

Bratislava



Ekaterinberg



Bath



Athens



Patterns of urban growth and decline vary considerably. Competition for land use leads to expansion into less favourable areas, reclamation of additional land, and loss of heritage. Settlement and development may be intensified either by building upwards, requiring sound foundations, or by subsurface development requiring specialist construction techniques. Growing cities, constrained by their surroundings, inevitably suffer transport problems. Some cities, or parts of cities, outlive their purpose. Declining industry and commerce may cause dereliction of land and unemployment unless investment leads to regeneration.

Urban areas interact strongly with their surroundings. Large amounts of food and water, as well as natural resources for industry and energy, are required. Large amounts of goods are produced and distributed. These, and people, must be transported within and between centres. But daily life, industry and transportation produce emissions that can pollute the air, soils and water in the city and nearby. Heat and light can significantly disturb habitats and alter the local microclimate. Ground occupied by buildings and paved areas may severely reduce green space and, therefore, biodiversity. If natural or man made hazards occur, urban population concentrations significantly increase numbers of people and amounts of property at risk. All urban centres rely to a greater or lesser, but usually increasing, extent on imported resources. This environmental burden may fall on other places. The so-called "environmental footprint" of urban areas in development countries is extensive and falls in significant measure on developing countries. Worldwide the rate of urbanisation is increasing.

Characteristics of towns and cities reflect their origins and histories. Most were established for one or more of several reasons: as sea, lake or river ports; at crossing points such as passes or fords; around defensive positions; as market centres for agricultural areas; as administrative centres; or for exploitation of resources such as minerals. Ancient or historic centres may have strong tourist potential if adequately linked to transport networks and provided with good facilities, but the cultural and heritage value of old buildings and the archaeological legacy can be damaged by development. Industrial cities are sources of employment and wealth but also sources of contamination and pollution if not adequately controlled.

Effects of recent industry on the environment can be readily monitored or controlled but past effects may have left forgotten ground problems. New developments can provide opportunities for sound planning of land use and more sustainable development but only if there are adequate controls. In areas where urbanisation happens quickly because of inward migration, uncontrolled development, without adequate infrastructure, can lead to problems such as pollution and building in potentially hazardous areas.

LOCATION

Urban environments depend, to a great extent, on location. Many factors influence conditions: the nature of the land (geology, soils), atmosphere, surface and underground water, distance from the sea, natural and introduced biological communities, the status and customs of people, and governance, and local land uses.

Many people think of ecosystems as natural communities without human interference. In most places, that is a misconception. Land management or accidental effects of human actions have strong influences. All activities have environmental consequences and all environmental processes impinge to a greater or lesser extent on our activities. People and their constructs are part of the ecosystem, not separate from it. Urban areas are extreme examples of systems influenced by human activities. Proper consideration of social, economical and environmental factors is needed for sound, sustainable urban management.

Climate plays an important part. Arctic cities experience problems of frost damage, melting and subsidence due to heat from buildings, and spring melting causes flooding and landslides. Heavy rainfall triggers flooding, erosion, slope instability or subsidence may be triggered. Loss of vegetation in semi-arid areas leads to soil erosion and gully formation. Seasonal climates have varying conditions from summer to winter, or wet season to dry season, and different problems at different times of the year. Climate, of course, has a strong influence on organisms in both natural and managed ecosystems.

Local topography strongly influence land use. Uplands have potential hazards from unstable slopes (landslides, mudflows, avalanches, rock fall), especially if located in a seismically active or volcanic zones, or from flash floods. Floodplains and coastal or delta plains are low lying and liable to flooding from rivers or the sea. These often include sensitive habitats and areas of poor foundation conditions. Hilly lowlands are intermediate in characteristics between upland and plains. Coasts may change due to erosion or accretion. Coast defences and dredging of channels may affect erosion patterns and sediment pathways leading to further coastal change. Reclaiming land from the sea can be associated with liquefaction of sediments during earthquakes. Vulnerable habitats such as reefs, lagoons, and salt marshes may be damaged. Small islands may have problems of intensive land use coupled with rising sea levels.

Most major cities are a patchwork of these patterns and settings.



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Location