

Nature reserves are areas of water or land, targeted for programs of conservation. National parks, sanctuaries and various kinds of reserves fall under this category.

In the past, nature reserves were inspired by religion, aesthetics, recreation, economy, culture and ecology but the common bond was always man's relationship with nature. Nature reserves are a form of social strategy towards nature or a kind of territorial arrangement to preserve the ecological balance. As man's impact on specific parts of the environment becomes greater, the need to maintain areas free from his interference becomes a priority.

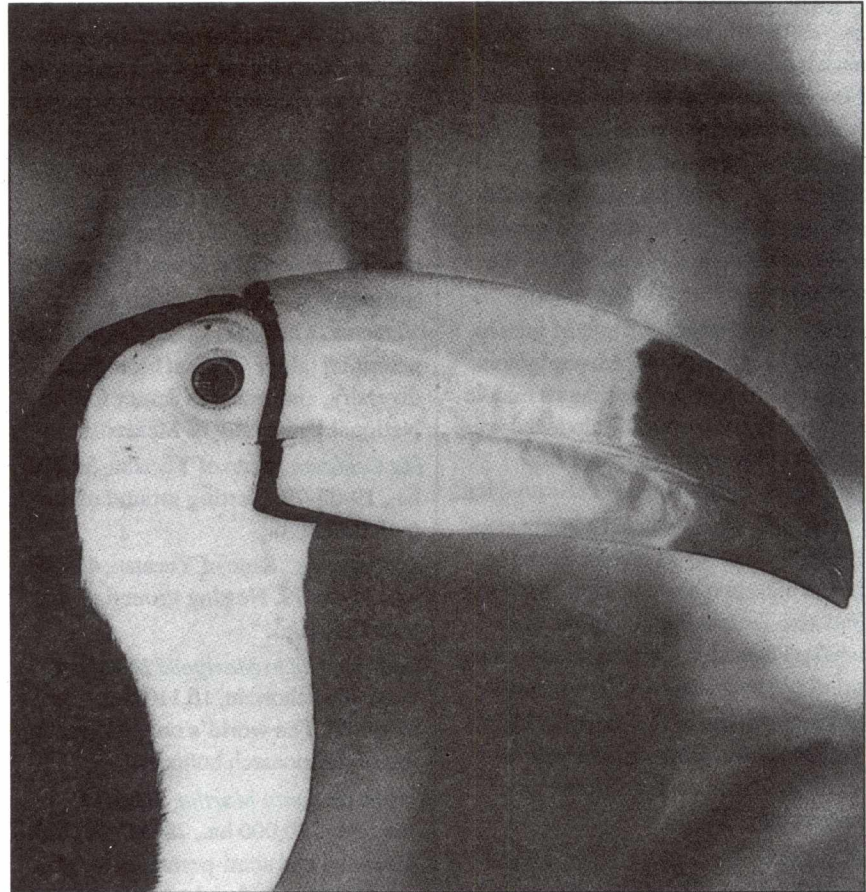
The modern idea of a nature reserve was born in the mid-nineteenth century when a contradiction emerged between the natural balance of ecosystems and the material development of industrialized society, characterized by the intensive and unplanned exploitation of natural resources.

At the turn of the twentieth century, the dominant form of reserve was the national park. National parks were considered enclaves, or protected areas where any form of exploitation was strictly forbidden. This type of reserve was characterized by its recreational function.

Since the second half of the twentieth century, fears of an unprecedented ecological crisis have provoked a worldwide response and heightened international cooperation to tackle ecological problems.

The early seventies marked a crucial stage in global attitudes towards environmental issues with the establishment in 1972 of the United Nations Environment Program (UNEP). In 1974, UNESCO founded The Man and the Biosphere Program, and in 1980, the World Conservation Strategy was set up. Nature reserves spread rapidly, and in 1973, 1,036

Nature reserves



Toucan.

reserves were registered around the world, leaping to 3000 by 1985.

