

IUCN BULLETIN



INTERNATIONAL UNION FOR CONSERVATION
OF NATURE AND NATURAL RESOURCES

1110 MORGES SWITZERLAND

NEW SERIES Vol. 2., No. 10

Published with the financial assistance of Unesco

JANUARY/MARCH 1969

Stewart L. Udall: conservation's statesman

In the United States, the 1960's have been a period of unprecedented awakening to the values and needs of conservation. The public conscience has been stirred to the realization that the powerful advances of technology, far from providing the keys to utopian abundance, have themselves created fresh problems. Modern society, luxuriating in unprecedented affluence, has for too long been conditioned to believe that science can resolve all things. There has been a naïve acceptance of the comforting conviction that science can always cover up man's mistakes and provide solutions in the form of fresh alternatives and new resources. The truth is now dawning that the impression of limitless abundance is illusory, and that neither science nor all the ingenuity of mankind can re-create a species that has become extinct or eradicate the deserts once they have taken charge.

We have encircled the moon and are poised to reach for the planets, but the very brilliance of recent technological successes serves to re-emphasize that we have so far failed to master our own natures and our capacity for despoiling the resources that are essential to our own life and well-being. Man's preoccupation with ease and comfort has blinded him to the higher values.

This ambivalence has resulted in the partial transformation of the promised land of America the Beautiful into an unsightly garbage dump, the scenery obscured by a blight of billboards, rivers and lakes polluted, forests and wilderness destroyed, the land eroded, the air corrupted... Indeed, achievement in the quality of the human environment appears to be in inverse ratio to technological accomplishment, and the problem is accentuated by "the ineluctable pressure of expanding population", each increase eroding the values gained elsewhere.

Eight years ago the problem was of such breath-catching magnitude that the conservation movement was itself unprepared and uncertain; it was against such a background of indecision, drift and retreat that Stewart L. Udall was appointed Secretary of the Interior. He recognized that the Great Society would have a decidedly hollow ring if erected on the plunder of the country's natural resources.

He therefore set himself the formidable task of becoming the quickening conscience of the United States, acting decisively to conserve the nation's renewable natural resources, and of making an attractive and orderly environment part of the national purpose.



Peter Scott

Udall's term of office has been characterized by a commendable sense of responsibility toward future generations. Unlike the majority of politicians who are swayed by vote-catching considerations, he has had the moral courage to seek constantly to "improve our decision-making techniques. Nor must we be afraid to decide the toughest of issues; practices that defer necessary decisions can also be a threat to the national welfare." He has constantly sought to translate this exhortation into practical reality.

That he was the right man in the right place at the right time is shown by the record. During his term of office the scene has been transformed and a sense of purpose has been injected into the conservation movement. A bright new chapter of constructive achievement has been written. Stewart L. Udall has been an outstandingly successful Secretary of the Interior – and, that rarest of species, a conservation statesman.

While his office and his responsibilities have been concentrated in the United States, his impact has been global. His initiatives and the impetus of his decisions have overflowed the boundaries of his own country and have had an appreciable and wholly beneficial influence, far greater than is perhaps generally appreciated.

During his eight years in high office he has, above all else, been profoundly successful in creating awareness of the issues involved and in carrying the public with him in measures to resolve them. The United States is now conscious, as never before, of the imperative need for national parks and wildlife, for wilderness and the pristine, for clean air and pure water. That the nation is now firmly committed to re-creating and maintaining a healthy environment is the measure of Stewart L. Udall's achievement. We salute one of the truly great men of conservation.

N.M.S.

Sea Turtle Resources of the Caribbean and Gulf of Mexico*

by Archie Carr, University of Florida, Gainesville

The sea turtles of the Caribbean are among the classic resources of the New World tropics. The green turtle, especially, once tremendously abundant, was a fundamental factor both in the deployment of Caribbean Indians and in the logistics of early European navigation and colonization. At an early date, however, an insupportable drain began, and one nesting colony after another dwindled and disappeared. More recently there has been another marked increase in both the uses for sea turtles and the numbers of people using them, and an accompanying improvement in processes of harvesting and distributing turtle products. The rate of depletion has again risen and *Chelonia* — and perhaps other genera as well — seem on the verge of disappearing as economic assets, if not as natural species.

The sea turtles of the world belong to five different genera, all of which occur in the Gulf and Caribbean region.

The genus *Lepidochelys* is represented by *L. kemp*i (Atlantic ridley, *lora*, *cotorra*, *cahuama*) in the Gulf of Mexico, and by *L. olivacea* (*warana*, *batali*) which is a sporadic wanderer in the extreme eastern Caribbean (Donoso-Barros, 1964; Flores, 1966). At one place or another, both species are killed and eaten by local people, but the chief threats to *Lepidochelys* are the consumption of the eggs, preferred above those of all other sea turtles, and the growing demands of the leather trade. According to Márquez (in press) 336 tons of ridley skins were taken in Mexican waters in 1967.

*L. kemp*i is essentially a crab-eater, while in the places in which its diet is known, *L. olivacea* appears to incline toward shrimp as food. Practically the entire breeding effort of *L. kemp*i is exerted during a few short emergences on one small section of the Tamaulipas Coast in Mexico. At one time up to thirty or forty thousand females emerged on a single mile of beach. Heavy egg-hunting in the 1950's reduced the *arribadas*, however, and by the early 1960's *kemp*i seemed to be at the point of extinction. As a result of strong intervention by the Mexican government the colony appears now to be slowly building up again (Márquez, in press; Chaves, Contreras and Hernandez, 1968). It has recently been revealed that *L. olivacea* makes comparable, though somewhat smaller, *arribadas* on the coasts of the Guianas and Guerrero. The Surinam colonies are receiving careful protection by the Forestry Department in Paramaribo, and Peter Pritchard of the University of Florida is engaged in a comparative study of various ridley populations on the Atlantic and Pacific coasts of the Americas.

The Atlantic loggerhead, *Caretta caretta* (*cahuama*, *caballera*), though found throughout the Caribbean as a wanderer or sporadic migrant, goes farther north to nest than any other sea turtle. The chief remaining breeding shores are those of the southeastern United States, although nesting occurs in the Bahamas and Greater Antilles, and, with decreasing frequency, down to northern South America. At Tortuguero, Costa Rica, during the fifteen years that surveillance of the beach has been maintained, only one loggerhead has been known to come ashore. *Caretta* is mainly carnivorous and relies heavily on crabs for its diet. It also regularly eats floating jellyfish and a variety of sessile or encrusting invertebrates. Under a special grant from the Tubman Trust a nesting census is now being made along the whole extent of the mainland breeding grounds of *Caretta*. The chief threats to the species in this vital section of its range are the encroachment of human works and depredations by the raccoon. Considerable drain is imposed by illegal egg hunters, and it is an anachronistic

scandal in Florida conservation legislation that two counties of the northern peninsula still have an open season for taking turtle eggs.

Dermochelys coriacea (leatherback, trunkback, *tinglado*, *tortuga de cuero*, *laud*, *canal*) is the largest of the sea turtles, reaching weights of close to 2000 pounds. It is carnivorous and appears to incline strongly to a diet of jellyfish. Though it breeds mainly in the tropics, its travels take it regularly into northern parts of the temperate zone. In some parts of the world — the eastern coast of Malaya, the Tongaland Coast of Zululand, the coasts of Surinam and especially French Guiana — *Dermochelys* nests in aggregations. Nesting areas are scattered throughout the Caribbean, wherever ocean beach provides sand deep enough to insure proper drainage for the deeply excavated nest chamber. In the Caribbean the only tendency to aggregate in nesting occurs on the coast of Costa Rica north of the mouth of the Matina River, a thinly settled region in which the illegal taking of eggs goes on steadily during the season. Although the leatherbacks are often harpooned for sport, or simply to be taken home as a curiosity, few are killed for meat. The main depletion factors are loss of wild nesting shore to development and widespread persecution by egg hunters.

Eretmochelys imbricata, the hawksbill or *carey*, is the most confirmedly tropical of all the sea turtles, and the most clearly confined to a littoral foraging habitat. It is a bottom feeder and appears most at home in coral reef environments. The narrow beak, which evoked the English common-name, hawksbill, may be an adaptation for gouging crabs out of crevices and for routing other invertebrates from irregular coral surfaces. In the Caribbean the hawksbill probably nests more ubiquitously than any other sea turtle, making use of short stretches of shore too low and limited in extent for a green turtle or leatherback to use. The decline in the tortoiseshell market during the 1940's, caused by the advent of plastic imitations, took the hunting pressure off hawksbill populations for a time, but now demand is again growing. This drain, stimulated also by the calipee and leather trade and combined with the constant raiding by egg hunters, makes *Eretmochelys* seem one of the most clearly endangered genera of reptile in the entire world.

