**Chapter 1 Section 1-1**

 3 Goals of Env. Science:

3 Goals of Env. Science 1. learn how has life survived and done well

 2. learn how we interact with env.

 3. find ways to solve env. problems and live more sustainably

3 Scientific Principles of 3 Scientific Principles of Sustainability - Life has survived a long time due to:

 Sustainability 1. solar energy – light and heat warm the planet

- What type of energy is - needed for photosynthesis (food chain)

 necessary for survival and - indirect solar energy like wind and moving water

 what is it used for? 2. biodiversity – variety of living things

- Why is biodiversity - interactions provide ecosystem services and pop.control

 important to long term - allows for adaptation as env. changes survival

 survival on planet? 3. chemical cycling – chemical cycle from soil to water to organisms

- Why is there little waste - helps to recycle chemicals since earth is a closed system

 in nature? - would have run out without them

 - ex. water cycle, nutrients returned by decomposers

natural capital Natural Capital - natural resources and natural services that keep organisms

 alive and support our economies

natural resources natural resources – material and energy that we need and/or use

 ex. trees, soil, sunlight, water

natural services natural services – things healthy ecosystems do

 ex. purify water and air

- Why does natural capital renew topsoil

 help organisms survive on pollinate crops, trees, flowers to help plants reproduce

 the planet? cycle nutrients

- How do humans degrade Humans degrade natural capital by:

 natural capital, and what - using resources faster than they replace themselves

 can we do about it? - put too much pollution into the env.

Summary:

Environmental science trys to understand what it takes for organisms to survive on the planet, how do humans impact the environment, and how do we solve environmental problems and have less impact.

In order for life to survive on the planet over the long term, it needs solar energy to start the food chain, biodiversity to survive changes, and cycles to renew chemicals. The resources and services that ecosystems provide are part of the earth’s natural capital which humans are ruining through depletion and pollution. We need to learn to live more sustainably, or we will not survive in the long term. (Run out of resources, poison ourselves with pollutants.)