chercheurs de toutes les disciplines ont encore pu trouver ici un écosystème partiellement vierge. L'évolution y a livré ses secrets et, grâce aux commodités offertes aux visiteurs par les installations modernes de Santa Cruz, la biologie de l'archipel est actuellement mieux connue que celle du continent sud-américain.

Une trop large publicité ayant été faite en faveur des îles Galapagos, les profiteurs de l'incontestable regain d'intérêt pour la nature n'ont pas perdu leur temps. La conservation de la nature et la promotion du tourisme semblent désormais indissociables. L'une et l'autre dépendent parfois des mêmes organisations; on serait même tenté de se demander si la protection de la nature n'est pas devenue l'instrument de la plus formidable affaire touristique de tous les temps. En fait, l'avènement des prophéties d'Eibl-Eibesfeldt n'était qu'une question de temps.

Une dizaine d'années d'efforts ont suffi à des hommes d'affaires et promoteurs, pour réaliser leur grand rêve : intégrer l'Archipel des Galapagos au réseau touristique mondial. Désormais, tout un chacun peut, à sa guise, observer, photographier.... toucher même, les créatures étranges, fruits des caprices d'une évolution millénaire, dont la contemplation était, jusqu'alors, réservée à une poignée de spécialistes privilégiés. Des milliers de touristes : amis de la nature ou amateurs blasés des stations surpeuplées, affluent et afflueront chaque année vers ce haut-lieu de la biologie. Précisons d'emblée que les appréhensions qu'Eibl-Eibesfeldt exprimait il y a 14 ans ne semblent pas encore justifiées. En effet, avec sagesse et clairvoyance, les agences touristiques - une douzaine en 1970 - se sont assurées la collaboration d'éminents naturalistes, dans le but louable de sauvegarder la nature.

Ces guides dévoués sont ainsi à même de prévenir d'éventuelles perturbations (envols photogéniques de flamants, d'albatros, de frégates, fuites maladroites d'otaries et d'iguanes) que pourraient causer les photographes; ils peuvent empêcher tout prélèvement d'animaux vivants, dont une firme de Quito détient les droits de vente exclusifs et exporte librement de jeunes tortues en Europe et aux U.S.A. Aux îles Galapagos, la saison touristique coincide curieusement avec celle de la reproduction. On peut, de ce fait, observer les oiseaux de très près, alors que d'autres sanctuaires naturels interdisent l'accès aux rookeries durant la période de nidification. Ici, le touriste n'est pas volé : tous les recoins du Paradis des animaux lui sont accessibles, grâce au luxueux "Bird-Boat" qui, chaque semaine, "-sails to all the birdlife spots. Even the way-out places like Point Espinoza, where you will find the flightless cormorant and the Galapagos penguin. And Tower, famous isolated island of birds. And Hood, nesting ground for the waved albatros... It takes in just everything. The boobies, the frigate birds, the gulls, the iguanas and the seals. And of course the tortoises and the Darwin's finches." (Extrait d'une annonce touristique, 1970). Que pensent les spécialistes d'un tel programme ?

Tel qu'il a été organisé, le tourisme ignore les quelque 2.800 habitants, qui ne participent en rien aux énormes profits de cette nouvelle forme d'exploitation des îles Galapagos. On est en droit de craindre sérieusement que la population résidente se désintéresse de la protection de la faune, dont elle ne tire aucun avantage. L'activité future de la Station Charles Darwin pourrait s'en trouver considérablement entravée. En 1968, j'avais suggéré au Directeur du Service Forestier de l'Equateur, de proposer la perception d'un impôt de 10 dollars par touriste se rendant aux Galapagos, à titre de contribution à la conservation de la nature.

