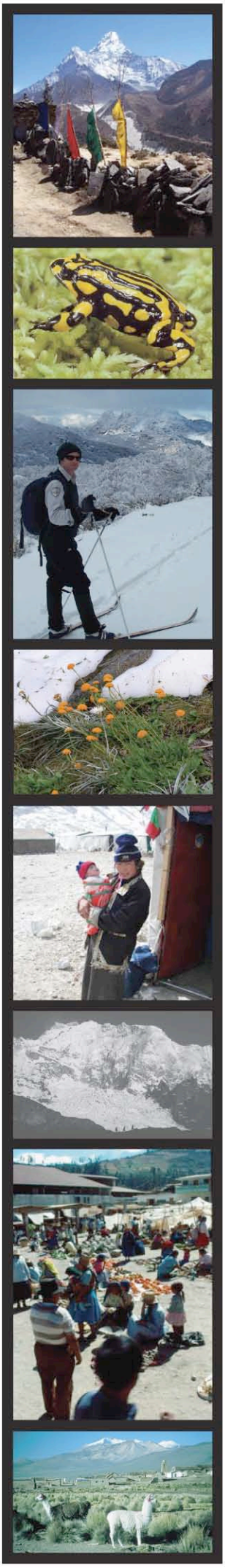

Mountain Connectivity Conservation Management

IUCN/WCPA Mountain Biome Workshop - Ecuador 2006

IUCN The World Conservation Union

The survival of species

Quick facts:

- Species extinctions occur naturally, with as few as 2-4% of the species that have ever lived surviving today.
- The rapid loss of species that we are witnessing today is estimated by some experts to be between 100 and 1,000, but by others to be as high as 11,000, times higher than the expected natural extinction rate.
- Major threats to species survival include: habitat loss and fragmentation; over-exploitation; pollution; invasive species; and, global climate change.
- The monetary value of goods and services provided by natural ecosystems is estimated to amount to some 33 trillion dollars per year – nearly twice the global production resulting from human activities.
- Since 1500 AD, 844 extinctions have been recorded.
- Between 10,000 and 20,000 plant species are used in medicines worldwide.
- Human induced extinctions can be stopped but it takes huge efforts at all levels. Restoration of habitats and ecosystems, including establishment of protected areas, is an important part.

A natural and unnatural process

The planet's geological processes continue, barely discernible over a single human life-time. With geological change come changes in living things: species, populations, and whole lineages disappear, and new ones emerge in a natural process.

According to the fossil record as few as 2-4% of the species that have ever lived survive today. The remainder are extinct, the vast majority having disappeared long before humans.

Extinctions and humans

Extinctions caused by humans are generally considered to be a modern phenomenon. However, some researchers suggest that humanity's first significant contribution to the rate of global extinction may have occurred during the past 100,000 years, when North and South America and Australia lost most of their "megafauna" - mammals greater than 44 kg.

In the Americas, almost 80% of the megafauna became extinct. Extraordinary creatures, such as sabre-toothed cats, mammoths, and giant ground-sloths, all disappeared some time between 11,000 and 13,000 years ago,

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coinciding, according to some, with the dates of the first evidence of a human presence there.

The "Sixth Wave"

The rapid loss of species that we are witnessing today is estimated by some experts to be between 100 and 1,000 times higher than the "background" or expected natural extinction rate (this is a highly conservative estimate. Unlike the mass-extinction events of geological history, the current extinction phenomenon is one for which a single species - ours - appears to be almost wholly responsible. Such a deteriorating situation is being referred to as "the sixth extinction crisis", after the five known extinction waves in pre-historic times.

The key threats

Almost all the factors that have led to the extinction of species in the modern era continue to operate, many with ever-increasing intensity. While these factors vary in intensity and relative importance certain common threads emerge.

Major threats to ecosystems and biological diversity (biodiversity) are:

- Habitat loss and fragmentation (making the maintenance of habitat connectivity very important).
- Over-exploitation.
- Pollution.
- Invasive species (i.e. species that are not native to an area that have been deliberately or accidentally introduced).
- Global climate change.

Why should we care?

Living organisms keep the planet habitable. Plants and bacteria carry out photosynthesis, which produces oxygen. Trees absorb carbon dioxide, which can help in the fight against global warming. Many plants and animals are utilized by humans but not always in a sustainable way.

The monetary value of goods and services provided by natural ecosystems is estimated to amount to some 33 trillion dollars per year – nearly twice the global production resulting from human activities.

The diversity of nature helps meet the recreational, emotional, cultural, spiritual and aesthetic needs of people.

Can extinctions be stopped?

It takes huge efforts at all levels, from individual to global, to halt species extinction, a constant input and analysis of data on species, their habitats and threats. The tools in the conservation arsenal include:

- Effective management and restoration of habitats and ecosystems (including establishment of protected areas and protected area networks and connectivity conservation areas).
- Enforcement of key international environment and conservation agreements.
- Creating incentives and finance for conservation.
- Assessment of biodiversity and related social and economic factors.
- Captive breeding and reintroduction, including seed banks.
- Conservation information management and communication.
- Training and technical capacity-building.

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