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Man's footprint on ecosystem of Earth 'too heavy to be sustained'

A WWF study says that we have been living beyond the environment's means for two decades

By Lewis Smith

THE Earth's natural resources are being used 25 per cent faster than the planet can renew them, analysis by WWF indicates.

Measurements of crop yields, carbon-dioxide emissions, fishing and the use of forests suggest that Mankind's ecological footprint is too big to be sustained.

Since 1961 it has more than tripled in size and, for the past 20 years, mankind has been living beyond its ecological means, a WWF report said. It is the equivalent, in banking terms, of living off capital rather than interest.

Using United Nations projections of the worldwide growth of the human population and economies, the report predicts that by the middle of the century "large-scale ecosystem collapse" is likely.

The world's average footprint is calculated to be 2.2 hectares per capita but only 1.8 hectares of each person's consumption can be regenerated by the planet each year.

Carbon-dioxide emissions are the biggest single factor within the footprint, accounting for up to 48 per cent of man's impact on the globe, according to the WWF *Living Planet Report*.

The speed at which resources are being used has had the effect of destroying biodiversity at an unprecedented rate.

By tracking the fortunes of 1,313 species of vertebrates from around the world, the report indicated that there had been a 30 per cent slump in wildlife since 1970.

Tropical species, including mammals, reptiles and birds, were the most badly hit of the 695 land-based animals monitored. They declined by an average of 55 per cent, while the populations of temperate creatures have, overall, remained stable since 1970.

Marine species declined by an average of 25 per cent in the Pacific, Atlantic, Indian and Southern Oceans. The index monitored 274 species and there was particular concern about the loss of cod, tuna and turtles.

Late last century the land habitat that vanished fastest were tropical grassland, flooded grasslands and savannas, and tropical dry forests. They were replaced with either crops or grazing land for livestock.

Mangroves were highlighted as the most endangered habitat, with more than a third being lost to developments between 1990 and 2000, twice the rate at which tropical forests are being destroyed.

Jonathan Loh, of the Zoological Society of London, one of the authors of the report, said: “The Living Planet Index is a stark indication of the rapid and ongoing loss of biodiversity worldwide.

“Populations of species in terrestrial, marine and freshwater ecosystems have declined by more than 30 per cent since 1970, a rate that is unprecedented in human history. In the tropics the declines are even more dramatic, as natural resources are being intensively exploited for human use.”

His colleague, Ben Collen, added: “It makes depressing reading. It’s another stark indication that we are losing biodiversity at an unprecedented rate. But one of the messages is we do have a choice at this point. We can moderate our consumption and become a less throwaway society.”

The ecological footprint is designed to measure the extent of human demand on the land and seas, and the report concludes that, for the past two decades, people have been turning resources into waste faster than the planet can turn waste back into plants and creatures. “Humanity is no longer living off Nature’s interest but drawing down its capital,” the authors said.

“This growing pressure on ecosystems is causing habitat destruction or degredation and permanent loss of productivity, threatening both biodiversity and human wellbeing.”

They called for radical changes in human consumption, and said that a 50 per cent reduction in carbon-dioxide emissions and fish catches would make it possible to close the gap between resource use and replacement by 2080.

The report added: “Moving towards sustainability depends on significant action now. Population size changes slowly, and human-made capital — homes, cars, roads, factories or power plants — can last for many decades.

“Given the slow response of many biological systems, there is likely to be a considerable time lag before ecosystems benefit significantly from people’s positive actions.

“We share the Earth with five to ten million species or more. By choosing how much of the planet’s biocapacity we appropriate, we determine how much is left for their use.

“To maintain biodiversity it is essential that a part of the biospehere’s productive capacity is reserved for the survival of other species.”

James Leape, WWF’s director-general said: “We are using the planet’s resources faster than they can be renewed. We need to stop. We must balance our consumption with the natural world’s capacity to regenerate and absorb our wastes. If we do not, we risk irreversible damage. As countries improve the wellbeing of their people they are bypassing the goal of sustainability and going into what we call ‘overshoot’ — using far more resources than the planet can sustain.”

The calculations for the report are based on figures up to 2003. In 2003 the global ecological footprint was calculated to total 14.1 hectares. Only 11.2 hectares of the world's productive surface was restored to previous levels.

Among the animals to have suffered the largest declines is the saiga antelope, whose numbers have dropped by 90 per cent in the past decade because of hunting in Mongolia.

Wildebeest have declined by 20 per cent in the past 30 years because of encroachments on their migration routes by farmers. Polar bears have suffered population falls of up to 30 per cent, mainly because of the loss of sea ice, which is attributed to global warming.

In Britain, the corncrake was one of the animals monitored. From 1970 to 1993 there was a fall from 3,250 calling males to 478, a reduction of 80 per cent. But since then conservation programmes have halted the decline and helped the species to recover slightly.

In the marine environment, the creatures that are among the worst affected include the endangered fin whale, the jackass penguin and the dugong.