



The Big Picture

Ecosystems, Science, and Balance

Unit 1 → Chapter 1



What is Environmental Science?

And how will it affect you?

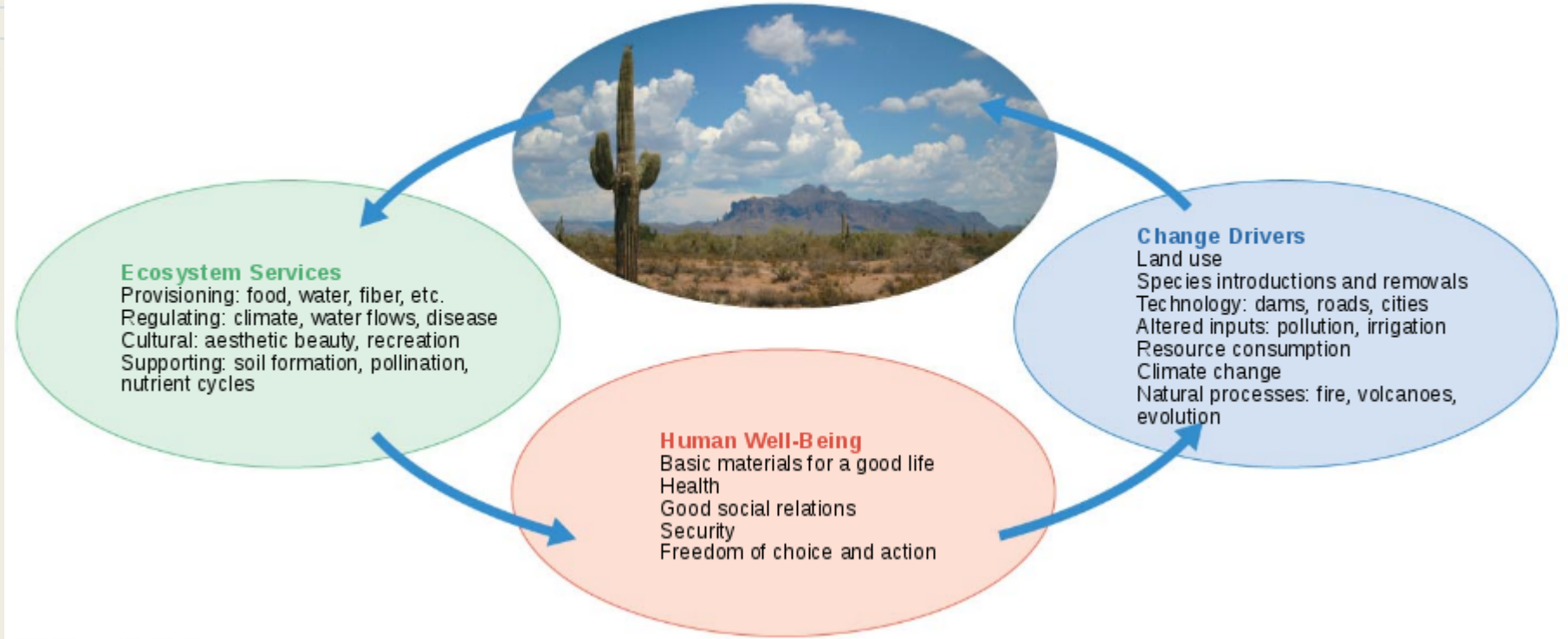
Environment = All the physical, chemical, and biological factors and processes that determine growth and survival of an organism or community of organisms.



Exercise:

List why it matters to YOU.

What the ecosystems give us



Ecosystems

They BREATHE.



VOCAB

Biota = Living

Abiotic = Non-living

Ecosystem integrity = web of interactions that regulate all the ecosystem functions

It's the principle of the thing.

**Matter cannot be
created or destroyed.**

It can only be transformed.

There's a disturbance in the force.

