


video **Agricultural & Land Use**

 <http://www.youtube.com/watch?v=mZ5OohqO9b4&safe=active>

Agricultural & Land Use

- Only 11% of the Earth's land is suitable for growing crops.
- By the year 2050 the Earth's population may be nearing 10 billion!
- Will it be possible to grow enough food for everyone?...

Watering the desert:

- Near-deserts may be modified to promote crop growth.
- 2 requirements:
- Water needs to be pumped there.
- An irrigation system needs to be set up.



Problems:

- All fresh water has salt.
- Because of the heat, water will evaporate leaving much salt behind.
- Eventually even this land will be too salty to grow food.

Agricultural and nutrients Use

- When crops are harvested, valuable nutrients (nitrogen & phosphorus) are removed from the soil permanently.
- Farmers have to replace it by adding Fertilizers.

Using Fertilizers:

- In the 1960's and 1970's the use of nitrogen, phosphorus and potassium increased crop production greatly.
- Many of these and other fertilizers are still used.



Problems

- Too much fertilizer can increase the acidity of the soil.

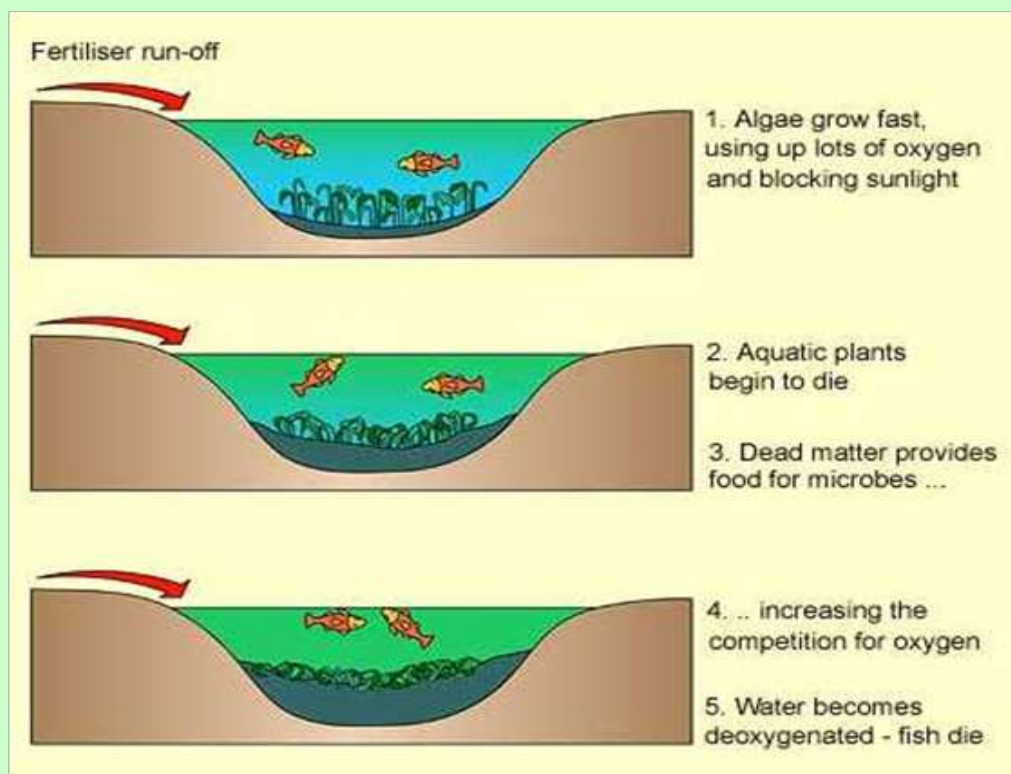
These nutrients are carried into streams and then lakes by spring runoff causes algae to grow rapidly called algal bloom.

Algal bloom promote increase plankton and decomposers populations.

Problems

- When algae die, the bacteria in water decompose it by using oxygen.

This depletes oxygen levels and causes fish and other organisms to die.



Alternatives to applying fertilizer

- Rotating crops, as was done before the 1960's.
- For example planting a legume crop instead of a vegetable crop to restore nitrogen.



Monocultures:

- Unnatural ecosystems that contain a single crop.
- Ex. A wheat field



Advantages

- Its much easier to care for the crop when it is all together in one field - it saves time and money.
- The timing of fertilizer application, irrigation and harvesting can be made ideal for the crop.

disadvantages

- More susceptible to pest because there is plenty of food available
- Replacing biodiversity ecosystems with artificial ecosystems
- Biodiversity of the land is lowered
- Pests can more easily take over (destroying the crop)
- Pest become resistance to pesticides

Affects of using pesticides

- Beneficial insects (ex.ladybugs, bees), as well as the pests, are killed.
- Food webs are damaged.
- Bioamplification occurs
- Pesticides cause 20 000 human deaths and ~ 1 million poisonings every year



Pest Management

- Building birdhouses to attract insect-eating birds
- Building straw huts provide shelter for spiders during the winter and in spring these spiders eats (kills) insects pest that live on the rice, trees, etc.
- Crop rotation, pest larvae will emerge to unfavorable food supply.