The best-known Caribbean sea turtle is *Chelonia*, the green turtle, in Spanish called *tortuga blanca*, or simply *tortuga*. The genus is, like many freshwater turtles, carnivorous in youth and principally herbivorous in maturity. There is occasional nesting by green turtles on suitable deep-sand ocean shore all about the Caribbean, and small aggregations form at several places. It is a characteristic, world-wide tendency of *Chelonia*, however, to form big nesting assemblages at localities that may be hundreds of miles from the pastures of *Thalassia* or other marine plants that constitute the year-round residence grounds. In the Caribbean, only two such nesting assemblages occur. One of these is the Venezuelan Aves Island, a low exposure of the Saba Bank a hundred miles southwest of Monserrat in the Leeward Islands. The other is the Costa Rican shore between the mouths of the Tortuguero and Parismina rivers. As the only animal that converts marine spermatophyte plants into meat of high quality, the green turtle is of great potential importance to man. Because of its tendency to group at the nesting site and to be concentrated by the limits of its sub-marine pastures, green turtle management would appear to face no inherent obstacles. In spite of these advantages, however, the green turtle resource is on the verge of being lost.

There seems little hope that the widespread single nesting season can maintain populations of *Chelonia* in the Caribbean — much less restore them to their potential

* Paper read at the Symposium on Investigation and Resources of the Caribbean Sea and Adjacent Regions, held at Curaçao, Netherlands Antilles, November 18–26, 1968.

limits set by the carrying capacity of the pasture grounds. The main hope for rehabilitation remains with the breeding aggregations at Aves Island and Tortuguero. The former is at present being given no formal protection whatever. The colony persists there only because high seas and the small size and slight elevation of the island pose a difficult navigational problem for the sailing sloops of the turtle hunters. Boats from St. Lucia, Dominica and the French islands are arriving with increasing frequency, however, and it appears only a matter of time before the Aves Island turtles will go the way of the other lost colonies of the Caribbean. To save them, close surveillance throughout the nesting season appears the only recourse. The island is low, waterless and a long way from the Venezuelan homeland. Setting up an effective sea patrol or land station there would not be easy. A possible compromise would be to make frequent reconnaissance flights throughout the season by airplane or helicopter. It is not known what territory the Aves breeding colony supplies with green turtles. To determine this a tagging program would be required, and none has so far been developed. The greater part of the green turtle population of the eastern half of the Caribbean Sea is probably of Aves origin. If so, that region will obviously lose its green turtles if prompt and successful protection is not achieved at Aves Island.

The territory served by the Tortuguero colony, by contrast, is fairly well known. 140 international returns from our long-term tagging program have shown it to be the whole western Caribbean from eastern Venezuela to Yucatan, Jamaica, Cuba and Florida. Until recently the outlook for the Tortuguero green turtle seemed reassuring. The Costa Rican government had passed laws prohibiting the taking of turtles or eggs on any beach in the Republic. Although there was some poaching there, and although harpooning was legal up to one kilometer from the nesting shore, the breeding population seemed to be holding its own. With the close of the 1968 season, however, it became clear that even at Tortuguero the future of *Chelonia* was bleak.

The cause of the decline is obviously over-exploitation. It is a frustrating but fundamental fact that Costa Rica really has no exploitable green turtle resource. The only green turtles on the Caribbean Coast of the country are those that converge at Tortuguero to breed. When their reproduction is finished these turtles go back to resident feeding grounds as far as a thousand miles away. There is no resident colony in Costa Rica because there is no grazing territory in which sub-marine spermatophyte plants cover large areas in continuous stands.

In arranging a management or protection program for any wildlife resource the first thought is usually to protect the species involved at its time and place of reproduction. In Costa Rica this policy has been reversed, simply because it is only thus that any harvesting at all could be done there. At present (1968) it is legal to harpoon green turtles during July and August, the first two months of the nesting season. As a result, the West Caribbean population is undergoing a threefold attack, as follows: (1) by legal turtlers who harpoon the mating pairs just outside the breaker-line at Tortuguero; (2) by

illegal hunters on the nesting beach, and (3) by the growing numbers of netters and harpooners on distant feeding grounds in Mexico, Nicaragua, Panama, Colombia, Cuba and elsewhere. Signs that the population is not withstanding this drain are: (a) reduction of the percentage of large, mature green turtles being taken on the pastures; (b) a shortening of the nesting season at Tortuguero, where breeding formerly occurred from June to December but now is increasingly being restricted to August, with a few arrivals in late July and during the first half of September; (c) evidence of a lowering of the mean age of the Tortuguero nesting colony, and (d) an almost complete cessation of nesting on the southern third of the 24-mile extent of Tortuguero Beach. These signs all indicate a species in trouble.

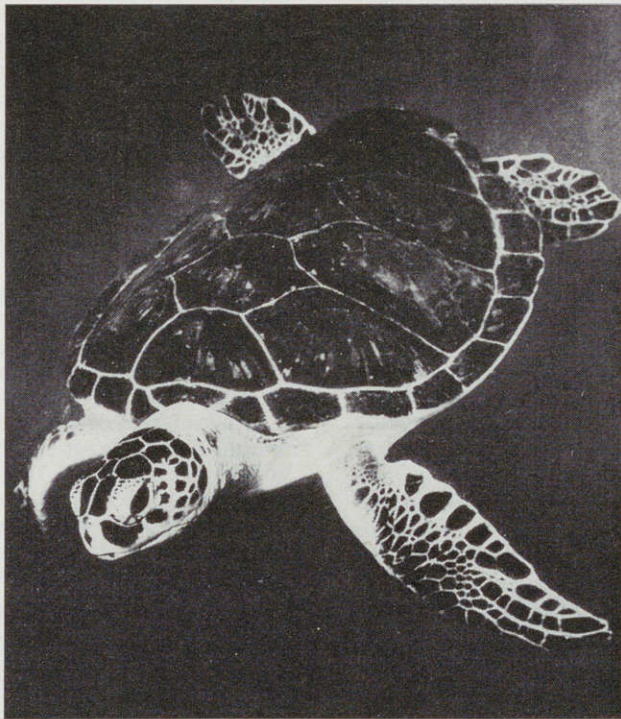
Another, even more reliable sign was a strong disparity in numbers of nesting arrivals in the 1965 and 1968 seasons.

Sample track counts made in 1965 indicated that during August about 600 female turtles were emerging each night to nest. A direct head count made during one night of the same period tallied 625 turtles on the beach. By contrast, in 1968 six track counts and a number of estimates from spot sampling of nest-density all agreed closely on one hundred as the approximate nightly total for the Tortuguero shore. The cause of the abrupt onset of this drop can no doubt be found in the timing of the

nesting schedule in *Chelonia*. The Tortuguero turtles nest every three, or less often, every two years — never in successive seasons. The individuals that make up the nesting colony of a given year thus have three different backgrounds: some of them are new recruits that have just reached maturity; some are returning after an absence of two years; and a larger number have come back after being away for three years. Commercial exploitation in Costa Rica increased markedly in 1965. Because of the predominance of the three-year nesting cycle, the 1968 season was that in which the increased toll of 1965 became clearly evident.

Still another symptom of the decline was an energetic effort made during the 1968 turtle season by local commercial interests to try to have the open season extended through to September, to allow the industry to recoup losses brought by the low catch in July and August. The Costa Rican government denied the request.

To save and rehabilitate Caribbean sea turtles will be an exercise in international cooperation — one in which whole species, despite their awkward habit of crossing national boundaries, are effectively taken in charge. The resource is a littoral phenomenon, linear in distribution, while the demand for it is three dimensional and is growing in every dimension. Such recent developments as the strong new markets for turtle leather and turtle oil enormously increase the energy of the turtle hunter and attract capital for even greater exploitation. In the case of the West Caribbean green turtle, the obvious move is to prohibit all turtling in Costa Rican waters, because turtles are there only to breed, and because spearing them a kilometer off shore is not very different from taking them at their nests on shore. To put teeth into such a law, however, it would be necessary to stop all exporting of calipee, the gelatinous material between the



Green Turtle

Photo: Diamant-Foto by courtesy of the World Wildlife Fund Photographic Library, Morges.

(Continued on page 83)

Conservation of Orchids

by P. F. Hunt, Royal Botanic Gardens, Kew

Many of the 17,000 species of orchids are facing extinction: over-collecting (because of the great aesthetic and consequent commercial attraction of their flowers) and the ever-increasing destruction of their natural habitats are the greatest hazards.

