

Introduction to Water Pollution



ESS 2017

Learning Objectives

Able to explain the problem posed by plastic microbeads

Able to describe sources of water pollution

Able to describe the BOD

Plastic Microbeads

Some plastics mimic human hormones

Plastic attracts pollutants - concentrates by 1×10^6

1 shower...

100,000 plastic beads!

UK, 680 tons per year++

6 oysters...

50 plastic beads!

1 fish...

1,000 plastic beads!

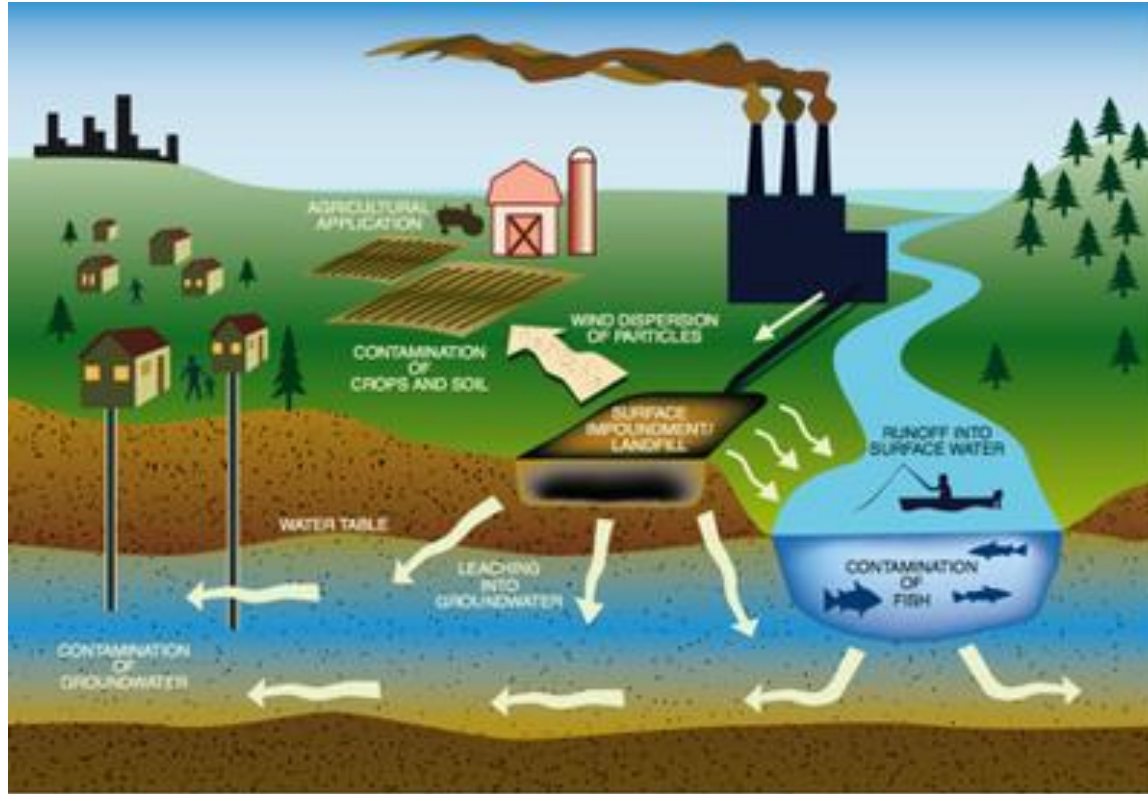
At least 663 species that we eat are contaminated



Sources:

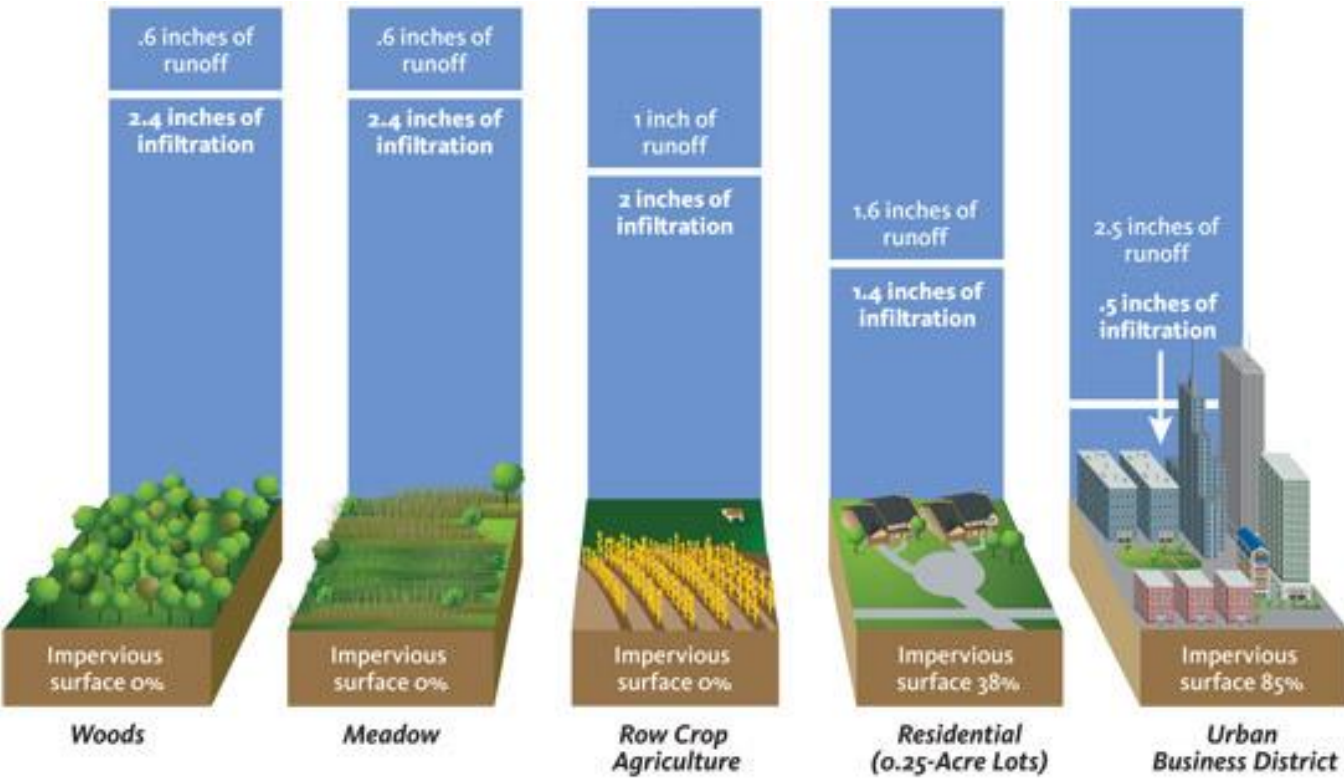
- <http://www.bbc.co.uk/news/uk-37263087>
- <http://www.bbc.co.uk/news/science-environment-36435288>