However, the national park, which is the most common form of nature reserve, has been unsuccessful in non-industrialized countries which are characterized by high population growth and incoherent programs of land-usage. Therefore, The Man and the Biosphere program of UNESCO which focuses on the conservation of the biosphere, remains the most promising nature conservation alternative for these nations.¹

¹ Source: *Fauna Silvestre y Areas Naturales Protegidas* Fundación Universo Veintiuno, Mexico, 1988, pp. 71-75.

Mexican nature reserves 1991²

Biosphere reserves

Montes Azules, State of Chiapas, 331,200 ha, 12-01-78. One of main ecosystems of the Mexican wet tropics, and natural habitat of species such as the toucan, the tapir, and the spider monkey.

La Michilía, State of Durango, 20,000 ha., 18-07-79. Characterized by pastures, pine trees and tropical oaks. Inhabited by black bears, wild boar, and white-tailed deer.

² Source: *La Jornada Ecológica*, Year 1, Num. 6, 19th September 1991, pp. 7-8.

Mapimí, State of Durango, 20,000 ha., 19-06-79. An ecosystem which is home to the legendary gopher tortoise. Much scientific research has been carried out on its unique climate.

El Cielo, State of Tamaulipas, 144,530 ha., 15-06-85. Home of 175 species of native and migratory birds. Mesophyllous mountain forests and sub-perennial jungle.

Sian Ka'an, State of Quintana Roo, 528,147 ha., 20-01-86. Middle and low sub-perennial rain forests, mangroves and coastal dunes. Forms part of the second biggest reef in the world.

Sierra de Manantlán, State of Jalisco, 139,577 ha., 23-04-87, Mesophyllous mountain forests, and deciduous middle forests. Migratory birds include the wild turkey. Also home of *Euchlanea Luxurians*, a plant in danger of extinction.

El Vizcaíno, State of Baja California Sur, 2,546,790 ha. 30-11-88. Believed to be the biggest reserve in Latin America, and also the mating site of the grey whale. Vegetation includes xerophyllous, microphyllous and coniferous scrub.

Calakmul, State of Campeche, 723,185 ha., 23-05-89. High, middle and low semi-perennial forests. Home to a variety of wildcats.

El Triunfo, State of Chiapas, 119,177 ha., 12-03-90. Cloud jungles, made up of 12 microclimates. Natural habitat of the quetzal and the peacock.

Pantanos de Centla, State of Tabasco, 290,037 ha., Important site for hydrological cycles and a protected area for the jaguar.

Special biosphere reserves

Isla de Guadalupe State of Baja California, 25,000 ha., 27-12-22. A sanctuary for sea mammals. Vegetation of mixed cacti and pine forest.

Cajón del Diablo, State of Sonora, 12-09-37. Xerophyllous vegetation. Home to wild boar, quail, white and purple-winged doves.

Isla Contoy, State of Quintana Roo, 176 ha., 08-02-61. A sanctuary for

over 60 species of seabird. High and middle perennial jungle.

Isla Tiburón, State of Sonora, 120,800 ha., 15-03-63. Natural habitat of the bighorn sheep; the mule deer and the osprey.

Isla Rasa, State of Baja California, 6.9 ha. 30-05-64. Nesting site of the brown gull and the elegant tern accounting for 90% of the species. Vegetation is mostly cacti.

Islas del Golfo de California, State of Sonora, State of Baja California, 150,000 ha, 02-08-78. Home to marine reptiles and seabirds. Sparsely vegetated.

Volcán de San Martín, State of Veracruz, 1,500,000 ha. 20-03-79. High perennial jungle of great biological diversity, and research center for the National University of Mexico.

Ría Celestum, State of Yucatan, 59,130 ha., 19-05-79. Nesting ground of the pink flamingo.

Ría Lagartos, State of Yucatan, 47,840 ha., 26-06-79. Nesting ground of the pink flamingo.

Santuario de la Mariposa Monarca, State of Michoacán, 16,110 ha., 09-04-80. The world's only hibernating site of the monarch butterfly.