Orchids occur in every continent of the world except Antarctica and are to be found in almost every habitat from just above high tide mark on the shore to the summits of the highest mountains, and from dry grassy plains to dark swampy forests: in each of these habitats orchids are under varying degrees and types of pressure.

As far as habitat destruction is concerned, the real long-term danger in the tropics comes from the annual wave of deforestation by burning and felling; and in the more temperate climes by increasing urbanization and changing agricultural methods. In many countries the problem is not that of conserving a single small orchid habitat but of saving the country from suicide! Intelligent people are horrified at what is going on, but most Governments give little thought to the situation or to the drastic measures that are urgently needed, both to stop further devastation and to repair the already great damage. The situation is aggravated by the upward surge of the birth rate in many tropical and sub-tropical countries.

In the temperate countries the addition of fertilizers and manures, drainage schemes, irrigation schemes, atmospheric pollution, tree-planting and the use of herbicides on certain crops are some of the factors affecting the habitat; and in most cases they render it less suitable for orchids to grow. The rarest orchids are not necessarily those in greatest danger: the localities in which they grow are usually well known and often well protected, and in some cases the species are propagated on a horticultural basis. Some of the once-common species such as *Orchis morio* and *Anacamptis pyramidalis* have a rapid rate of disappearance, much greater than that of the often protected, rarer species such as *Orchis militaris*. It is these that require special protection.

Over-collecting by both amateur and professional orchidists is the second great threat to the continued existence of certain species. The post-war development of high-speed air transport has greatly encouraged collecting since there is far greater chance of plants arriving at their destination in good condition; and a considerable trade is carried out by agents who import large quantities of plants direct from their native habitats to Europe. Moreover, demand is increasing rapidly. On the other hand, before transport was so easy, vast quantities – literally hundreds of thousands of some species of plants – were shipped in the hope that some would survive to be sold. The alternative was for the grower to be content with a few plants which he could propagate, usually vegetatively, over the years and thus partially satisfy the demand.

Whilst the export of living orchids is still permitted from almost every country, the situation is aggravated by the stringent import regulations of many countries, usually in the form of very severe quarantine restrictions in which all imported plants are fumigated irrespective of whether or not inspection has revealed unwanted insect or other disease. A five percent viability rate of plants so treated is considered good and this obviously encourages over-collection.

Hence, the need for the conservation of orchids is of overwhelming importance if we are to retain the variety of the world's organisms. Nevertheless, before one is accused of fanaticism, the point has to be made that the majority of the Orchidaceae are in an active state of evolution and speciation and perhaps certain extinctions are inevitable, especially where there is a critical relationship between an orchid species and its pollinating agent, usually an insect.

Orchids are probably the largest family in the world as regards the total number of species and, although unimportant as a food source, they give rise to a very profitable and extensive floricultural industry. Allied to this economic reason for conservation is the importance of plants in the ecology of the habitat, but here orchids do not play a very important part, although their relationship with pollinating agents such as birds and insects may prove them to be of greater value ecologically than hitherto suspected.

The basic causes of the disappearance of orchid species – besides increasing urbanising pressures – are the agents in both the exporting and importing countries who create a demand by advertising wild collected orchids for sale, the hobbyists who buy them, and the agents in the tropics who strip the trees of their epiphytic orchid growth.

As long as there is money in orchid trading – and there is very big money in it – there will always be people who can find ways and means of circumventing any legislation designed to prevent the over-collection of commercially desirable species. The only really effective remedy is to ban all international commerce in orchid species except where grown from seed or reproduced by vegetative means in cultivation. This drastic but necessary measure would involve: 1) Banning of imports by importing countries. 2) Banning of exports by exporting countries. 3) Banning of all selling of such orchids. 4) Banning of all advertising of such orchids for sale.

The populations thereby safeguarded from direct human exploitation should then be protected from "natural" enemies and from indirect human attacks such as deforestation, cultivation and the attendant effects of urbanisation, by the setting up and proper management of nature reserves and otherwise protected areas. Plants of any endangered species should be increased by any suitable method in natural or artificial habitats (greenhouse culture) and, while still keeping a good "captive" stock, attempts made to re-introduce, establish and maintain it in its former haunts.

Commercial orchid growers would not suffer unduly from such legislation as most of their trade is in artificial hybrids and in species they have propagated vegetatively themselves. A request for any species from its native home that a commercial grower particularly wanted for breeding purposes or for propagation would have to be under a licensing system for both commercial and "scientific" purposes.*

If a licence system is not feasible perhaps a very strictly enforced quota system could be substituted, the collecting to be carried out only by licensed dealers approved by some body such as the IUCN Survival Service Commission, and the selling agents also to be similarly licensed and approved. This could best be done only through Botanic Gardens who already have excellent connections regarding the import and export of species for scientific purposes.

On the credit side, some countries are at least aware of their orchid flora. In Thailand, for example, various species are protected by Royal Decree, and in the United Kingdom four rare orchids are scheduled for legislative protection in a Bill soon to come before Parliament. The recent IUCN Conference at Bariloche, Argentina, urged the governments of Latin-America to select and establish sanctuaries for native species of orchids, cacti and bromeliads and to enact any legislation required for their protection.

The plight of many orchid species is an urgent problem; but I trust I have indicated that the situation is not yet irretrievably disastrous.

* (See *Australian Orchid Review*, Vol. 32, p. 157, September 1967, re Wild Flowers and Native Plants Protection Act of New South Wales.)

The Monk Seal Colony at La Güera, Rio d'Oro

by A. van Wijngaarden, Rivot

Introduction

Since 1960, on behalf of RIVON (Rijksinstituut voor Veldbiologisch Onderzoek ten Behoeve van het Natuurbehoud), I have been collecting and collating information on the occurrence of the Mediterranean Monk Seal *Monachus monachus*.

During the last two weeks of October 1968 I had occasion to visit the Atlantic Coast north of La Güera (Rio d'Oro) and south of Port Etienne (Mauretania) as far as Jouik. The trip was financed by VARA Television (Netherlands), the intention being to make a short film of a *Red Data Book* species, its habitat and the problems of its protection, for public showing in the Netherlands.

Location

The caves which the monk seals inhabit — *Las Cuevillas*, *Cueva de las Lobos* or *Gleib Amu* — are situated approximately 15 km. north-east of Port Etienne and 20 km. north of La Güera. They are within easy reach of both places, but the route involves a "trek" across the desert, necessitating the use of four-wheel-drive vehicles. The caves have been constituted an official Nature Reserve by the Spanish Government, signified by a concrete pillar inscribed: *Las Focas, Sahara Espanol*.

Biotope

Northwards from Cape Blanco the coast consists of beaches and sand-dunes; it rises gradually and at a point approximately 15 km. north of La Güera forms steep cliffs of sandy marl stone, about 15 meters high. These cliffs are deeply underscored by the heavy oceanic swell, which has formed caves at regular intervals of approximately 100 meters. An abrasion-flat has not yet come into existence. The prevailing north-easterly swell is regular, and hurls 2-3 meter high breakers against the cliffs and into the caves. The compressed air escaping here and there through fissures in the rocks produces a whistling sound and causes the whole cliff to tremble.

The caves appear to have a depth of roughly 40-50 meters, as shown by one in which the roof has collapsed. At the interior end is a steep sandy beach. An inspection of about ten km. of the coast showed that the monk seals at present occupy only one particular cave. The reason for this preference was not at first clear but later it became apparent that this cave was the only one with the entrance lying at a certain angle to the direction of the breakers, thereby permitting a relatively gradual closure of the entrance, for which reason air compression in the cave was presumably lower than elsewhere.

Moreover, some enormous rocks were lying just in front of the cliffs to the north of the entrance, affording some protection against the breakers. With the aid of a suitable ladder these rocks can be reached from the top of the cliffs, whence, at low tide (normal tidal range 1.50 m.), the cave is easily accessible. Because we travelled by plane to Port Etienne, a suitable rope-ladder, such as is used by speleologists, was not available. To our regret it was therefore impossible for us to reach the cave entrance.

Numbers

According to Valverde (1957) only 2 animals were observed in 1942, and 21 in 1945. Postel (1950) gives

a figure of about 60. Morales Agacino (1950), however, counted only 21. Again according to Valverde (1957), the total population in 1950 may have been as much as 200 animals, 60 of which were together in one place.

We visited the caves on October 19th and 25th, and again on November 1st. On each occasion and during many hours of observation, only 8 animals were seen — 5 adults and 3 subadults. They were noticeably tame and curious, swimming towards the cave entrance from a great distance out to sea, when we appeared on the cliffs.

