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Two-thirds of world's resources 'used up'

Tim Radford, science editor
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The human race is living beyond its means. A report backed by 1,360 scientists from 95 countries - some of them world leaders in their fields - today warns that the almost two-thirds of the natural machinery that supports life on Earth is being degraded by human pressure.

The study contains what its authors call "a stark warning" for the entire world. The wetlands, forests, savannahs, estuaries, coastal fisheries and other habitats that recycle air, water and nutrients for all living creatures are being irretrievably damaged. In effect, one species is now a hazard to the other 10 million or so on the planet, and to itself.

"Human activity is putting such a strain on the natural functions of Earth that the ability of the planet's ecosystems to sustain future generations can no longer be taken for granted," it says.

The report, prepared in Washington under the supervision of a board chaired by Robert Watson, the British-born chief scientist at the World Bank and a former scientific adviser to the White House, will be launched today at the Royal Society in London. It warns that:

- Because of human demand for food, fresh water, timber, fibre and fuel, more land has been claimed for agriculture in the last 60 years than in the 18th and 19th centuries combined.
- An estimated 24% of the Earth's land surface is now cultivated.
- Water withdrawals from lakes and rivers has doubled in the last 40 years. Humans now use between 40% and 50% of all available freshwater running off the land.
- At least a quarter of all fish stocks are overharvested. In some areas, the catch is now less than a hundredth of that before industrial fishing.

- Since 1980, about 35% of mangroves have been lost, 20% of the world's coral reefs have been destroyed and another 20% badly degraded.
- Deforestation and other changes could increase the risks of malaria and cholera, and open the way for new and so far unknown disease to emerge.

In 1997, a team of biologists and economists tried to put a value on the "business services" provided by nature - the free pollination of crops, the air conditioning provided by wild plants, the recycling of nutrients by the oceans. They came up with an estimate of \$33 trillion, almost twice the global gross national product for that year. But after what today's report, Millennium Ecosystem Assessment, calls "an unprecedented period of spending Earth's natural bounty" it was time to check the accounts.

"That is what this assessment has done, and it is a sobering statement with much more red than black on the balance sheet," the scientists warn. "In many cases, it is literally a matter of living on borrowed time. By using up supplies of fresh groundwater faster than they can be recharged, for example, we are depleting assets at the expense of our children."

Flow from rivers has been reduced dramatically. For parts of the year, the Yellow River in China, the Nile in Africa and the Colorado in North America dry up before they reach the ocean. An estimated 90% of the total weight of the ocean's large predators - tuna, swordfish and sharks - has disappeared in recent years. An estimated 12% of bird species, 25% of mammals and more than 30% of all amphibians are threatened with extinction within the next century. Some of them are threatened by invaders.

The Baltic Sea is now home to 100 creatures from other parts of the world, a third of them native to the Great Lakes of America. Conversely, a third of the 170 alien species in the Great Lakes are originally from the Baltic.

Invaders can make dramatic changes: the arrival of the American comb jellyfish in the Black Sea led to the destruction of 26 commercially important stocks of fish. Global warming and climate change, could make it increasingly difficult for surviving species to adapt.

A growing proportion of the world lives in cities, exploiting advanced technology. But nature, the scientists warn, is not something to be enjoyed at the weekend. Conservation of natural spaces is not just a luxury.

"These are dangerous illusions that ignore the vast benefits of nature to the lives of 6 billion people on the planet. We may have distanced ourselves from nature, but we rely completely on the services it delivers."

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