Sources of Water Pollution



Credit to: Catawba Riverkeeper, <http://www.catawbariverkeeper.org/photo-gallery/Coal%20Ash%20Diagram.png/view>

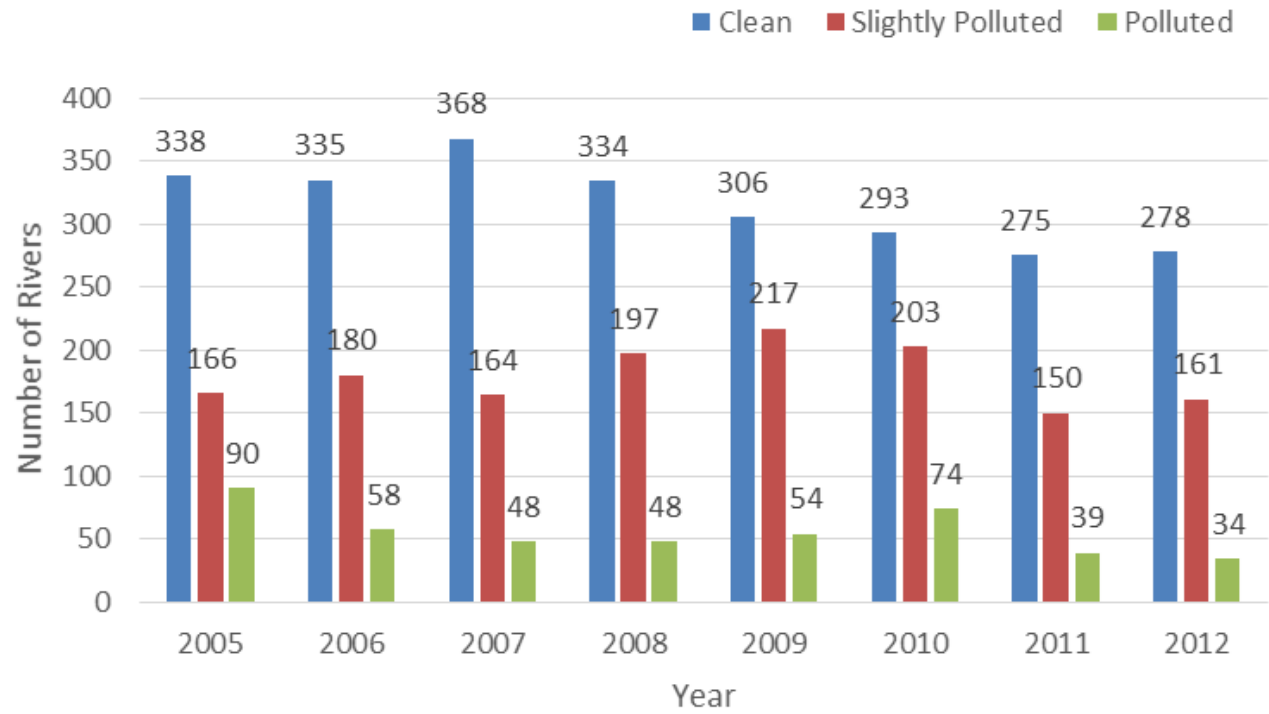
Landscapes and Water Pollution



Credit to: Landscape for Life, <http://landscapeforlife.org/water/landscape-practices-contribute-to-water-pollution/> and Loizeaux-Bennett, S. "Stormwater and Nonpoint-source Runoff: A Primer on Stormwater Management." *Erosion Control* 6, no. 7 (1999): 56-69.

Major problem in water-stressed countries

E.g. Malaysia



Credi to: Huang et al, "Quality of Water Resources in Malaysia", <http://www.intechopen.com/books/research-and-practices-in-water-quality/quality-of-water-resources-in-malaysia>

BOD (Biochemical Oxygen Demand)

BOD =

Measure of dissolved oxygen needed
to break down organic material in
a specific volume of water by
aerobic decomposition by microbes