L'éradication des chèvres et la dératisation de quelques îles constituent de sérieux problèmes. Pour les résoudre, la Fondation Charles Darwin devrait pouvoir compter sur le concours de spécialistes de l'industrie, pour réaliser rapidement ces opérations, à l'aide de produits chimiques ou biologiques. La reproduction des tortues et leur élevage à la Station est une entreprise très heureuse, bien que coûteuse. Encore faudra-t-il s'assurer que ces efforts internationaux ne soient pas anihilés par les exportations légales de jeunes tortues. Il est indispensable d'aménager, en les régénérant, les biotopes des îles qui recevront les élèves de la Station.

Nous souhaitons que le Gouvernement de l'Ecuador s'efforce de structurer un Service des Parcs nationaux. En effet, la conservation de la nature se trouve disséminée de la façon suivante :

Forêts (Parcs nationaux) = Servicio forestal, Direccion de Bosques;

Faune (Exportation des animaux) = Servicio agropecuario;

Propriété foncière = Instituto Ecuatoriano de Reforma agraria y Colonizacion (IERAC);

Fondation Charles Darwin (UNESCO) = Ministerio de Educacion;

Tourisme = CETURIS et Agences particulières.

Aucune coordination n'existent entre ces départements, la réalisation des réserves naturelles pour les tortues reste encore problématique. Celà est également valable pour les Parcs nationaux du territoire continental : Parc national de Cayapas, sur le versant occidental des Andes et Parc national Equatorial, s'étendant du Mont Cayambé à la plaine amazonienne. Ces projets ne progresseront pas, tant que le Service compétent ne sera pas nettement défini et ne disposera pas des pouvoirs exécutifs nécessaires. L'assistance internationale dans les domaines technique, scientifique et financier est plus que jamais indispensable. Compte tenu de la carence de cadres scientifiques en Equateur (où n'existe aucun zoologiste), il est primordial de songer à la formation accélérée d'une élite capable d'assumer les charges de la conservation du patrimoine naturel. La Fondation Charles Darwin a ouvert la voie en assurant la formation de gardes forestiers spécialisés, en étroite collaboration avec la Direction générale des Forêts, à Quito. C'est un début, mais il faut poursuivre et amplifier les efforts !

Dans un avenir immédiat, l'évolution rapide et imprévisible de la situation placera les biologistes de la Station de Santa Cruz devant un certain nombre de tâches et de difficultés nouvelles. Après l'étude de la nature primitive et de l'écologie de l'archipel, dont certaines îles (Fernandina, Genovesa, Espanola) étaient restées vierges, les biologistes devront suivre de près les effets du tourisme sur l'ecosystème insulaire. Sans aucun doute la présence de l'Homme dans les zones les plus vulnérables affectera sensiblement le fragile équilibre naturel, et il est à craindre que plusieurs espèces pâtissent de ce nouvel impact. Avec la collaboration des naturalistes accompagnant les groupes de visiteurs, et qui pourront protocoler sur place les perturbations et dégradations infligées au milieu par leur présence, les écologistes seront à même de décider de mesures restrictives à prendre si besoin est. D'ores et déjà je suggère de supprimer Punta Espinoza des circuits touristiques ! Mais celà est une autre histoire !....

THE PROBLEMS OF TOURISM TO ISLAND RESERVES

by

Guy MOUNTFORT.

With the exception of countries engaged in armed conflict, no area of the world is now inaccessible to tourists. Organized "adventure tours" can today be made in considerable comfort and safety even to the Antarctic, the Amazon jungle, the wilds of New Guinea, or across the Gobi or Sahara deserts. Hitherto rarely visited islands such as Tristan da Cunha, Easter Island, the Falklands and the Amirantes are now listed in the tourist brochures. Of more importance to conservationists is the fact that unique wildlife areas such as the Galapagos, Aldabra and South Georgia have become readily available to tourists. Considerable alarm has been expressed that tourism will damage or even destroy the vulnerable ecosystems in these localities. A realistic appraisal of the potential advantages as well as the more obvious dangers of this development is needed.