Sierra de Santa Martha, State of Veracruz, 20,000 ha., 28-04-80. High perennial and semi-perennial jungle, natural habitat of owls, parakeets and raccoons.

Cascadas de Agua Azul, State of Chiapas, 2,580 ha., 29-04-80. Perennial jungle. Habitat of many bird species, including the red macaw.

Arrecifes de Cozumel, State of Quintana Roo. 450 ha., 11-06-80. A natural submarine garden teeming with magnificently colored fish.

Selva del Ocote, State of Chiapas, 48,140 ha., 20-10-82. Perennial jungle. Home to many endangered species, including the tapir, the jaguar, the king vulture and the harpy eagle.

National parks

Izta-Popo, State of Mexico, 25,679 ha., 08-11-35. Pine forests with a limited

wildlife, including the volcano rabbit, the white-tailed deer and the crow.

Nevado de Toluca, State of Mexico, 51,000 ha., 25-01-36. Source of the River Lerma-Santiago hydrological system.

Cerro de Garnica, State of Michoacán, 968 ha., 05-09-36. Pine and fir forests. Home to the gray fox, the ring-tailed cat, and the white-tailed deer.

Nevado de Colima, Colima, 22,200 ha., 05-09-36 and 06-12-40. Pine and fir forests, nesting site of falcons, woodpeckers and hummingbirds.

Los Mármoles, Hidalgo State, 23,150 ha., 08-09-36. Madrone, juniper, walnut and pine forests. Inhabited by small wildcats and birds of prey.

El Potosí, State of San Luis Potosí, 2,000 ha., 15-09-36. Semi-tropical forests inhabited by coyotes, skunks, Mexican opossums and falcons.

Insurgente Miguel Hidalgo y Costilla (La Marquesa), State of Mexico, 1,750 ha., 18-09-36. Site of the Mexican Institute of Nuclear Research.

El Gogorrón, State of San Luis Potosí, 25,000 ha., 22-09-36. Pine forests and hillside cacti. Wildlife includes roadrunners, foxes, hares, and doves.

Cumbres del Ajusco, Federal District of Mexico, 920 ha., 23-09-36. Pine and fir forests, inhabited by small fauna, squirrels, volcano rats, rabbits, falcons and the blue grosbeak.

Lagunas de Zempoala, State of Morelos, 4,669 ha., 27-11-36. Studies indicate a number of lagoons are quickly drying.

Pico de Orizaba, State of Veracruz, 19,750 ha., 07-01-37. The highest peak in the Republic.

El Tepeyac, Federal District of Mexico, 302 ha., 18-02-37. An area reforested with eucalyptus.

Zoquiapan y Anexas, State of Mexico, 19,418 ha., 13-03-37. Pine and tropical oak forests with typical wildlife.

Lagunas de Chacacua, State of Oaxaca, 14,418 ha., 09-07-37. An estuary of unique beauty, and a lizard breeding ground.

Molino de Flores Netzahualcóyotl, State of Mexico, 55 ha., 05-11-37. Giant bald cypresses, pepper trees, and Mexican ash trees. Mainly doves and reptiles.

Benito Juárez, State of Oaxaca, 2,737 ha., 30-12-37. A reservoir site, supplying water to the city of Oaxaca.

Cañon de Río Blanco, State of Veracruz, 55,690 ha., 22-02-38. Subtropical forests, natural habitat of weasels, iguanas and other species.

Los Remedios, State of Mexico, 400 ha., 15-04-38. Eucalyptus forest.

Cerro de la Estrella, Federal District of Mexico, 1,100 ha., 24-08-38. Indigenous fauna and flora have been reduced by 85%.

El Sabinal, State of Nuevo León, 8 ha., 25-08-38. The place takes its name from the abundance of "sabinas" or juniper trees.

La Malinche, State of Puebla, 45,700 ha., 06-10-38. Pine and fir forests with typical wildlife.

Insurgente José Ma. Morelos y Pavón, State of Michoacán, 1,813 ha., 22-02-39. Cypress, firs and conifers and a variety of wildlife.

