



CHEMISTRY AND ENVIRONMENT: An Overview



Environmental Chemistry

- Scientific study of the chemical and biochemical phenomena that occur in natural places.
- It should not be confused with green chemistry, which seeks to reduce potential pollution at its source.
- Study of the sources, reactions, transport, effects, and fates of chemical species in the air, soil, and water environments; and the effect of human activity and biological activity on these.
- Environmental chemistry is an interdisciplinary science that includes atmospheric, aquatic and soil chemistry, as well as heavily relying on analytical chemistry and being related to environmental and other areas of science



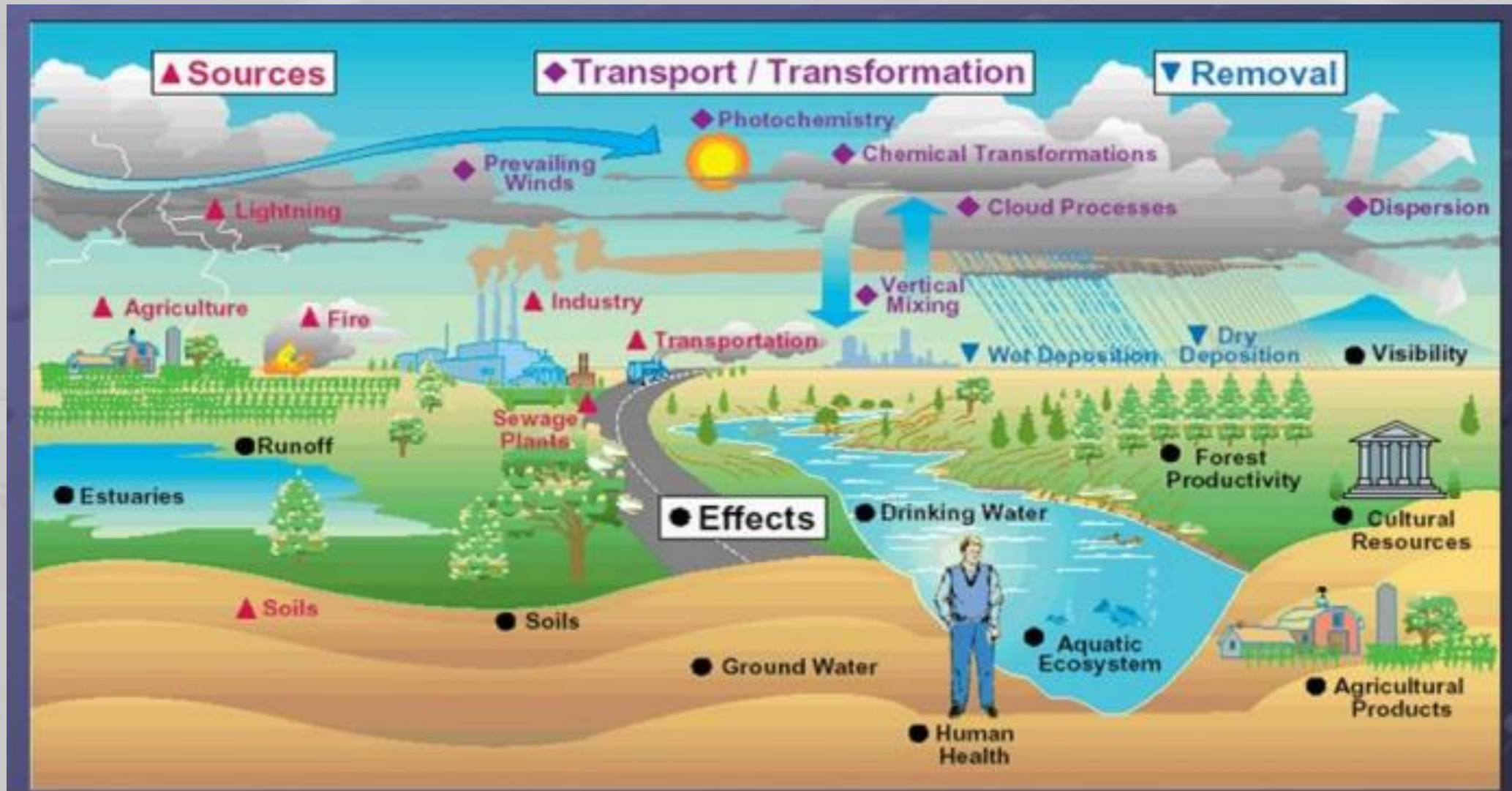


Environmental Pollution