It is undeniable that uncontrolled tourism, even on the present limited scale, could quickly cause irreparable damage to island ecosystems. The risks are self-evident. Even when the numbers landed are small and carefully supervised, there is always some risk that the seeds of alien vegetation may be inadvertently introduced, or that disturbance may be caused (particularly by over-eager photographers) to breeding birds or other animals. Where behavioural research is being conducted, the arrival of boatloads of even the best-behaved tourists can be an unwelcome distraction.

One must, however, recognize that the practical arguments in favour of tourism are compelling. All Governments need foreign currency and particularly the American dollars which at present represent the largest part of the income from tours to remote islands. Few Governments can yet equate the long-term value to science of a unique and unspoilt wildlife community with the immediate value of an increase in dollar income. Some islands of importance to wildlife are occupied by primitive and needy human communities which quickly benefit from tourism. On the other hand there is a danger that in order to obtain additional money from tourists they will develop a harmful trade in souvenirs such as a local sea-shells, butterflies, reptile skins, bird feathers, or even wild birds and other animals.

Where research stations have been created, as on the Galapagos and Aldabra, the regular arrival of tourist ships can be of considerable benefit in providing a mail service, fresh food and water, medical facilities and emergency services. It has also been abundantly proved that in return for the privilege of visiting these islands, tourists will readily provide money for the research stations. The amount subscribed by the Lindblad tours to the Galapagos and Aldabra has been substantial. The Charles Darwin

Foundation has in addition been given valuable equipment by Mr. Lars-Eric Lindblad, who is an ardent conservationist. These are positive and practical advantages arising from tourism.

The educational value of tourism is also important. If the public is asked to subscribe money for the acquisition or operation of wildlife reserves, there is a moral obligation to provide reasonable facilities of access. This benefits the cause of conservation. Most of the organized tours are now accompanied by qualified wildlife lecturers who are actively concerned in the conservation movement. Not only are they at pains by careful supervision and instruction to prevent disturbance to wildlife, but also to ensure strict observance of such restrictions as are specified. They also indoctrinate tourists with the principles and needs of conservation.

Until now it can fairly be said that organized tours to island reserves such as the Galapagos have produced more benefit than harm. The danger lies in the inevitable growth of tourism, both in the frequency of visits and in the size of the parties landed. Regular tourist flights by commercial airlines will soon threaten both the Galapagos and the Seychelles. The success of the Lindblad initiative has attracted other tour operators, some of whom are less scrupulous and less interested in conservation; as many as three tourist ships landed parties on the Galapagos in a single week this year. Apart from the disturbances to wildlife, this imposes a wholly undesirable strain on the personnel of the research station. Until the Galapagos islands are adequately policed by the Ecuadorian Government, the problem of preventing litter, vandalism and disturbance will become increasingly difficult. The crews of tourist ships are a greater problem than the tourists in this respect. Kitchen refuse and litter is usually thrown overboard while ships are disembarking passengers and this causes unsightly pollution on the beaches at Tower, Hood and Sullivan Bay. The painting of inscriptions on rocks by ships' crews continues and one of the recently erected Wildlife Reserve notices has already been destroyed by vandals. Empty film cartons can now be found at most of the places where tourists land, though the Lindblad parties are scrupulous in collecting such refuse before leaving each island.

The economic advantages of tourism will compel Governments to enlarge their facilities for increased traffic. Nothing will prevent this. It is therefore imperative that conservationists should seek to establish such reasonable limitations as are possible so far as vulnerable island reserves are concerned. A standard code of practice is needed for the landing and control of tourists and for the behaviour of ships' crews in off-shore waters and ashore. These regulations should not be left to the personnel of the research stations, who in most instances have neither the time nor the authority for such work. What is needed is an international agreement with the tourist authorities and the local Governments concerned. This might best be initiated by the I.U.C.N. in consultation with the various foundations and research authorities. Unless such an effort is made in the near future there is a real danger that the unique island ecosystems which

now attract tourists and scientists alike will be destroyed by sheer weight of numbers. Unfortunately this problem is likely to be more acute and more difficult to overcome on the archipelago of the Galapagos than elsewhere. If the Charles Darwin Foundation is to protect its research investment, it should seek action now. Tomorrow may be too late.

