



Distribution Range and Pattern of a Species are as much an Expression of Biodiversity

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Received Date: 01 November, 2021; Accepted Date: 16 November, 2021;

Published Date: 24 November, 2021

Description

While the prevailing focus on the status of threatened species is important and indeed indicates high-priority biodiversity concerns, it does not present the full picture of global biodiversity loss. Equally concerning, but less well-documented, is the steady decline of many “common” and “widespread” species. Abundance, distribution range and pattern of a species are as much an expression of biodiversity (on a genetic level) as the raw number of species itself in a given locality. A great number of species not yet rare enough to qualify for the red list are affected by this process. In Europe, for example, while 8% of the bird species are globally threatened, another 38% are undergoing steady decline, mainly due to changing land-use patterns, especially in relation to agriculture.

Biodiversity Management

This often overlooked dimension of biodiversity decline, which might be as serious as the increasing number of threatened species, is particularly relevant when looking at local and regional biodiversity issues in connection with land-use activities that involve substantial, but relatively contained, transformation of habitats (as in the case of limestone mining for cement and aggregate production). During the planning phase, the most important biodiversity issue to be examined is the likelihood for the project to have adverse impacts on high-value biodiversity elements (species, habitats, ecosystem services, traditional uses). If the project is in an area where Holcim has no operating experience, there is a risk that significant biodiversity values in the area of interest may not be recognised early enough. As in some cases there might be little available information in the public domain, even desk-based early assessments may not always reveal the presence of important biodiversity issues, and the confidential and rapid timeline of the planning phase studies does not allow for extensive fieldwork to rectify this.

Among the potential social and environmental liabilities, biodiversity should be included as part of these due diligence investigations in the same manner as described here for the risk assessment during the planning of a new development. The presence of an endangered species, special rehabilitation requirements, an obvious gap between existing closure practice and Holcim standards or a pending civil suit involving biodiversity could all negatively affect economic viability. How this should be done, and to what extent, will depend on the nature of such a takeover.

The issues of biodiversity raise many challenges. The unthinking rush, which some are engaged in, to plant large quantities of the same type of tree all in the same area is not the solution. This is only going

to create other ecological problems and does not address the issues of biodiversity.

Ever more people produce ever more waste and pollution. As populations increase, the disposal of waste from households, agriculture and industry, becomes an increasingly serious issue. Our oceans are becoming choked with plastic waste which is killing millions of animals, from sea turtles to whales. The Ellen MacArthur foundation estimates that by 2050, there will be more plastic than fish in the sea. As well as affecting the lives of humans, noise, light and chemical pollution all damage the health of wild species.

Ever more people mean ever more travel. Human travel across the world has a very large emissions footprint but it has also allowed the spread of invasive species, both accidental and intentional. As a consequence of the introduction of non-native species to some areas, such as rabbits and cats in Australia, goats on St. Helena, and American mink in Great Britain, we have put many vulnerable ecosystems at risk, threatening native species and diminishing biodiversity.

Forestry

Globally, forest cover has declined over many millennia, but extensive regions still remain mostly forested, not least in northern Eurasia and North America. In the latter areas, the proportion of the landscape covered by forest is currently stable or even expanding [1]. At the same time, however, impacts of large-scale forest management and other industrial activities have transformed forest ecosystems from being governed mostly by natural processes to being under strong human influence [2]. This transition has had far-reaching consequences for forest structure and dynamics, and it has been accompanied by a significant loss of forest biodiversity at all levels. Genetic diversity, species richness and ecosystem variability have all decreased [3].

Ever more people need ever more space. Damaging human activity continues to encroach on natural environments, thereby destroying the habitats of countless species. As our numbers raise, cities, infrastructure and cropland (see 'Agricultural Intensification' below) are growing and merging into each other, fragmenting the remaining habitat and leaving isolated “islands” of natural populations of plants and animals too small to survive. According to IPBES, only one quarter of land areas and one third of oceans remain relatively undamaged by human activity.

Biodiversity, the diversity of life on Earth, is essential to the healthy functioning of ecosystems. Habitat loss and overexploitation, driven by our rapid population growth and unsustainable consumption patterns, are the primary causes of biodiversity loss which is now happening up to ten thousand times faster than for millions of years before.

The biodiversity of forests varies considerably according to factors such as forest type, geography, climate and soils in addition to human use most forest habitats in temperate regions support relatively few animal and plant species and species that tend to have large geographical distributions, while the montane forests of Africa, South America and Southeast Asia and lowland forests of Australia, coastal Brazil, the Caribbean islands, Central America and insular Southeast Asia have many species with small geographical distributions. Areas with dense human populations and intense agricultural land use, such

as Europe, parts of Bangladesh, China, India and North America, are less intact in terms of their biodiversity. Northern Africa, southern Australia, coastal Brazil, Madagascar and South Africa, are also identified as areas with striking losses in biodiversity intactness

Associated biodiversity can be damaging or beneficial. The beneficial associated biodiversity include for instance wild pollinators such as wild bees and syrphid flies that pollinate crops and natural enemies and antagonists to pests and pathogens. Beneficial associated biodiversity occurs abundantly in crop fields and provide multiple ecosystem services such as pest control, nutrient cycling and pollination that support crop production

The control of damaging associated biodiversity is one of the great agricultural challenges that farmers face. On monoculture farms, the approach is generally to suppress damaging associated diversity using a suite of biologically destructive pesticides, mechanized tools and transgenic engineering techniques, then to rotate crops. Although some poly culture farmers use the same techniques, they also employ

integrated pest management strategies as well as more labor-intensive strategies, but generally less dependent on capital, biotechnology, and energy [4,5].

References

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