Sacramonte, State of Mexico, 45 ha., 26-08-39. Cedar forest. Wildlife includes ring-tailed cats, blue grosbeaks and skunks.

Cumbres de Majalca, State of Chihuahua, 4,772 ha., 01-10-39. Pine and tropical oaks abound, the natural habitat of the black bear, the tinamou, the woodpecker and the falcon.

Cumbres de Monterrey, State of Nuevo León, 246,500 ha., 24-11-39. Pines and tropical oaks abound. This is the site of the famous Cola de Caballo Waterfalls.

Los Novillos, State of Coahuila, 42 ha., 18-06-40. An oasis surrounded by walnut, tropical oak, willow, and aspen. Wildlife includes tortoises, hares, coyotes and other desert species.

Pico de Tancitaro, State of Michoacán, 29,316 ha., 27-06-40. Tropical oak, fir and pine abound. Typical coniferous forest wildlife.

Bosencheve, State of Michoacán, 15,000 ha., 01-10-40. Pine and fir forests, home to armadillos, and a stop-over for many migratory bird species.

Lago de Camécuaro, State of Michoacán, 9 ha., 08-03-41. Juniper and giant bald cypress trees grow on its banks.

Desierto del Carmen, State of Mexico, 549 ha., 01-10-42. Temperate forests which are home to many birds of prey and rodents.

Rayón, State of Michoacán, 34 ha., 29-10-52. Pine forests, inhabited by white-tailed deer, armadillos and ring-tailed cats.

El Tepozteco, State of Morelos, 24,000 ha., 22-01-57. Forests of pine, tropical oak and fir. Wildlife includes the gray fox, squirrels and other small mammals.

Lagunas de Montebello, State of Chiapas, 6,022 ha., 16-12-59. Its 52 lagoons are part of an ecosystem of mesophyllous forest, quetzals, tayras, margays, and other animals.

Constitución de 1857, State of Baja California, 5,009 ha., 27-04-62. Coniferous forests, scrub land and cacti. Home to the mule deer, the coyote and other species.

El Veladero, State of Guerrero, 3,159 ha., 17-06-80. Low deciduous jungle. Wildlife includes songbirds and reptiles.

Cañon del Sumidero, State of Chiapas, 21,789 ha., 08-12-80. Middle and low jungle, the natural habitat of the anteater.

Isla Isabel, State of Nayarit, 194 ha., 08-12-80. Sparsely vegetated, but nesting site of the blue-footed and brown boobies, the frigatebird, and the pelican.

Cascadas de Basaseachic, State of Chihuahua, 5,802 ha., 02-02-81. The waterfall measures 311 m in height. Pine and tropical oak forests. Wildlife includes the puma and the white-tailed deer.

Tulum, State of Quintana Roo, 664 ha., 23-04-81. Middle jungle, with coastal dunes. Natural habitat of species of hot and humid climates.

Tula, State of Hidalgo, 99 ha., 27-05-81. Semi-desert, inhabited by



Macaws overflying the shores of the Usumacinta River.

many species of snake and small reptiles and rodents.

Palenque, State of Chiapas, 1,771 ha., 20-06-81. High perennial jungle, inhabited by great curassows, parrots, ocelots, spider and howler monkeys.

El Cimatorio, State of Querétaro, 2,447 ha., 21-06-82. Semi-arid xerophyllous scrub land.

El Chico, State of Hidalgo, 2,739 ha., 13-09-82. A forested region. Indigenous wildlife is in danger of extinction.

Dzibilchaltun, State of Yucatan, 539 ha., 14-04-87. An archaeological zone of the classic Mayan period.

Protected aquatic wildlife zones

Chichinautzin, State of Morelos, 37,302 ha., 30-11-88. Local inhabitants recently protested the construction of an express railroad through this ecological corridor.

Protected natural resource zones

El Pinacate, State of Sonora, 28,600 ha. Mainly xerophyllous scrub land. Home of the bighorn sheep, the puma, the pronghorn antelope, and the gopher tortoise. 