NEWS FROM THE CHARLES DARWIN RESEARCH STATION, GALAPAGOS

Scientific and Conservation Report - February 1970

- National Park Regulations

An extended draft of regulations for the Galapagos National Park was presented by the Forestry and National Park Service at a meeting on 12 December of the Galapagos Committee (Comision Permanente para Asuntos Relacionados con las Islas Galapagos). The principal provisions proposed set out :

- the authority of the National Park Service over the establishment of hotels, facilities and installations in the National Park and in other areas
- restrictions and arrangements for the control of visitors
- the responsibilities and duties of tourist companies organizing tours
- limits to the size of tours : a maximum of 60 persons, with a guide per 30 persons, to be disembarked at one time, except in the cases of San Cristobal, the CDRS and certain other inhabited areas
- the requirements and qualifications of tourist guides
- the prohibition of the purchase or removal from the archipelago of artefacts from protected species (the dried legs and shells of tortoises and the teeth of sea-lions have been offered over the past year for sale to visitors)
- the payment of entry fees to the National Park and financial arrangements for the future administration of the Park.

These regulations, with the support of the Galapagos Committee, were to be presented to the Government early in 1970.

- Development Proposals

Requests brought forward during the period of this report, involving the National Park or affecting its amenities, include :

i) Gia. Baltra S.A. : to promote the development of recreational facilities in the Galapagos Islands by :

- the purchase of terrain for development (a request of this company for the purchase of 800 hectares of land on the south coast of Santa Cruz, including Tortuga Bay and an area of the tortoise reserve, was presented to IERAC on 23 July 1969)
- to bring a ship with a capacity for 750 persons for use in the archipelago as a floating resort.

ii) A company represented by Sr. M. Castro, and associated with Lindblad Travel, Inc. and Turismundial Cia. Ltda., Quito : for the establishment of visitor accommodation at Tortuga Bay.

iii) A Srta. Gladys Guerrera Villagomez : for the acquisition of 10 hectares of land embracing Bahia Borrero on the north coast of Santa Cruz for the installation of a fish-freezing and -processing plant. In view of existing port facilities at both Baltra and Academy Bay, this request appeared needlessly to imply the establishment of a further area of settlement on Santa Cruz, and has been refused.

Scientific and Conservation Report - July 1970

- Galapagos National Park Service

i) Administrative Organization

Discussions were held at the Station on 24 March and 6 April 1970 between Ing. Angel Lovato M., of the Conservation Department of the Forestry Service of Ecuador, Ing. Harald Mattsson-Marn and Ing. Jan Troensegaard, FAO Advisers to the Forestry Service (Centro de Capacitacion Forestal), members of the Galapagos National Park Service and the CDRS. The main recommendations arising from these meetings, summarized in a report of 14 May drawn up by Ing. Lovato, were as follows :

- It was felt that the construction of tourist facilities should not be allowed at Tortuga Bay (Santa Cruz) and Volcan Alcedo (Isabela), both areas of which had been included in projects recently presented by tourists companies. It was reiterated that a terminal hotel at Baltra and, elsewhere, the use of a ship as a floating hotel stood to provide the most acceptable service to visitors and the safeguards needed for the Park.

- In regard to control in the National Park it was pointed out that no adequate provision existed to bind visiting yachts to protection laws and regulations; and attention was again drawn to the activities of colonists on Santa Cruz invading territory of the Park and the need for an effective solution.

- It was indicated that there was an urgent need for the appointments and status of existing Park Officials to be confirmed and for their to be provided with salaries, funds and equipment to undertake the administrative duties to which they were assigned. It was noted that Sres. Black and Villa had been working as Officials of the Galapagos National Park since October 1968, and that they still had no defined status or authority, nor seniority in the Service they represent.