According to information kindly given to me by Mr. Manuel Dapena Amigo, the Governors' Delegate at La Güera, the total population is about 60 animals and has remained stable in recent years. Seals have been observed over a wide area, fishing on the high seas sometimes at a considerable distance from land. Some are frequently seen lying on the beach, even to the south of La Güera.

The British crews of two helicopters of the Araco Oil Company flying almost daily between Port Etienne and Timiriz and Cape Timothé, told us that no seals were ever seen on the low shores of the Golf du Lévrier, the Bank of Anduin and the island of Tidra. As other observations are also lacking from this area, Cape Blanco must be presumed the southern limit of their occurrence.

Protection

As Mr. Dapena Amigo informed us, the caves are still a well protected nature reserve. Killing of seals by hunters, poachers, or even fishermen, does not occur. Very seldom is an animal caught in a lobster trap — usually a young one, as happened just before we visited the area.

The cliffs above the caves are regularly visited by tourists, who cause no disturbance. Only occasionally has the Government authorised the capture of an animal

for scientific purposes or for a zoo. Last year this happened twice; one seal was caught and sent to France, another to Las Palmas. As the pool in the Las Palmas Zoo was empty on November 3rd, this animal must either have been sent elsewhere or have died.

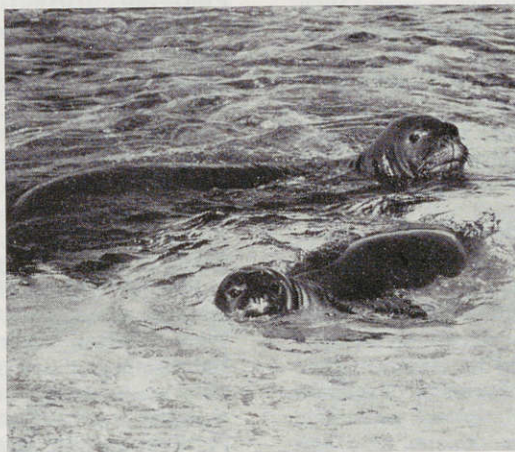
Our guide informed us that the cave was visited this summer by two French tourists who trapped an animal with the intention of taking it to France. With monk seals becoming more and more scarce, the price of captive specimens is certain to rise enormously. The danger of illicit trapping must therefore inevitably increase.

It is gratifying to see what the Spanish Government has already done for the protection of the species in this remote area. It is

surprising, however, that in spite of these positive measures the number of animals has not built up more quickly and that so far the seals have not reoccupied parts of their former range on the coasts of Rio d'Oro and Morocco.

Conclusion

From the foregoing it is self-evident that there is need for a thorough ecological study of the monk seal on which plans for effective future protection can be based. It is therefore encouraging to know that Dr. J. A. Valverde has already planned such an investigation, and I urge that he be given every support.



The Hawaiian monk seal *Monachus schauinslandi*, a close relative of the Mediterranean species.
Photo: Karl W. Kenyon by courtesy of the World Wildlife Fund Photographic Library, Morges.

Congo: the Albert National Park

Further to the report in IUCN Bulletin 2(9):67, it is understood that two extensive field operations, followed by regular patrolling, have been undertaken by national park guards under the leadership of Chief Warden Anicet Mburanumwe, on and around the Virunga Volcanoes. These activities have resulted in the evacuation of the Rwanda pastoralists and their cattle from the gorilla habitat within the Albert National Park. The destruction of the Virunga gorillas by direct slaughter has been denied: rather have they succumbed to spoilage of the habitat, starvation and incessant disturbance.

National park guards are currently engaged in other operations within the Park, and the Chief Game Warden is of the opinion that these measures may bring the whole area under effective control within about four months.

It appears that the Rwanda pastoralists and dissident Congolese soldiers are not alone in ravaging the Albert National Park: there are constant intrusions from Uganda in the course of which 22 Congolese park rangers have been killed by well-armed Ugandan poachers, who take full advantage of the knowledge that they cannot be pursued beyond the international frontier. Many national park rangers, being totally unarmed, have relinquished their patrolling duties. The few who still patrol do so at risk of their lives and those of their families.

Kenya: Shimba Hills

On 19th September 1968, the Shimba Forest was officially declared a national reserve.

Situated only 20 miles from Mombasa, between the Tanzania border and the Mombasa-Nairobi railway, this area contains almost the entire Kenya population of the sable antelope *Hippotragus niger roosevelti*. A few isolated relict herds cling to existence elsewhere in the coastal hinterland but the total is very small. The Shimba herd contains about 60 antelopes and is to be the subject of an ecological study which "will enable the National Parks to plan the management and development of the reserve in conjunction with the Forest Department in such a way as to make the best possible use of the wildlife and other resources of the area."

The study will be financed chiefly by the Ford Foundation with help from the Elsa Wild Animal Appeal. An educational centre, to be supported by the African Wildlife Leadership Foundation, will also be established in the new reserve.

Australia: Tasmanian Conservation Trust

A recent well-attended meeting in the Hobart Town Hall led to the formation of the Tasmanian Conservation Trust, to which Dr. J. L. Davies, Reader in Geography at the University of Tasmania, was elected President. Already membership stands at around 150. The formation of the Trust was stimulated by controversial proposals for the development of Lake Pedder National Park which crystallized the feeling of those Tasmanians who are becoming increasingly concerned about the changes taking place in the natural environment of Tasmania, and especially the future of the endemic flora and fauna. The establishment of this new body was strongly supported by the Australian Conservation Foundation.

Papua - New Guinea: protected fauna

In October 1968, the Administrator of the Territory of Papua and New Guinea declared various species of birds, butterflies and fish to be protected fauna. Among them are the birds of paradise and other members of the Paradisaeidae, various egrets and ospreys, as well as Salvadori's teal, *Salvadorina waigeuensis*. Seven species of the beautiful bird-wing butterflies (genus *Ornithoptera*) are also accorded protection, as well as brown trout and rainbow trout less than 8 inches in length.

British Virgin Islands: development project

One of the few areas in the world almost entirely to have escaped chemical pollution with fertilizers, pesticides and hydro-carbons is under the threat of development as a tourist centre by a London corporation.

The Island of Anegada, twenty miles to the northeast of the main British Virgin Islands group, harbours a remarkable self-contained micro-ecosystem with an interesting biota and a small indigenous community. Important whale, bird and fish migration routes pass nearby. Owing to its non-agricultural nature and its location with respect to prevailing easterly winds and ocean currents, the island has more or less escaped contamination and could therefore function as a useful reference point in studies of other Lesser Antillean islands.

Several preliminary reconnaissance surveys of the reefs near the island have already been undertaken as well as a geological expedition and some herpetological studies, notably of the iguana. However, the biota of Anegada is essentially unstudied. For this reason, the Caribbean Research Institute is anxious to promote a comprehensive ecological survey of the island.

Ceylon: Society's 75th anniversary

On May 23rd this year, the Wildlife Protection Society of Ceylon celebrates its 75th anniversary. The Society must be among the world's earliest conservation organizations and is probably the oldest in the East. It was founded in Colombo in 1894 as the Game Protection Society of Ceylon. The declared objects of the Society are: to prevent the progressive destruction of species of wild animals, and, wherever possible, to preserve wildlife and plants intact in natural conditions in Ceylon; to promote an interest in the life histories of all forms of animal life and to collaborate with other societies and institutions which have similar aims.

A special Jubilee number of the Society's well-known journal *Loris*, will be published to mark the occasion.

Pakistan: protecting the Great Indian Bustard

In Volume 2 of the *Red Data Book*, the Great Indian Bustard, *Choriotis nigriceps*, is listed as very rare and decreasing in numbers, its survival giving cause for considerable anxiety.

Certain efforts have been made to preserve this species in India, as reported in ICBP Bulletin No. 9, pp. 86-87, but until now these proposals do not appear to have been implemented.

The bustard does not seem to have bred in West Pakistan within living memory. Although it was plentiful in Sind at the turn of the century it has been a rare and irregular summer visitor to the desert areas on the Indian/West Pakistan border. In the summer of 1967, in the Bahawalnagar area of Cholistan, seven were sighted by officials of the Pakistan Forestry Department but, regrettably, two of the birds were shot by local hunters. Fortunately, the recently appointed Chief Conservator of Forests responsible for the Cholistan area is an ardent conservationist and has taken vigorous measures to curb poaching in the border areas. In late March 1968, several Great Indian Bustards were observed near the Indian frontier close to Bahawalnagar town and by the middle of the following month seventeen were counted in this locality. A Forest Ranger was given special responsibility for keeping watch on the area and warning hunters that these were protected birds. It is therefore gratifying to be able to record that up to the end of August all seventeen bustards were still in the vicinity - although there was no evidence of breeding. In view of the constructive action taken by the Pakistan authorities, it is confidently expected that next March will again see an influx of these birds into Pakistan territory; and it is hoped that they may feel sufficiently secure to breed.

