



The beaver acts as an ecosystem engineer by felling trees and building dams. The result is a diverse mosaic of blue-green habitats that provides a habitat for many animals and plants and retains water in the landscape.

Dark lines and stripes on rugged and hostile rock faces in the high mountains: this is a real blue-green habitat with the apt name of Tintenstrich (ink line).

The dam completely decouples water from land. The blue-green system has come to a standstill. Many ecosystem functions and ecosystem services can no longer be provided.

Without blue-green infrastructure, cities become heat islands. Quality of life is greatly reduced. The sealing of ground surfaces also increases the risk of flooding.

Drainage systems drain almost one fifth of agricultural land. They have many negative ecological effects. Drainage systems impair the natural water cycle of ecosystems; the drained soils are degraded and release CO<sub>2</sub>.

A network of high-quality ponds of sufficient density is essential for stable amphibian populations. In addition to amphibians, many other species groups such as dragonflies and plants benefit from this element of the ecological infrastructure.

Blue-green infrastructure in cities addresses four important challenges simultaneously: climate adaptation, biodiversity, natural hazard protection and quality of life. There is also better air quality, clean water and recreational areas.

Aquatic habitats "feed" terrestrial habitats – and vice versa. In autumn, a large amount of leaves from the surrounding forest and riverbank vegetation enters the water and feeds hordes of amphipods and other aquatic organisms.

Aquatic insects are not only an important food source for terrestrial species, but are also significant in terms of food quality: Aquatic insects contain substantially more long-chain omega-3 fatty acids than terrestrial insects.

Bodies of water are important hunting grounds for land creatures. For example, bird species such as the kingfisher catch fish in streams, rivers and lakes. The birds' excrement returns the nutrients to the terrestrial ecosystems. Intact food webs control important material flows.

The "Blue-Green Biodiversity" research initiative has uncovered exciting and sometimes surprising interdependencies between water and land. The blue-green system can be seen in the left half of the illustration. The right half shows a landscape in which water and land are clearly separated (Infographic: VISIMON STUDIO)