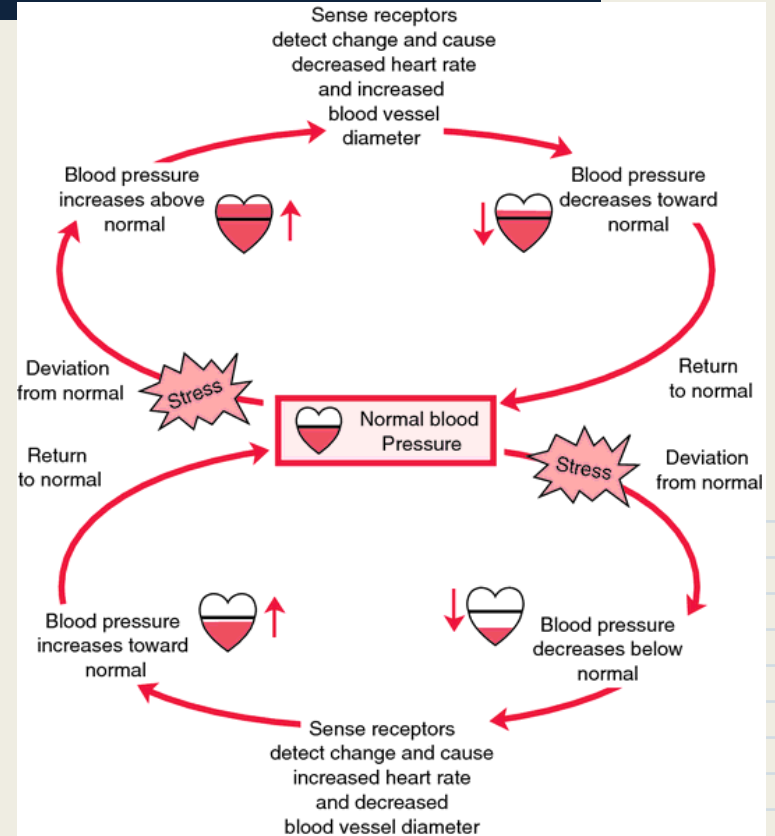
VOCAB

Dynamic homeostasis = the way systems adjust to minimise the variances from normal.

Feedback = Ability of a system to adjust itself.

Negative Feedback = REVERSE IN THE DIRECTION OF CHANGE.

Positive Feedback = REINFORCES CHANGE.



Change is inevitable and essential.

Balancing Games

01. Managing what we have.
02. Understand the boundaries.
03. Maintain balance and integrity to the system.
04. Embrace change.

EXERCISE:

Imagine you are helping at a natural disaster and you need to set up a hospital like this one.

Use the queues above to decide what needs to be done to manage things.



Battery backup in a Burundian hospital. (Long Miles Coffee Project)