A European Association of Free Nature Reserves

In a world rich in national conservation associations and organisations, one might wonder what purpose the creation of a new one could serve. EUREL – the Association Européenne des Réserves Naturelles Libres – claims to be filling a gap that exists in the general system of nature reserves. Its aim is to promote the conservation of threatened animal and plant species in Europe by establishing, with the help of property owners, a network of Free Nature Reserves. The word "Free" means that each reserve comes into being simply by way of an agreement between EUREL and the landowner. The advantages of this flexible system are obvious: any nature-loving owner of land, which is of importance for nature conservation, whether private individual or community, local authority or society, can transform his property into a Free Nature Reserve without undue expense or wearisome negotiations.

EUREL gives moral and practical support in the form of information, advice on the best way to achieve the general aims and if necessary tries to give financial assistance for technical requirements.

One of the most important projects undertaken by EUREL is the protection of the birds of prey in Lorraine; these species are, unfortunately, in increasing danger of extinction. Lorraine includes north-east France, south-east Belgium and part of Luxemburg; thus, as an international, scientifically-based institution, EUREL claims to be well fitted to undertake such a project. It is hoped to establish a conservation centre near Dieuze, France to carry out this work.

Another project undertaken by EUREL with World Wildlife Fund assistance, is a protection programme for birds of prey in northern Germany; in March, 1968, an area of 150 hectares was declared a EUREL-reserve in Schleswig-Holstein. A project to protect the birds of prey in northern Spain (Pyrenean region) is also being studied. The establishment of more free nature reserves in Austria, Germany, Italy and Ireland, within the framework of special WWF projects, is in preparation.

U.S.A.: power technology

The world inventory of case-histories of economic disasters resulting from the misguided application of an increasingly powerful technology is closely approaching astronomic proportions. Examples of permanently damaged ecosystems, of disturbed ecological equilibria abound in every country. Many are caused by species introductions – as, for example, the rabbit in Australia, and the prickly pear in America; others through the ignorant application or disposal of toxic products, and yet others by such agricultural practices as irrigation and deforestation in areas which are pedologically unsuited.

After a series of disasters brought about through simple ignorance of the consequences, agriculturalists and others often have to resort to biological and cultural practices in controlling pests and diseases or in increasing yields, thereby allowing natural processes to resume their functions.

It was with these considerations in mind that the Conservation Foundation and the Centre for the Biology of Natural Systems at Washington University convened a conference on "Ecological Aspects of International Development" to help illuminate the processes of environmental deterioration abroad and to explore the implications for programmes of international development. This was held from December 8-11, 1968, in Virginia.

About fifty participants were invited to prepare carefully documented case-histories for discussion. The intention was not to provide a programme for the development of any region, but it was expected that the case-histories considered would carry clear implications for international development.

U.S.A.: wildlife refuge system

The Advisory Board on Wildlife and Game Management, appointed by ex-Secretary of the Interior Stewart Udall, recently published its third report, on the subject of "the national wildlife refuge system". The report is an appraisal of the significance of the national refuges to migratory bird conservation, with emphasis on waterfowl, and comments on management of these refuges.

The Advisory Board also puts forward a clear statement of policy for the system and the logical tenets of its future development. The report concludes that the system of 250 migratory-waterfowl refuges is still inadequate to protect the resource and recommends *inter alia* that more breeding-grounds, in particular, should be brought into the system. New units should be selected to fill geographic gaps or to strengthen weak units. General refuges for non-waterfowl should also be expanded, with emphasis on rare and endangered species.

Insofar as possible, plans for the development and management of individual refuges should include preservation or restoration of natural ecosystems along with the primary management objective.

The report points out that refuges are for people as well as for animals, but considers that patterns of public use must be rigorously controlled to protect the primary purpose of the refuges – wildlife viewing, hunting and fishing are considered appropriate uses, provided that activities are adequately managed. In addition, qualified scientists and naturalists should be encouraged to use such areas extensively since, in many regions, refuges offer the only opportunities for continuous research.

Austria: first national park

The establishment of Austria's first national park is to be effected, it is hoped, by 1970 – European Conservation Year. The park will embrace part of the western chain of the Hohe Tauern, the Grossvenediger Massif, the Grossglockner, the Pasterze Glacier and the Krimml Falls – among the most imposing in Europe – and will be situated at the intersection of the Salzburg, Karnten and eastern Tyrol borders.

Should the proposed plans come to fruition, this 'nature reserve' would extend to 1,300 sq. km., of which 77 per cent is inhabited. By comparison, the Swiss National Park covers 195 sq. km. but is uninhabited.

A second important project exists for a national park in the Lake Neusiedl region, in Burgenland. This 'Steppe-land National Park' would enclose the lake, its fringe of reeds and the Seewinkel salt-marsh area, and would extend as far as the Hungarian frontier, covering an area of 480 sq. km.

Switzerland: grass-frog nuptials

On the edge of a forest, somewhere in the mountains of Canton Zurich, lies a pond that has been the recognized trysting-place for generations of grass-frogs. With the advent of Spring, the frogs creep forth from hibernation in mossy bank and woodland glade, and converge upon the pond from all parts of the forest.

Last year, however, their matrimonial bliss was rudely disrupted by construction of a road between the forest and the pond which the frogs were obliged to cross in order to keep their tryst. Many met their death – unmerited by such compelling constancy – under passing vehicles. The slaughter was such that an unparalleled spate of telephone calls almost overwhelmed the commune offices, and resulted in the road being closed to traffic during the breeding season. In this very considerate manner has the Commune of Horgen atoned for its ill-placed road.

Now the frogs can breed in peace and, once the next generation has been assured, the entire community will again disperse, each going its separate way to resume its solitary, hermit-like existence.

Land use history, landscape change and planning problems in Banff National Park

by J. G. Nelson, the University of Calgary

Growing recreational use of Banff and other western Canadian national parks has caused a number of changes in landscape and promises to cause many more, not only as a result of pressure by developers and certain segments of the public, but also through the actions and plans of the National and Historic Parks Branch (hereafter called the National Parks Branch) itself. Many of these controversial changes are judged on the basis of historical or historical-geographic considerations. For example, some people believe that the national parks were established to preserve "wilderness", and so argue that downhill ski runs and other similar facilities should not be constructed there. Others argue that the national parks represent a large reserve of "untouched wilderness" which will not be reduced significantly by the introduction of a few roads or downhill ski runs.

Studies in land use history and landscape change demonstrate that parks such as Banff are not "untouched" landscapes, nor are they "portions of the original North America... just as it was when the first white man saw it." Wildlife and vegetation have been changed considerably since the coming of the white man and his culture. Indeed the first changes undoubtedly preceded his actual entry into the area, being caused by the introduction of the horse and the gun to the Indian by the European.

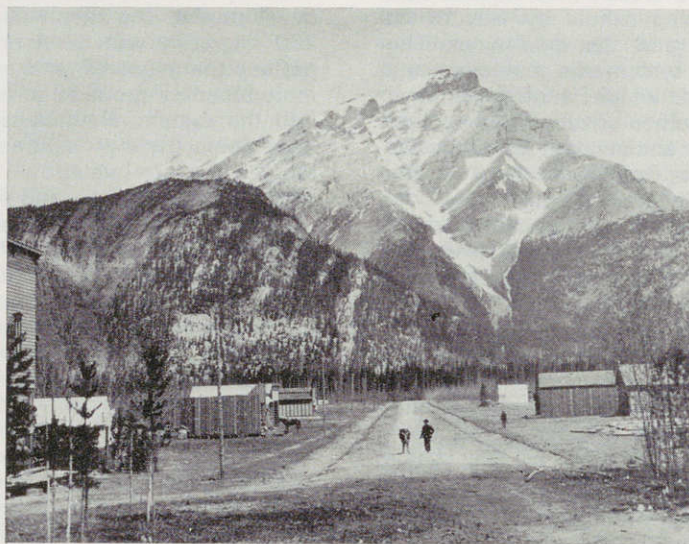
Wildlife. Late eighteenth and early nineteenth century observations by fur traders indicate that wildlife was plentiful both in kind and number. David Thompson, a surveyor and fur trader, travelled up the Red Deer River valley to the vicinity of the present eastern boundary of Banff National Park in 1800 and observed many buffalo, elk, moose, deer and other small fur bearers such as the fisher. Similar observations were made by members of the British Exploring Expedition about 1860. However, in the 1880's and 1890's, complaints were made about the high toll that railwaymen, miners and Indians were taking of wildlife. "Big game" was said to be "extinct" in parts of the country. Although the first reserve at Banff was set aside in the mid-1880's, wildlife protection did not really begin until after about 1911. As a result of the continued development of this policy, a varied and numerous wildlife population can be found in Banff and other nearby national parks today, although this population differs in kind and number from that of earlier days. Elk are particularly numerous and place heavy pressure on vegetation. Their numbers are managed through control programmes conducted by the park wardens.

