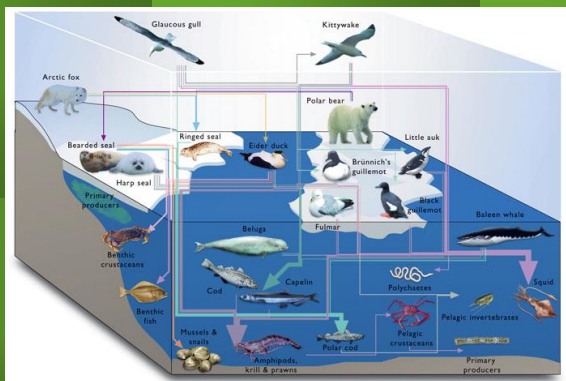


# “To halt the decline of an ecosystem, it is necessary to think like an ecosystem”

The ecosystem is a community of living organisms in conjunction with the non-living

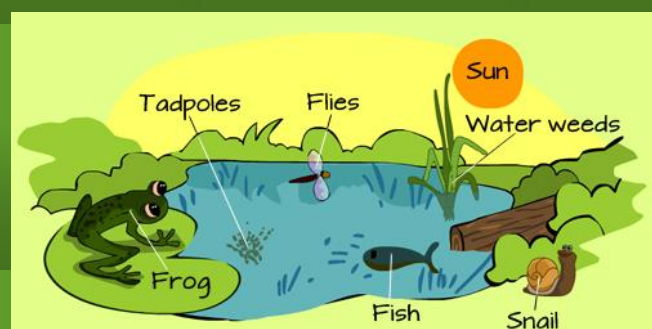
components of their environment (things like air, water and mineral soil), interacting as a system.

These biotic and abiotic components are regarded as linked together through nutrient cycles and energy flows. Energy, water, nitrogen and soil minerals are other essential abiotic



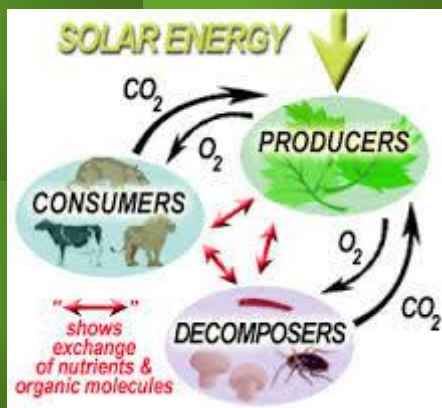
components of an ecosystem. The energy that flows through ecosystems is obtained primarily from the sun. It generally enters the system through photosynthesis, a process that also captures carbon from the atmosphere. By feeding on plants and on one another, animals play an important role in the movement of matter and energy through the system. They also influence the quantity of plant and microbial biomass present. By breaking down dead organic matter, decomposers release carbon back to the atmosphere and facilitate nutrient cycling by converting nutrients stored in dead biomass back to a form that can be readily used

by plants and other microbes. As human populations and per capita consumption grow, so do the resource demands imposed on ecosystems and the impacts of the human ecological footprint. Natural resources are



not invulnerable and infinitely available. The environmental impacts of anthropogenic actions, which are processes or materials derived from human activities, are becoming more apparent—air and water quality are increasingly compromised, oceans are being overfished,

pests and diseases are extending beyond their historical boundaries, and deforestation is exacerbating flooding downstream. It has been reported that approximately 40–50% of Earth's ice-free land surface has been heavily transformed or degraded by anthropogenic activities, 66% of marine fisheries are either overexploited or at their limit, atmospheric CO<sub>2</sub> has increased more than 30% since the advent of industrialization, and nearly 25% of Earth's bird species have gone extinct in the last two thousand years. Society is increasingly becoming aware that ecosystem services are not only limited, but also that they are threatened by human activities. The need to better consider long-term ecosystem health and its role in



enabling human habitation and economic activity is urgent. To help inform decision-makers, many ecosystem services are being assigned economic values, often based on the cost of replacement with anthropogenic alternatives. The ongoing challenge of prescribing economic value to nature, for example through biodiversity banking, is prompting transdisciplinary shifts in how we recognize and manage the environment, social responsibility, business opportunities, and our future as a species. Development impacts ecosystems by changing the landscape. These changes can be reversed or minimized by homeowners and landscapers. Choose native plants whenever possible for landscaping around commercial buildings and private homes. Create natural habitats for small animals with indigenous plants. Grow wildflower gardens to create food and way stations for migrating butterflies and birds.

Dispose of trash and recyclables in appropriate containers through local recycling programs. Eliminate chemical use on lawns and gardens by using natural substitutes. Choose to live in densely populated, existing developments/cities instead of building on virgin land. Purchase land you'd like to protect from development; do this on your own or by creating a land trust

with friends and other concerned parties. The use of fossil fuels and other energy resources have a significant impact on many ecosystems. The mining process impacts local resources near mines, while consumption has a more global impact from carbon dioxide released into the atmosphere. Reduce carbon footprints by integrating renewable energy resources, such as solar or wind power, in new building construction, both commercial and private; retrofit existing buildings. In addition, audit existing structures for energy and resource improvements such as replacing light bulbs or water faucets with more efficient models. Participate in local and national conservation efforts by donating time or money to help maintain national and state parks and reserves. Follow a "leave no trace" policy when enjoying natural areas. Take pictures of interesting items when hiking or enjoying the outdoors, but don't remove any plants or insects from their natural habitats.

