3.1 The Dirt on Dirt

Why does China's Yellow River flow yellow during flood season?

It is the same reason that the Kings River flows brown after a heavy rain. Rivers receiving large loads of *stormwater runoff* typically take on the same color as the sediment found in their watershed.

As stormwater moves over the land, it picks up loads of sediment, debris, nutrients, and anything else that isn't hanging on tight. Sediment in our waterways is a result of both natural processes as well as human influences. Natural sediment inputs are usually very small and can easily be processed by the stream. Today streams are receiving excessive amounts of sediment from many sources: upland erosion, streambank erosion, gravel roads, construction sites, tilled fields, and many more.

Impact of Excess Sediment In Waterways

Fish	Reduced feeding efficiency, reduced tolerance to disease, smothering of eggs and fry. Loss of sensitive species like Smallmouth Bass
Aquatic Insects	Elimination of diverse habitat, decreased food supply, decreased population diversity
Mussels	Reduced ability to feed—directly leads to die off
Plants	Decreased sunlight leads to decreased production
Humans	Reduced recreational opportunities as game fish disappear, reduced life span of downstream reservoirs

Sediment bonds easily with nutrients and other pollutants, moving these particles into waterways every time it rains.

Phosphorus is a nutrient that bonds very strongly with sediment. One study found that approximately 95% of phosphorus in streams is attached to sediment particles. This means that if we can stop the dirt from moving during storms, we can also stop the nutrients.