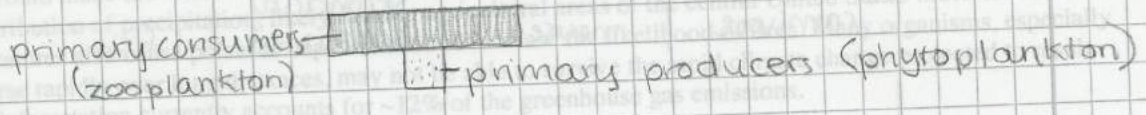
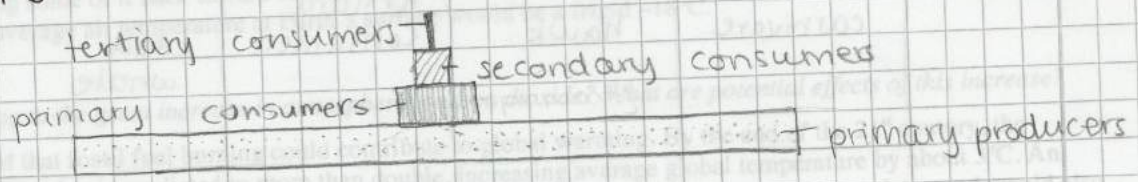


CHAPTER 55: ECOSYSTEMS

Keller 12d

23) pyramids of biomass (standing crops)



How is atmospheric ozone depleted? What are projected effects of this depletion?

Ozone is removed from the atmosphere by a layer of snow located in the stratosphere 15-25 km above Earth's surface. The depletion is caused by the accumulation of chlorofluorocarbons (CFCs), chemicals once widely used in refrigeration and manufacturing. In the stratosphere, chlorine atoms released from CFCs react with ozone, reducing it to molecular O_2 . Subsequent chemical reactions liberate the chlorine, allowing it to react with other ozone molecules in a catalytic chain reaction. At the more heavily populated middle latitudes, ozone levels have decreased 2-10% during the past year.

Decrease in ozone levels in the atmosphere increases the intensity of UV rays reaching Earth's surface. Some scientists expect that increased UV radiation will lead to an increase in skin cancer among humans, as well as unpredictable effects on crops and natural ecosystems. Scientists who believe phytoplankton are responsible for a large proportion of fish's primary production. As a consequence, if many organisms have rapid responses to the ozone hole, chlorine concentrations in the stratosphere have stabilized and ozone depletion is slowing. Even though CFC emissions are close to zero today, however, chlorine molecules already in the atmosphere will continue to influence stratospheric ozone levels for at least 50 years.

28) Ecosystem model of standing crop productivity