- The importance was stressed of there remaining a close permanent coordination between officials of the Galapagos National Park Service and members of the CDRS.

- Depending on the financial basis of the Service, it was felt that there was a need to increase the number of wardens (at present four, contracted by the CDRS) and for the activities of Park Officials to be extended.

ii) National Park Regulations

Reference has been made in previous reports to regulations for the Galapagos National Park proposed by the Forestry and National Park Service. These were to provide the basis for the administrative structure of such Parks in the country.

The progress of these regulations has been with held, and the Asesoria Juridica of the Ministry of Agriculture has indicated in a report of 28 May that :

- existing legislation provides a legal basis for the safeguards that are indicated as required;

- the control of tourism cannot become a function of the Forestry and National Park Service, and comes under the responsibility of the Ministry of Industry and Commerce and the Corporacion Ecuatoriana de Turismo (CETURIS).

The recommendations of the Asesoria Juridica of the Ministry would in fact imply a separation of the administration of the National Park from the control of activities (tourism) within it. However this may be, it is of growing importance that there is adequately appreciated :

(a) the need for control (and upon which only qualified wildlife specialists can advise) over the numbers of tourists visiting areas at any one time;

(b) the need for a standard of guiding to be set, bearing in mind that tourism in the Galapagos is based solely on its wildlife and its adequate protection.

Furthermore, other reasons, notably scientific and a plan of the financial structure for running the Park, existed for the proposed regulations besides touristic.

RAINFALL 1969

Santa Cruz, Galapagos

	CDRS 6 m.	Casita 200 m.	Devine 315 m.	Med. Luna 600 m.
January	23.0	64.5	78.0	172.6
February	16.8	171.8	155.2	117.0
March	249.0	720.6	920.8	666.7
April	68.5	100.9	79.5	166.4
May	31.4	155.3	214.6	309.8
June	16.8	130.6	147.3	271.8
July	12.0	33.4	42.2	135.6
August	3.8	12.0	13.7	89.4
September	18.5	68.2	90.9	282.6
October	3.2	17.9	22.6	96.5
November	11.0	43.6	52.8	172.7
December	15.7	67.1	84.1	175.3
Total	469.7	1585.9	1901.7	2656.4

FUNDACION CHARLES DARWIN PARA LAS ISLAS GALAPAGOS

CHARLES DAPWIN FOUNDATION FOR THE GALAPAGOS ISLANDS

FONDATION CHARLES DARWIN POUR LES GALAPAGOS

Créée sous les auspices de l'Organisation des Nations-Unies pour l'Education, la Science et la Culture (UNESCO)

1, rue Ducale, BRUXELLES 1, Belgique

Buts et objectifs de la Fondation Charles Darwin pour les Galapagos (Art.2 des Statuts, Bruxelles, 23 juillet 1959).

L'Association est chargée de l'organisation et de la gestion de la Station de recherches "Charles Darwin", dont le gouvernement de la République de l'Ecuador a autorisé l'établissement dans l'archipel des Galapagos à l'occasion du centenaire de l'énoncé de la doctrine de l'évolution (1958-1958).

L'Association propose aux autorités compétentes toutes mesures propres à assurer, dans l'archipel des Galapagos et dans les mers qui l'entourent, la conservation du sol, de la flore et de la faune, et la sauvegarde de la vie sauvage et de son milieu naturel. Elle arrête le programme de recherches de la Station biologique et la charge de toutes études scientifiques en rapport avec les objets ci-dessus.

Elle recueille et gère les fonds destinés au fonctionnement de la Station et à la promotion des recherches qui y ont leur base.

L'Association veille à la diffusion, par tous moyens appropriés, du résultat des travaux de la Station et de toutes information scientifiques relatives aux réserves naturelles.