Vegetation. Just as strict fire control policies have had profound effects on the vegetation of the park in the last few decades, so their absence in earlier days resulted in widespread conflagrations and forest destruction. Early white fur traders and prospectors are known to have caused some burning. But the construction of the Canadian Pacific railroad along the Bow Valley and through the Kicking Horse Pass in the early 1880's resulted in extensive fires, much of the spruce-fir forest being replaced in these and later years by fire-following

lodgepole pine. Cutting of the forests began on a large scale, with timber berths being established in parts of the present park area. Settlers in early railroad and mining communities also seem to have cut a considerable amount of wood for construction, fuel and mine props.

Cultural Activities and Facilities. During the course of white settlement, trapping, mining and a variety of other activities were carried on in the Banff National Park area. These activities have largely been eliminated either through voluntary cessation or because of national parks policy. However, some artifacts can still be seen here and there in the park, for example the old coal town of Bankhead, just east of Banff townsite.

Recreation: Banff Townsite. Other cultural activities and facilities have been encouraged or permitted to grow within the confines of Banff National Park, notably those connected with recreation. One such



Late 19th century street scene at Banff, Alberta.

facility is the townsite of Banff, which is said to have originated as a railroad town, with the implication that it predated and therefore was difficult to remove from the national park. Actually the townsite was a planned one, established as a spa associated with the Banff hot springs. After 1887, when the original hot springs reserve was enlarged and Rocky Mountain Park was established, the townsite took on the functions of a service centre for this park and eventually for its successor, Banff National Park. In the years up to 1910, the Federal Government and the Canadian Pacific Railway both assisted in providing a variety of services for the townsite, for example tote roads and facilities for water supply and sewage disposal. About the time of World War I, and with the introduction of the automobile, a road was built to Calgary and that city became a major source of park visitors. Much residential development took place in the 1920's and 1930's, mainly in the form of single-family dwellings. Many of these structures still sprawl over the townsite, making for low building and population density. A variety of commercial enterprises also were allowed to develop, many not being essential to the enjoyment of the hot springs or the scenery or the outdoors, but providing traditional rights of residence and livelihood for families whose presence and numbers now cause management problems.

Service Centres. Today service centres are being developed in the park at least in part in an attempt to control the growth and effects of Banff townsite. Apparently these centres will be home only to parks personnel and a few entrepreneurs and employees whose businesses and work are located nearby. However, there is an obvious risk that the service centres will simply create smaller duplicates of the Banff townsite problem in various parts of Banff National Park. Moreover, the need for more service centres is rather difficult for some people to understand. Gas and other supplies can be readily obtained at Banff, Field and Lake Louise, as well as just outside Banff National Park.

Winter Sports. Another type of recreation which is becoming more and more apparent in Banff and other national parks is winter sports. As recreational demand increased after World War II, and the population of nearby Calgary rose sharply with the oil boom, certain segments of the public and some park planners began to see a need for the further development of skiing and other winter sports in Banff National Park. In the 1950's and 1960's the national parks administration supported development of certain facilities at sites such as Mount Norquay, Sunshine Valley and Lake Louise.

Interest also developed in the possibility of holding the Winter Olympic Games in Banff National Park. Attempts to secure the games for 1968 and 1972 failed for a variety of reasons, among them the attraction of other sites and the opposition of "conservationists". Their arguments were various, including the notion that the games and the associated facilities were contrary to the original purpose of the national parks, a position difficult to subscribe to wholeheartedly in view of the variety of recreational and cultural facilities that have been introduced in the vicinity of Banff townsite, as well as in other parts of Banff National Park, since its establishment in the 1880's. Much more meaningful was the argument that the introduction of the Winter Olympics would mean an increase in facilities in the Banff area, perhaps small when considered individually, but large when thought of in terms of the many other possible changes resulting from contemporary and future pressures for summer and winter recreation in the park.

In the last few years a new type of winter sport has appeared in the form of the motorized ski-doo, which has gained access to certain trails in the park. Whether the decision to open these trails resulted primarily from public pressure or because planners saw a recreational "need" is uncertain. However, the consequences are clear: a demand for more trails by the rapidly increasing number of ski-dooers; conflict with skiers and others; worry about the welfare of users who are often ill-clad and unprepared for weather and misfortune; and a growing concern about the suitability of the noisy machine in Banff or other national parks.

Back-country or "Wilderness" Recreation.

Certain other recreational activities, which require few or no facilities, have a long history in Banff and other national parks. Among these are mountain climbing, hiking, "wilderness" camping and cross-country skiing. The number of people who engage in these activities, especially some distance into the back-country, is small in proportion to those who come to the national park for other purposes. Nevertheless, back-country use is growing and so, therefore, is the demand for large areas of land where urban or cultural influences are minimal or absent and contact with other humans unlikely. James Thorsell makes it clear that the maintenance of trails has fallen off over the years as recreational style has switched from tally-hos, walking, camping and climbing to downhill skiing, driving for pleasure and other facilities-oriented activities. Thorsell calls for a "wilderness" plan, involving a better trail and information system, the provision of some basic facilities and recognition by senior management of the need for attention to back-country use.

Transportation. Another facility which has developed in association with, as well as independent of recreation, is the modern transportation system. The Canadian Pacific railroad originally was laid out as a transit route across the mountains, but its presence helped lead to the establishment of the original hot springs reserve and so Banff National Park. The first highway from Banff to Calgary was finished in 1914 and major roads were subsequently completed from Banff to Radium Hot Springs, Yoho National Park, and Jasper in 1923, 1926 and 1940 respectively. In the 1940's, 1950's and 1960's a series of programmes were undertaken across Canada which eventually led to the

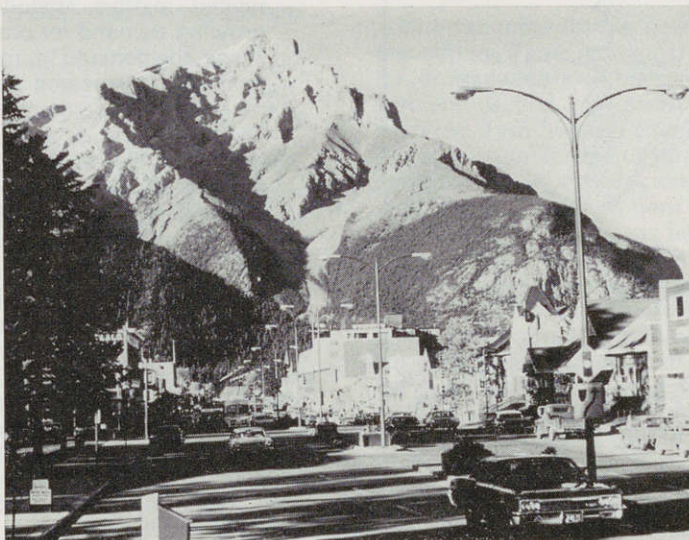
construction of the Trans-Canada highway, a portion of which passes through Banff National Park. Its conversion from a two-lane to a four-lane highway is now in progress.

In addition to the foregoing routes, the post-war surge in tourism has led planners to propose a network of scenic roads in Banff National Park. These roads are intended to provide access by automobile to areas of outstanding beauty as well as to ease heavy traffic and tourist pressure in Banff townsite and other congested areas by spreading automobiles and visitors over large

"undeveloped" parts of the park. Initially, facilities such as public campgrounds are envisioned along these scenic roads, but historical precedent suggests gas stations, motels and other facilities probably will be demanded by or provided for the public before too long.

It is difficult to obtain firm information on the contemplated road programme, but one major scenic route definitely is being considered for construction in the near future. The Red Deer project will involve the paving and improvement of about 45 miles of the present Cascade fire road. From the junction of that fire road and the Red Deer River, the new road will then be driven west for about 30 miles through the isolated upper Red Deer River valley, meeting the Trans-Canada highway near Lake Louise. Construction through the upper Red Deer would be particularly unfortunate as this probably is the largest of those areas in the park where the landscape is still comparatively close to what it was when the fur trader and the Indian roamed the land. The upper Red Deer largely escaped the fires, mining and lumbering that affected so many parts of the parks in the decades around the turn of the twentieth century. It is therefore covered for the most part with relatively old spruce-fir forest rather than the fire-following lodgepole pine. The upper Red Deer also shelters grizzly bear, mountain goats and other animals not so commonly seen in the more frequented parts of the park. Its faunal importance certainly merits further study before any road is constructed through the valley: although there is already a considerable body of evidence in support of the setting aside of this area, not for the tourist and the automobile, but for the camper, the photo-hunter and others who wish to enjoy the so-called "wilderness experience."

