

## Habitat Change

Written by

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### Ecosystems and Habitat Change

The local environmental conditions where plant and animal species live are changing due to various human activities, such as land use change and the physical modification of water resources<sup>1</sup>. Today, the loss of habitat areas through clearing or degradation is the primary cause of species decline<sup>2</sup>. Ecosystems are what sustain human life on this planet. Humans are dependent on the natural environment for the provision of food, quality of air, drinking water, building material, clothes, fuel and medicine. Rapid urban development and the consequential exploitation of natural resources, however, are having deleterious impacts on plant and animal habitats. Scientists believe that species are disappearing at the rate of 150 to 200 a day – between 50 and 100 times the natural rate<sup>3</sup>.

It has been referred to be the greatest extinction crisis since the dinosaurs disappeared 65 million years ago<sup>4</sup>.

Two major pressures exert the most impact on habitat change: threats to coastal and marine ecosystems – which include destructive fishing, coral bleaching and the destruction of coral reefs; and deforestation.

Threats to Coastal and Marine Ecosystems. The ASEAN Member States' coastal and marine ecosystems, mostly belonging to the Coral Triangle, are at immediate risk from a host of factors. Along with its various goods and services, these ecosystems confront threats from land- and sea-based sources, unplanned development activities, fishing and aquaculture, oil and gas exploration, and hazards brought about by oil spills and chemical leakages in the seas and oceans. Additionally, the impact of climate change and rising sea levels are significantly more alarming<sup>5</sup>.

Altogether, these factors adversely affect food security, employment opportunities and standard of living of the ASEAN region's over 120 million coastal population that depend on fishing, nature tourism and other coastal and marine resources for survival. Fisheries exports and coastal tourism revenues, each providing some USD3 billion in annual foreign exchange income for the region, are likewise at risk<sup>6</sup>.

Destructive means of fishing, as a case in point, has threatened 64 per cent of Southeast Asia's coral reefs. These practices have endangered two-thirds of the reefs of the Philippines, Malaysia and Taiwan, and one-half of Indonesia's.

Sedimentation and pollution caused by coastal development and changes in land use have also threatened 37 per cent of the region's total reefs, according to an experts' workshop report in Indonesia in June 2004.

The damage rate of coral reefs in Indonesia has reached 40 per cent in 2006, suspected to be mainly caused by inappropriate fish-catching methods – such as dynamite- and cyanide-fishing, muro ami, and the use of unsuitable fishing nets; coral reefs mining; and sedimentation. Water sports and tourism activities also contribute to reef deterioration from boat anchors, harmful disposal activities, and walking on the reef especially by marine tourists<sup>7</sup>.

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Seagrass beds are subjected to threats from bottom trawling and extensive coastline destruction and modification. In the Philippines alone, it is estimated that between 30 to 40 per cent of seagrass have been lost over the last 50 years

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. About ten per cent or 3,000 square kilometers of seagrass in Indonesia have been damaged by sand-dredging, the use of bag nets in trawling, and pollution

. In Malaysia, the loss and degradation of coral reefs and mangrove areas are caused mainly by land development, human encroachment and overfishing. While in Thailand, many coral reef areas have become vulnerable to ecotourism activities. Seagrass beds are degraded mainly by human impact from fisheries, illegal fishing and sedimentation from coastal construction.

The Philippines' marine and coastal resources were assessed in 2005 along the following indicators: mangrove cover, per cent of coral reefs in excellent condition, seagrass cover, and fisheries productivity from municipal waters. Findings indicate that mangrove cover is increasing, but coral reef cover, seagrass areas and fisheries yields are decreasing

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. Five major threats were identified: chemical pollution and eutrophication, fisheries operations, habitat alteration, invasive alien species (i.e., particularly from crown-of-thorns infestations), and climate change. Primary threats are habitat alteration and loss due to destructive resource use, development activities and human population pressure. Specific threats include mining, logging, hazardous and solid waste disposal, pollution, and land conversion for industrial, agricultural and urban development

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, as well as coastal erosion and storm surges associated with climate change.

The Philippine coral reefs are considered to be one of the highly threatened reef areas in the world

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– down from five per cent to three per cent, to less than one

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Poaching from foreign fishing operations is also adding to the threats to marine and coastal ecosystems. Particularly targeted are marine turtles which command high prices as a delicacy in some foreign markets

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Deforestation. The growing population's dependence on timber, fuel wood and other forest products, as well the conversion of forests into agricultural and industrial lands, are taking their toll on the world's forests

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Scientists say that of all major tropical regions, Southeast Asia has the highest relative rate of deforestation. They project that the region could lose 75 per cent of its forests by 2100

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Already, Southeast Asian countries have lost a total of 555,587 square kilometers of forests from 1980 to 2007 . By 2007, the forest cover of the entire ASEAN region was recorded at 43 per cent, equivalent to a total area of 1,904,593 square kilometers. This area comprises a mere five per cent of the world's total. Southeast Asia's forest area declined at an average rate of 20,578 square kilometers annually since 1980 to 2007

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. What remains today are over-logged and degraded forests.

Unabated conversion of natural habitats for other uses is a major driver of biodiversity loss in the region. Massive deforestation was witnessed in the 1800s when the countries pursued agricultural expansion to produce more rice and export crops such as coconut, rubber and oil palm

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Today, vast areas of forests have been converted to oil palm plantations, especially in Indonesia and Malaysia.

The most significant impact of deforestation is the degradation or loss of habitats for species, resulting in massive species declines and extinction . Natural forests are innate repositories of biodiversity resources – from genetic to species levels. Its destruction or conversion for other land uses removes the condition by which the diversity and stability of the ecosystem are maintained. Thus, replacing natural forests with plantation forests do not warrant the return of species and its natural habitats which have been eradicated in the process of conversion.

## Endnotes

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