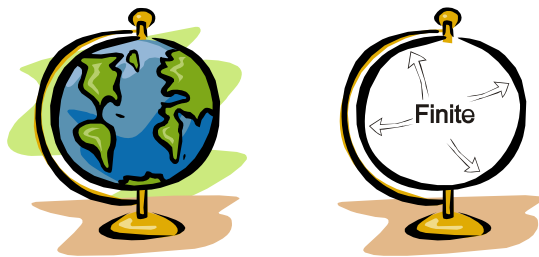
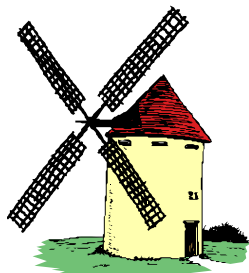
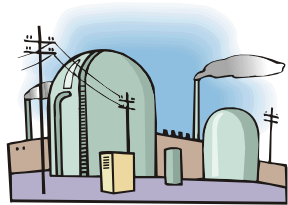


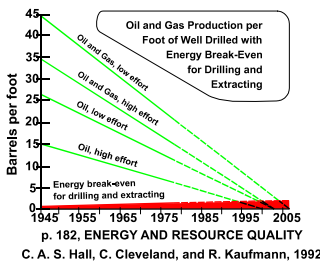
The Earth is a sphere. All spheres are finite. Therefore, the Earth is finite.



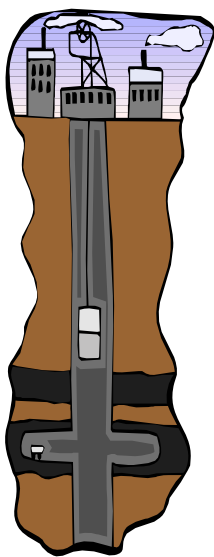
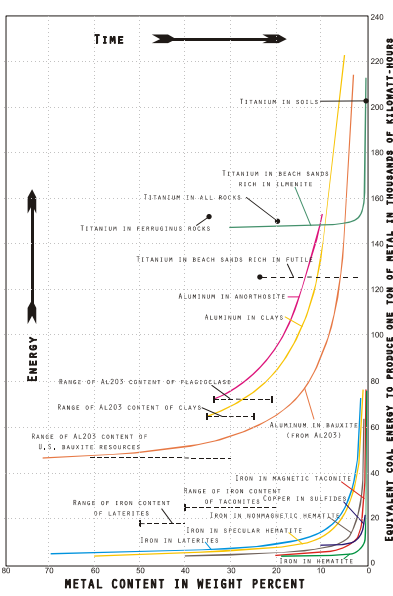
If the Earth is finite, then the Earth's energy resources must be finite too: **finite stocks** such as oil, coal and uranium — and **finite flows** such as wind and solar. It's physically impossible to increase these finite resources.



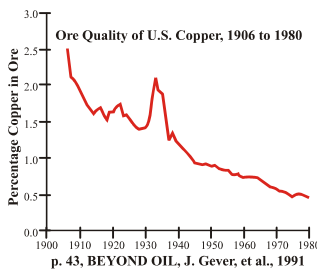
ENERGY "RESOURCES" MUST produce more energy than they consume, otherwise they are called "sinks" (this is known as the "net energy" principle).



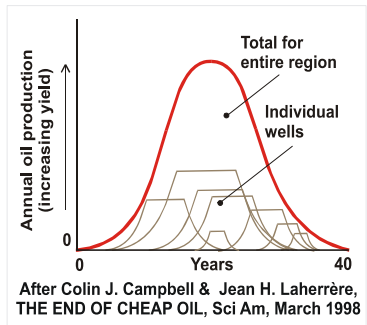
We mine minerals and fossil fuels from the Earth's crust. About 735 joules of energy is required to lift 15 kg of oil 5 meters out of the ground just to overcome gravity — and the higher the lift, the greater the energy requirements.



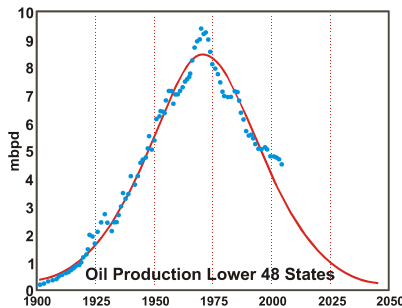
The most concentrated and most accessible resources are produced first; thereafter, **more and more energy is required to produce poorer and poorer quality resources.**



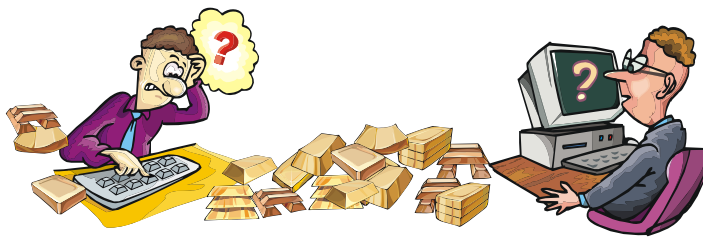
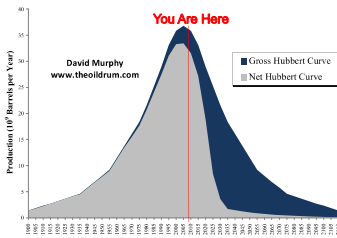
As time goes on, a larger and larger fraction of the energy produced must be reinvested in energy production to keep the same level of energy available for consumer goods and services. This means that energy companies must spend more energy tomorrow to produce the same amount of energy as they did today.



At some point, more energy is spent finding and producing oil than the energy recovered — and the "resource" has become a "sink".



Once looking for oil in the lower-48 becomes a sink, even if the price of oil reaches \$5000 a barrel, it wouldn't make energy-sense to look for oil in the lower 48 because that would consume as much energy as it would recover.



Even if one paid a ton of gold per barrel, one still could not get net energy out of a well that consumes as much as it produces!



Eventually, the only way to maintain our standard of living is to attack others and seize their resources. *It's genetic*