Uncertainty, science, & systems thinking

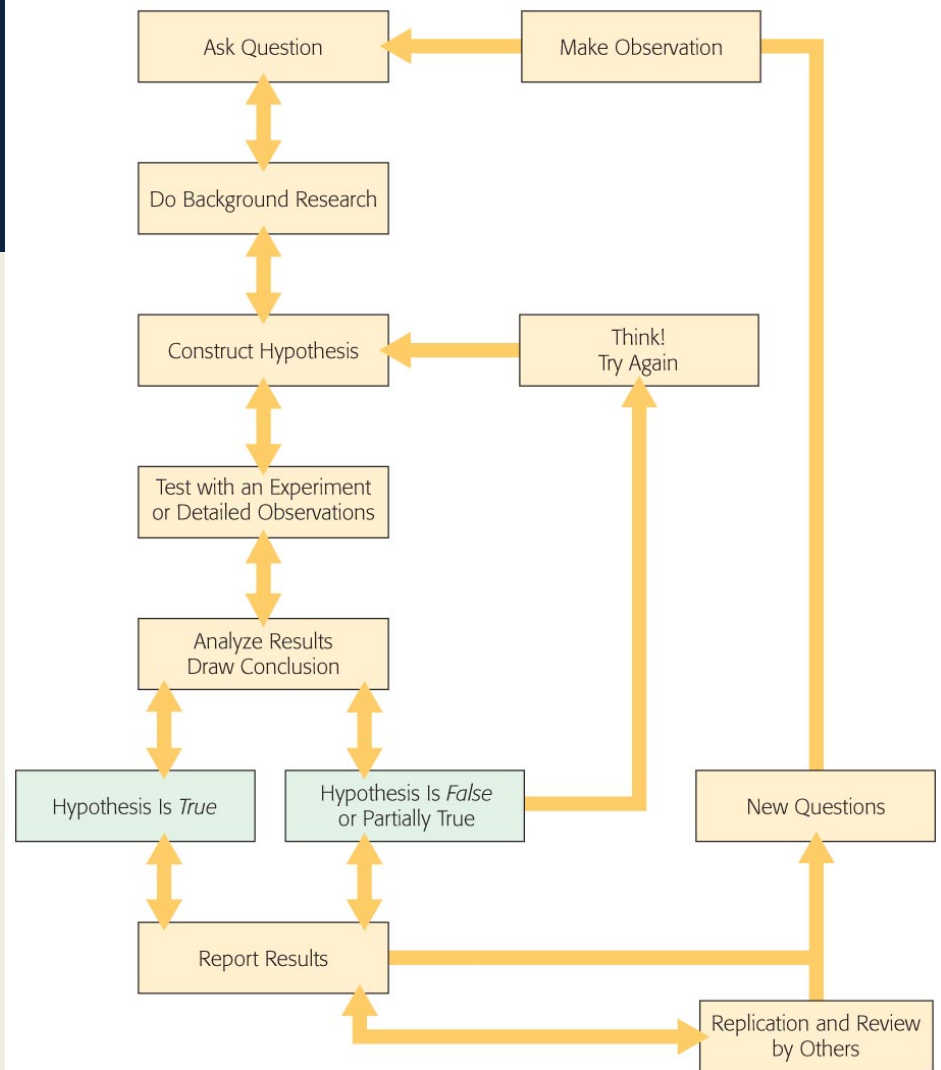
Sometimes it's the illusion of knowledge.

Complexity in a system makes them more unpredictable, even if we can see trends.

This means that we should think of think of the association of parts to think of ways that the different parts might interact.

BEWARE! THIS MANNER OF THINKING LEADS TO LOGICAL FALLACIES WHEN NOT THOUGHT THROUGH!

Correlation does NOT equal causation. ***EVER.***



Kaplan Homework

The homework problems for this chapter are:

- 1.2
 - #1
 - 1.3
 - #2
 - 1.4
 - #3
 - 1.5
 - #3
- 2.2
 - #2
 - 2.3
 - #3
 - 2.5
 - #2

Extra credit:

Explain how knowing about the environment can impact your future career in criminal justice.

This could be a big picture for the whole of your department or just you personally while on the job. Get creative and think of ways to apply your new knowledge.

Due 29.April.2015
Beginning of class

Thinking ahead

Project 1 -- Due at the beginning of Unit 3 (6.May.2015).

Begin by brainstorming ideas that you will engage in within your career in criminal justice that might have a negative impact on the environment? Some examples might be leaving lights on all night, driving around excessively, printing out every email you might get, etc.

Once you have a list of potentially damaging behaviours that you'd like to know more about, conduct research to what the local environmental impact of those behaviours are.

Write a 2 - 3 page paper that describes these behaviours and their potential impact on the environment. Include in the paper the roles of ethics, markets, and law into these behaviours. Conclude by arguing whether or not such behaviours should change, why or why not, and, if they should, how.

Projects must include 3 sources. The paper should be single spaced, using a standard 12 point font.