



Types of water pollution

• Sources of pollution can be *point* (PS) or *nonpoint* (NPS).

 Point sources discharge pollutants at specific locations and are <u>easy</u> to locate, regulate, and remediate.

 Nonpoint sources cannot be traced to a single discharge point, and are <u>difficult</u> to monitor, regulate, and remediate.

Water Pollution

A. HUMAN IMPACTS ON THE NILE

• Municipal Pollutants





56,000 m³/d sewage water from El-Sail Drainage, Aswan.





Water Pollution

A. HUMAN IMPACTS ON THE NILE

- Municipal Pollutants
- Agricultural Pollutants
 - Nutrients (phosphorus and nitrogen)
 - Pesticide



Agricultural chemicals (Pesticides, fertilizers),, deforestation (burning of the wood), soil preparation, irrigation, crop processing (cleaning, sorting,..), transportation, livestock.

Major Sources of Pollution

Agricultural drainage water

- Originally mainly drainage water containing salts, nutrients, pesticides, herbicides, pathogens
- Receiving increasing amounts of (largely untreated) industrial and municipal wastewater
- 67 major drains discharging to the Nile upstream of the Delta Barrages
- 30,310 km Nile and irrigation canals.
- 17,200 km agricultural-drain canals (17 km³), of which 11 km³ to the Sea.
- 1,500 villages drain in the Nile.





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Main Sources of Pollution (Cont.)

Industrial Wastewater

- More than 25,000 industries of them 700 major.
- ->350 factories discharge directly into the Nile.
- 14 electric power stations along the Nile.
- More than 40 industries along the Nile upstream of the Delta Barrages
- Most heavy industries located in greater Cairo and Alexandria





Water Pollution

A. HUMAN IMPACTS ON THE NILE

B. NATURAL SOURCES

• Desertification (Sand and dust storms)













Nile flood, Delta, 1963



- 1. Desertification (Sand and dust storms)
- 2. Flooding
- 3. Volcanoes







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- 2. Flooding
- 3. Volcanoes
- 4. Tsunami and Earthquakes (fires,











By rupturing gas and electrical lines, earthquakes can result in large fires. Since water mains may be broken and roads damaged by the same 'quake, these fires can be difficult to put out. In the case of the 1906 San Francisco earthquake, much of the damage was the result of fires instead of the earthquake shaking itself. *USGS*

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- 8. Wildfires
- 9. Sea-water intrusion





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- 12. Heat (springs)

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- **13. Meteorite impact**







What Can We Do?

- •Use water-saving toilets, showerheads, and faucet aerators.
- •Shower instead of taking baths, and take short showers.
- •Repair water leaks.
- •Turn off sink faucets while brushing teeth, shaving, or washing.
- •Wash only full loads of clothes or use the lowest possible waterlevel setting for smaller loads.
- •Wash a car from a bucket of soapy water, and use the hose for rinsing only.
- •Replace your lawn with native plants that need little if any watering.
- •Water lawns and garden in the early morning or evening.
- •Use drip irrigation and mulch for gardens and flowerbeds.
- •Use recycled (grey) water for watering lawns and houseplants and for washing cars.