

# CARRYING CAPACITY

## WHAT IS IT?

Carrying capacity is the maximum population that an environment can support while sustaining essential resources like food, water, and energy for everyone who lives there.

## HOW DOES IT IMPACT US?

**FOOD** As the global population increases, how can we ensure there will be enough food for everyone? To measure a region's agricultural carrying capacity we need to answer these questions:

- ☀️ How healthy is the soil?
- ☀️ How many calories do people need to thrive?
- ☀️ Is the land capable of growing enough crops?
- ☀️ Is there enough sustainable water for crops?
- ☀️ Do we have enough energy to grow, harvest and process crops?

Understanding the agricultural carrying capacity of a region enables communities to maintain the balance between agricultural production and the health of the environment. We want to ensure that future generations can be fed, and that the environment remains healthy.

**WATER** Water scarcity and quality is an increasing concern. Many regions are experiencing major stress upon their water supplies. The carrying capacity for water depends on the long-term trends of the changing climate in that region, the amount of rain the region gets and how much well water is available to supplement fresh water from streams, lakes, and rivers. Pumping well water reduces the amount of water in the ground below. Some well water is replenished from rain seeping into the ground. By understanding the limits of our carrying capacity for water, we can work towards ensuring that everyone has access to enough clean water through efficient use, recycling and protection of surface and groundwater.

**ENERGY** As the demand for energy increases, it's crucial to understand our reliance on finite resources like fossil fuels and to develop alternative and renewable energy sources such as solar, wind and hydropower. Transitioning to cleaner and more sustainable energy options is necessary to ease environmental impacts and ensure a long-term energy supply. Improved energy efficiency in households, industries and transportation will reduce the strain on society's energy resources, enhancing the overall carrying capacity.

## WHY IS IT SO IMPORTANT?

EDA specializes in the study and measurement of a community's resource carrying capacity. Our ability to measure and provide for our basic needs is a fundamental consideration for the well-being of our planet and its inhabitants. By adopting sustainable practices in agriculture, water management and energy production, we can better balance our needs with the Earth's ability to provide these resources.

As we navigate the challenges of a growing population, a collective effort towards recognizing and respecting the limits of resource carrying capacity is essential to provide for the health and resilience of our planet.

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