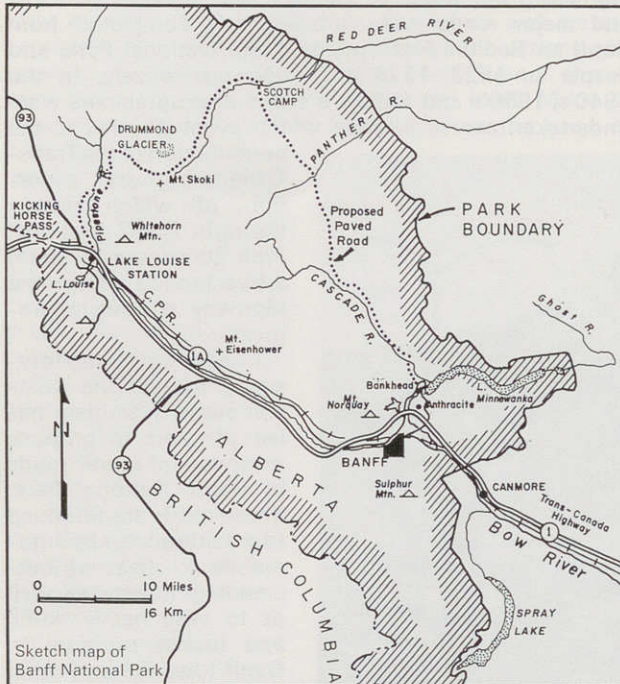
Science. Scientists were among the earliest Europeans to visit the Banff area, so that research has a land use claim that pre-dates tourism or similar uses. Biological and geological work has been carried on for decades, with disciplines such as physics, archaeology and geography becoming involved in more recent years.



The same scene to-day

Both photos by courtesy of the Provincial Archives, Victoria, B.C.

Much of this research does not involve facilities, but trail and road construction, sample collection and the like can cause landscape change. Moreover, scientists often wish to change the landscape in the interests of their research although parks policy does not always allow them to do so. Scientific use of Banff and other national parks is increasing, as also are conflicts with other users.



Summary and Conclusions. To argue for or against the development of more scenic roads and other changes in terms of inaccurate conceptions of the purpose of the national parks or of their land use and landscape history seems fruitless. The national parks are not "untouched wilderness" nor are they "single purpose" areas as a parks official has recently claimed. A variety of land uses have been carried on in Banff and other national parks over the years. Some of these, for example mining and lumbering, have largely been eliminated – although contemporary digging of gravels for highway construction leaves many scars on the landscape. On the other hand, recreational and other uses have been permitted or encouraged. Land use conflicts are increasing, particularly between facilities-oriented recreation and other uses. Indeed the development of facilities promises to cause much landscape change. Some of the changes will be large in themselves; others seem small but cumulatively could be very large.

We seem then to be at a land use watershed in Banff National Park. If a number of contemplated land use changes are actually introduced, the landscape of the park will be changed fundamentally. In the light of this it seems necessary that:

- (1) A moratorium be declared on land use changes in Banff National Park until a "master plan" has been released to the public and reviewed in the manner set forth below.
- (2) A National Park Advisory Board or Conference, consisting of experts in biology, geography and other relevant fields should be appointed immediately and should study and make recommendations on the "master plan" for Banff and other national parks. Any significant land use changes also should be considered by this body in relation to the "master plan". Any proposed changes in the "master plan" should be reviewed by the Advisory Board and in the manner set forth below.
- (3) Public hearings on the "master plan" for Banff National Park should be held in Calgary, Vancouver and Ottawa. A similar pattern should be followed in other parks as they are of more than local concern.

The Canadian National and Historic Parks Branch has held one or two hearings at places in Canada and has announced that it intends to hold others. But significant changes in land use policy or practice continue to be made in Banff without these hearings. For example, a policy on the use of ski-doo's in Banff Park was recently introduced without any apparent discussion with interested groups such as the National and Provincial Parks Association of Canada.

- (4) The National Parks Advisory Committee – or a Task Force of knowledgeable people – should be commissioned to review national park management and related matters, including an assessment of the growing demand for protection of wildlife and landscape, the demand for recreation of all kinds, and the demand for research and other traditional national park uses. These demands should be related to the limited amount or development of public or private land available for such uses in Canada. Recommendations should then be made on the means of meeting future demand while minimizing adverse effects on the landscape of Banff and other national parks.

Acknowledgments. The research upon which this article is based was supported by the National Research Council of Canada. The article summarizes many of the points made in a larger paper, *Man and Landscape Change in Banff National Park: A National Park Problem in Perspective*, prepared for the conference on *The Canadian National Parks: Today and Tomorrow*, held at Calgary, October 9–15, 1968.

Ethiopia

The following Resolution has been adopted by IUCN's International Commission on National Parks:

Welcoming the setting up of a Wildlife Conservation Department by the Imperial Ethiopian Government for the purpose of developing National Parks and Equivalent Reserves and introducing other much needed measures for the more effective conservation of the country's wildlife resources in accordance with the recommendations of the UNESCO Missions which visited Ethiopia in 1962 and 1964–65;

concerned that three years having now elapsed since the establishment of a Wildlife Conservation Department, Ethiopia remains one of the few countries in Africa without either legally constituted National Parks or Reserves or any legislation for the conservation of wildlife;

convinced that there is an urgent need for the conservation and effective management of Ethiopia's already much depleted wildlife resources, and particularly of those rare endemic species such as the walia ibex, mountain nyala, Somali wild ass, Swayne's hartebeest and Simien fox for which Ethiopia bears a special national and international responsibility;

convinced of the important role which wildlife can play in the economic development of modern African states in the field of tourism, as a source of protein, and for their educational and scientific values,

urges the Imperial Ethiopian Government to review the effectiveness of its current wildlife conservation programme with a view to ensuring the earliest possible implementation of the UNESCO Mission's recommendations, securing the immediate establishment of internationally recognized National Parks and Reserves, and the introduction without further delay of effective conservation legislation.

Since this resolution was adopted, Order No. 54 of 1969 has been published in the Ethiopian Official Gazette dated January 6th 1969, providing for the establishment of the Awash National Park. Unfortunately, however, the new park does not yet conform to the criteria laid down for admission to the United Nations List of National Parks and Equivalent Reserves. —Ed.

The Amur Leopard in the USSR

by A. G. Bannikov

In the Soviet Far East leopards have never been widespread and have always been regarded as uncommon. In the central reaches of the Amur River it was a very rare animal (Przewalski, 1870). There is some evidence of leopard sightings at the end of the 19th century around Lake Khanka (*Maritime News*, newspaper, 1896). It was a great rarity on the slopes of the Little Khingan Mountains.

In the early part of the 20th century V. K. Arseniev (1914) carried out counts on the northern boundary of its range along Lake Khanka, Ussuri, Anouchino, Dadan-shan, and Ol'ga Bay.

At the present time leopards occur south of Lake Khanka, as well as along the rivers Channingou, Mongutchai, Sidemi and Kedrovaia. 25–30 years ago they were quite common in this region (Vysotskii, 1935), but during the last ten years only three have been taken. Leopards also occur in the neighbourhood of the town of Grodekova where tracks have been reported regularly (N. V. Rakov *in litt.*), as well as along the upper reaches of the Maicha and Stieklianoush rivers in the Ussuri region. In 1960–61 a family lived in the mountains south of the railroad between Shkotovo Sutchan, and a solitary leopard lived on the left bank of the Sutchan River. Eastwards leopard occurred along the Pchusun River (N. V. Rakov *in litt.*). South of the Ussuri region leopards now inhabit the upper reaches of the rivers Pravaia Lefou and Daoubiche between the towns of Anouchino and Arseniev. They occur only rarely along the tributaries running into the Ulach and Upper Ussuri rivers. They are considered a rarity on the upper reaches of the Bikhin River and its tributaries, as well as along the Bira River (Amur basin).

The leopard's overall range has contracted and the animal has disappeared from a number of formerly uninhabited river valleys which have recently been taken up for human settlement.

At the beginning of the 20th century it was usual for hunters to capture 2 or 3 leopards annually in the southern part of the Soviet Far Eastern Territory. Today, however, there are in all probability no more than 10–15 individual animals in the entire region.