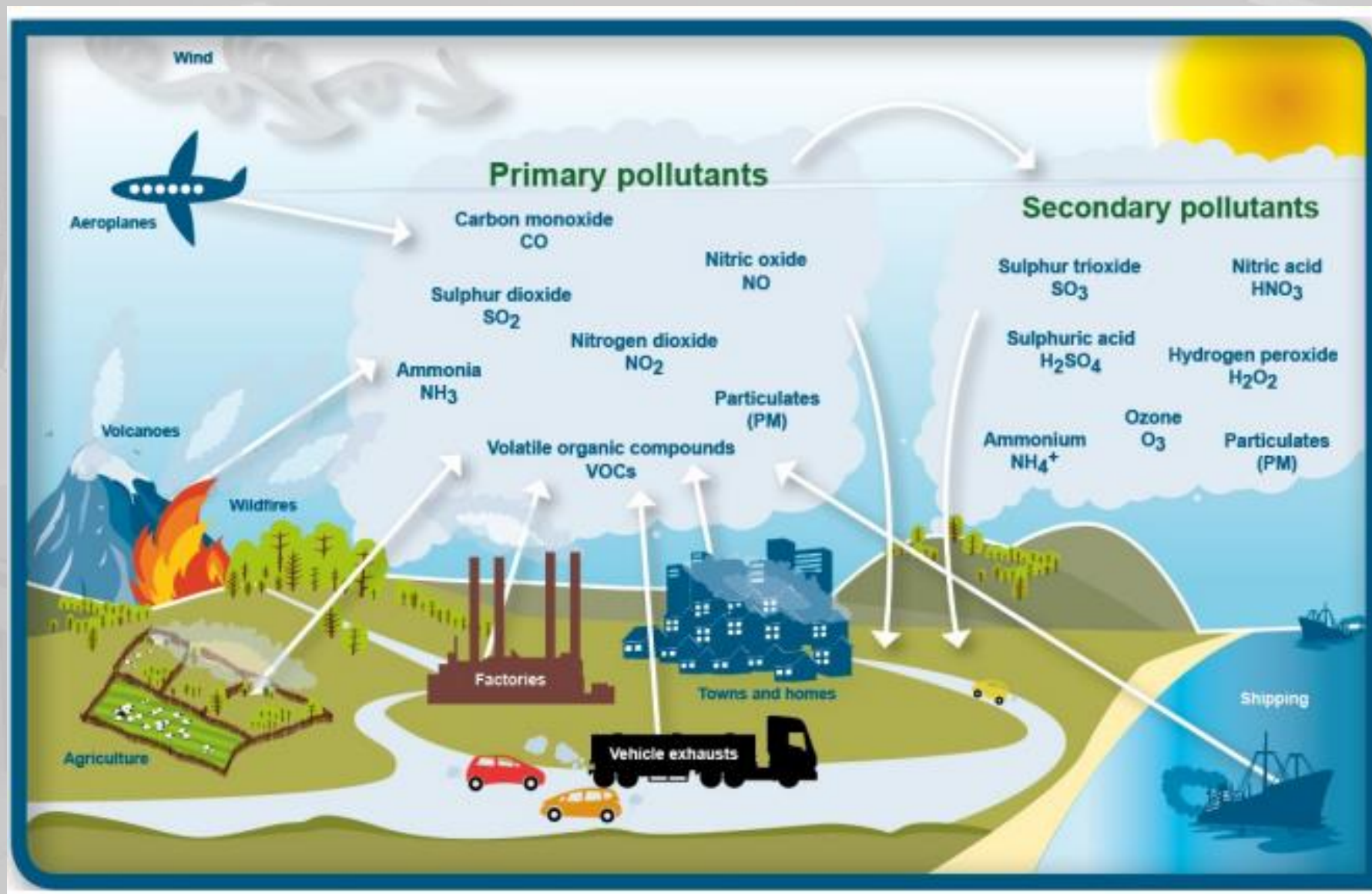
- Environmental pollution is the effect of undesirable changes in our surroundings that have harmful effects on plants, animals and human beings.
- A substance, which causes pollution, is known as pollutant.
- Pollutants can be solid, liquid or gaseous substances present in greater concentration than in natural abundance and are produced due to human activities or due to natural happenings.
- Pollutants can be degradable, like discarded vegetables which rapidly break down by natural processes.
- On the other hand, pollutants which are slowly degradable, remain in the environment in an unchanged form for many decades like DDT, plastic materials, heavy metals, many chemicals, nuclear wastes etc.



