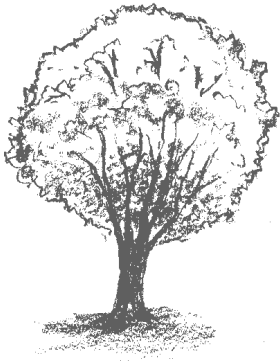


Name _____ Date _____



Ecosystem Services Inventory in the Kellogg Forest

AP Environmental Science

Instructions:

At each habitat we visit, make notes on the ecosystem services you observe or infer (refer to the list of ecosystem services). Note the organisms, processes and/or landscape features involved. Jot down other things you notice about the ecosystem.

Habitat:

1. Augusta Creek

2. Hardwood forest

3. Old field

4. Parking lot

Critical thinking questions

How does the mixture of land-use types (conifer forest, hardwood forest, old field, stream, agriculture) in and around the Kellogg Forest act as an ecosystem service (as opposed to being all one land use type)?

As cities grow in size, more and more land is “developed” (meaning, it becomes a built environment—houses, buildings, roads) and taken out of agricultural production. As the world population grows we need more land to produce food. How are these two patterns in conflict? What can city planners, farmers, land owners, and consumers do to balance both needs?

In a given day, take inventory of the ecosystem services you rely on to live your life. Including, but not limited to, the food you eat, your family car, your computer, the air you breath, water to drink and water to flush the toilet. How does your lifestyle (diet, consumption, energy use, etc.) affect the health of ecosystem services at the local, regional and global scales?

Imagine MSU decides to clear cut the trees at the Kellogg Forest to sell the lumber to pay for a new football stadium. Would you support that? If not, how would you convince the president of MSU not to cut down the forest?

Imagine you are an ecologist interested in the effect of climate change on the “supporting services” (soil formation, nutrient cycling, and primary production) at the Kellogg Forest. What type of historical data would you look for? What types of new data would you collect? Imagine you have a limitless budget, design a 10 year experiment to investigate how the elevated CO₂ concentration, temperature and altered precipitation patterns predicted for the year 2100 will affect forest primary production.