Under-Secretary of the Interior

President Nixon has recently appointed Russell E. Train to be Under-Secretary of the United States Department of the Interior.

For more than a decade Mr. Train has taken a leading part in conservation activities, notably in the sphere of conservation education. The establishment of the first training school for Game Department and National Parks personnel at Mweka in Tanzania, for example, was made possible by the African Wildlife Leadership Foundation which he founded for that specific purpose, and over which he has presided since its inception.

In 1965, after eight years as a Judge of the Federal Tax Court, Mr. Train became President of the Conservation Foundation, a non-profit making organization with which IUCN works in close accord. Under his presidency the Conservation Foundation has become an increasingly powerful force, particularly in the realms of environmental studies (both rural and urban) and conservation education – using the term in its broadest sense – thereby providing the means for increasing public awareness and comprehension of issues which are of such vital concern to the future welfare of mankind.

Russ Train, who is a Member of IUCN's Executive Board, is an administrator of exceptional ability and stature, and it is gratifying to know that the continuation of the significant conservation programme so ably initiated by Stewart L. Udall will have such an accomplished advocate.

Sea Turtles

(Continued from page 75)

bones of the under-shell. Calipee is essential in all recipes for clear green-turtle soup, now growing in popularity in Western Europe. It is a light, imperishable, high-priced material that can be taken from turtles killed secretly at night, and can easily be slipped into legitimate trade. What the other countries of the western Caribbean could do to repay Costa Rica for producing their green turtles with no profit to herself is not in my field of competence to conceive. But the answer ought to be sought without delay.

One recourse that appears to offer promise is turtle mariculture. There is no inherent reason why green turtles, for example, cannot be profitably reared through their carnivorous first year and then put out on turtle grass pastures. Two harmful side effects to be expected from the premature spread of turtle culture are the inevitable parasitization of natural nesting grounds for eggs with which to stock rearing pens, and the stimulation of new markets and higher prices before the volume-production necessary to satisfy the demand and relieve the pressure on wild populations is achieved. Controls should be set up to keep turtle farms from prematurely attempting commercial operation. Permits to take eggs should be issued only to sound pilot projects that embody plans for careful efforts to abridge the complex migratory life cycle of the species and induce it to breed in enclosures. Production for profit should go ahead only when results of these experiments make the project independent of natural nesting grounds.

As preliminary steps in an international program to protect and maintain sea turtle populations in the Caribbean, the following moves are recommended:

- Organize and maintain for a period of at least three years a comprehensive nesting survey, to determine what Caribbean shores are visited by separately nesting sea turtles, where any tendencies to aggregate may occur, and what the limits and peaks of nesting seasons are.
- Initiate a seasonal tagging project at Aves Island, to outline the resident ranges of the sea turtles that nest there.
- Arrange effective protection for the nesting colony of *Chelonia* on Aves Island.
- Arrange to provide complete protection for the Costa Rican nesting colony of *Chelonia*, both on shore and in coastal waters, working out suitable compensation to Costa Rica for this contribution to the welfare of her neighbors.
- Promote local legislation throughout the Caribbean prohibiting the taking of eggs or nesting female turtles on any island or mainland shore.
- Organize strict local and international control over the trade in calipee and over that in turtle skins, prohibiting the exportation or storage of either product between the months of June and November, and taking steps to insure that neither product, when taken from a turtle not otherwise used, may enter the market.
- Promote pilot turtle mariculture, supporting only projects in which experimental breeding is a major factor of the plan and allowing production for profit only when a project has shown itself to be independent of natural nesting grounds.

It seems certain that saving the Caribbean sea turtles will require an integrated international effort, grounded not on parochial self-interest but on the facts of ecologic zoogeography. It seems equally clear that unless such an effort is made, the present decline of the resource will accelerate, the people of the seaside Caribbean will lose an age-old asset, and some of the species of Caribbean turtles will disappear completely.

Erna Mohr

Erna Mohr died on the 10th September, 1968, mourned by all who had known her and had experienced her warmth, her untiring helpfulness and her friendship, and by all her colleagues who respected her as one of Germany's most distinguished zoologists.

Born the daughter of a teacher on the 11th July, 1894, in Hamburg, she taught in an elementary school from 1914 to 1934. A naturalist from childhood, with a great interest in animals, she was already working at the Zoological Museum in Hamburg by the age of 18, while still a student. She began as an artist and later, once she had become a teacher, continued as honorary Museum Assistant. Her scientific interests at first lay with the invertebrates, later with the lower vertebrates, in particular with fish. In this field she succeeded in 1914 in determining the age of Ctenoid Scurfs. From the outset Erna Mohr avoided being one-sided and, thanks to the tireless diligence that characterized her life, she not only acquired a comprehensive knowledge of her subject but – despite her retiring disposition – eagerly shared it with generations of young zoologists. Her pleasure in teaching distinguished her whole career and her numerous publications in mammalogy were orientated in this direction. Erna Mohr was certainly one of the leading authorities on regional small mammalian fauna. Her book *Die freilebenden Nagetiere Deutschlands* became a standard work. With some basic and comprehensive monographs, she summarized present knowledge on the wisent, as well as on the European Pinnipedia, the Sirenia, the Suidae, etc.

In 1934 the Hamburg Educational Authority released Erna Mohr from teaching so that she could devote herself to museum work. On the 1st January, 1946, she became curator of the vertebrate section in the Hamburg Museum of Zoology.

Erna Mohr's interest has centred above all around the conservation of nature. From 1924, she belonged to the Board of the "Internationale Gesellschaft zur Erhaltung des Wisents", and by establishing a studbook for the wisent she constructed a firm foundation for the preservation of this impressive wild bovine. In appreciation of her work for the preservation of this species, she was awarded the Society's Gold Medal. Her work and pro-

posals for safeguarding the Przewalski horse have also been important.

Erna Mohr was a founder member and served on the Board of the "Gesellschaft für Hundeforschung"; she was associate editor of the *Zeitschrift für Hundeforschung* and was dedicated to the breeding of Hungarian sheep dogs.

Although her devotion to science and her personality had been honoured in her lifetime, Erna Mohr remained unaffected and retained her innate modesty, her kindness, her unselfishness, her ceaseless diligence and her thirst for knowledge. In 1944 she was elected a member of the "Kaiserlich-Leopoldinisch-Karolinische Akademie der Naturforscher zu Halle (Leopoldina)"; and in 1950

the Faculty of Natural History of the University of Munich granted her an Honorary Doctorate.

In particular Erna Mohr deserves recognition for her work with the Deutsche Gesellschaft für Säugetierkunde which, as a founder member, she helped to reconstruct after the Second World War. Under her guiding hand, the Journal of this Society – *Zeitschrift für Säugetierkunde* – achieved a high scientific reputation both in Europe and abroad.

Only the day before she died – at the annual meeting of the Deutsche Gesellschaft für Säugetierkunde in Bern on the 9th September 1968 – she was awarded honorary membership of the Society. Our gratitude to her, however, does not depend upon such honours for its expression. She has always been so much a part of us and will remain so by the example she has set and through the influence of her comprehensive life's work.

She was a member of two of the IUCN Survival Service Commission's specialist groups: the Wild Horse and the European

Bison Groups. In this sphere, too, she worked with her customary diligence for which we are deeply grateful.

For some time we had known that Erna Mohr was in poor health. But she possessed a great measure of self-control so that death came unexpectedly. She had enjoyed a full life but it is inevitably hard to part from a person who was always there when needed, who never intruded, who invariably gave to the utmost and whose help was a matter-of-course: who was, in short, a truly remarkable person.

Heinz-Georg Klös



IUCN and WWF

The International Union for Conservation of Nature and Natural Resources (IUCN) is an independent international body with headquarters in Morges, Switzerland, whose membership comprises international organizations, states, government departments and private institutions. IUCN's main purpose is to promote or support action which will ensure the perpetuation of wild nature and renewable natural resources all over the world, not only for their intrinsic cultural or scientific values but also for the long-term economic and social welfare of mankind.

The World Wildlife Fund (WWF) is an international charitable foundation also with headquarters in Morges, and with National Appeals in a number of countries. WWF's aim is to support the conservation of nature in all its forms on a worldwide basis by raising funds and allocating them to projects, by publicity and the education of the general public. WWF projects cover a wide range varying from the purchase of land for national parks and reserves to ecological surveys and emergency programmes for the safeguarding of endangered animal and plant species. Among its projects, financial support for IUCN has the highest priority in order to enable the latter to build up the vital scientific and technical basis for the world conservation effort.