Environmental Pollution



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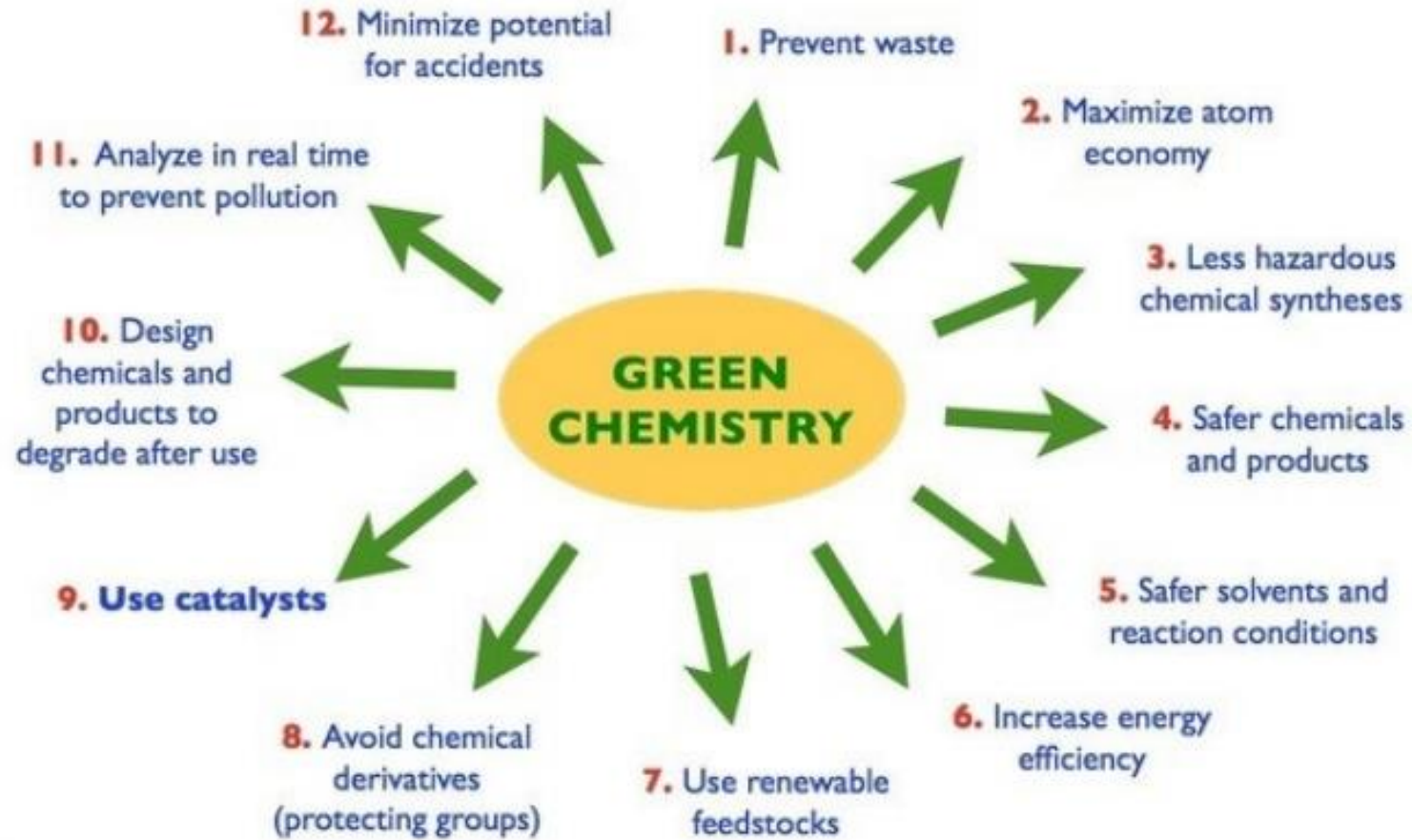
Green Chemistry

- Green chemistry, also called sustainable chemistry, is an area of chemistry and chemical engineering focused on the designing of products and processes that minimize the use and generation of hazardous substances.
- Whereas environmental chemistry focuses on the effects of polluting chemicals on nature, green chemistry focuses on the environmental impact of chemistry, including technological approaches to preventing pollution and reducing consumption of nonrenewable resources.
- The overarching goals of green chemistry—namely, more resource-efficient and inherently safer design of molecules, materials, products, and processes—can be pursued in a wide range of contexts.





Green Chemistry



Anastas and Warner (1998)

