

**Oil is to Humanity as
a cat's Mother's Milk is to her Kittens:**



Mother's Milk is Liquid Energy flowing directly to Kittens.

Mother's Milk does Not Last Forever.

**While they have Mother's Milk,
Kittens Must Learn to Hunt**



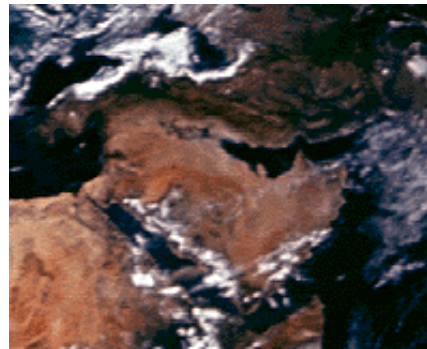
or they Will Starve when Mother's Milk is Gone.

Earth's Oil is Mother's Milk for Humanity:

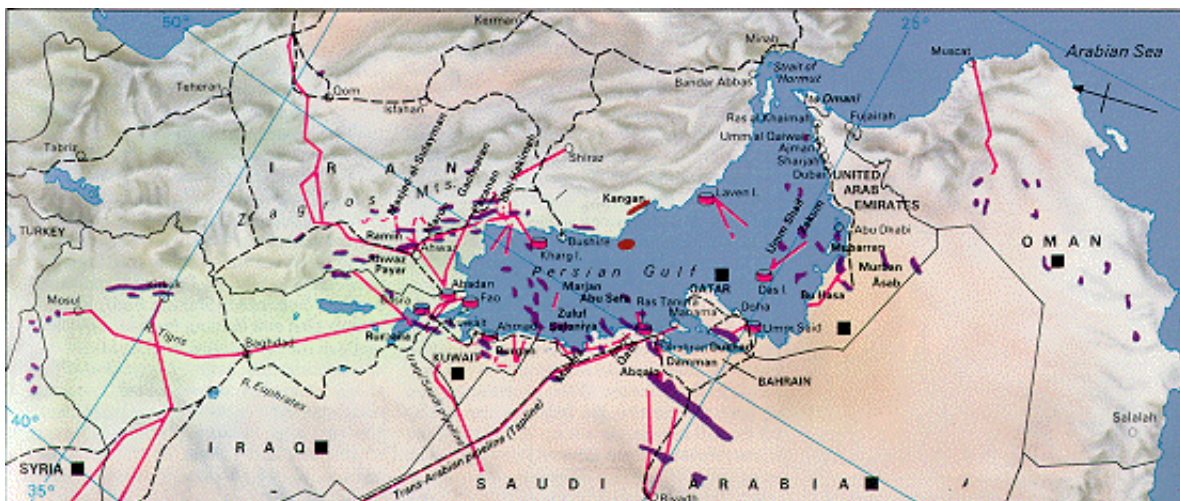
It is Liquid Energy flowing directly from Earth.



Almost Half of Earth's Easy-Flowing Oil is near the Persian Gulf -



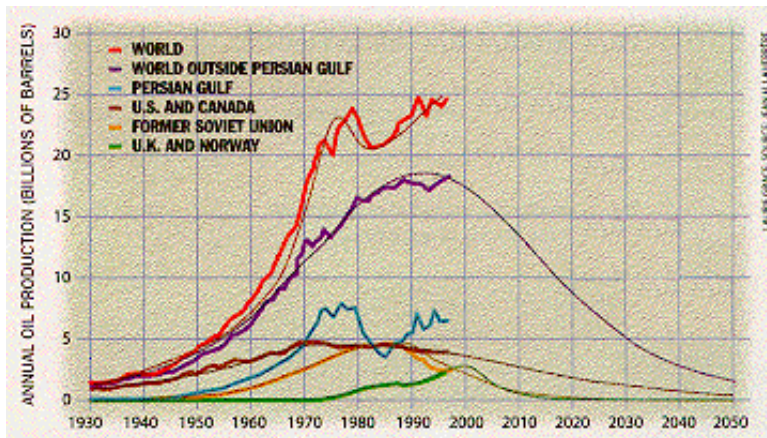
- the Earth's Sweet Flowing Breast



where Humanity's Hungry Mouth is Pressed.

Earth's Oil - like Mother's Milk - will Not Last Forever:

By 2040 A.D. Easy-Flowing Oil will be Gone -



- By 2012 A.D. shortages will be severe.

While it has Easy-Flowing Oil,

Humanity Must Learn to Hunt New Energy Sources and Delivery Systems.

The only Energy Sources that could give 10 billion people the standard of living of the USA are:

Nuclear Reactors; and

Massive Space-Based Solar Energy Collectors.

They could give Humanity enough Energy for the next Million Years.

Of the two, Nuclear Reactors could be built faster, cheaper, and easier, so:

Humanity's next Energy Source should be Nuclear Reactors.

Using total Earth energy reserves in Terawatt-years, according to M. Taube, in his book *Evolution of Matter and Energy on a Cosmic and Planetary Scale* (Springer-Verlag 1985), the number of years that 10^{10} people could consume energy at the present USA per capita rate, a consumption rate of about 1,000 Terawatt-years/year, is:

	Reserves (Terawatt-years)	Duration (years)
Oil	850	1
Gas	550	1
Methane	1,500	2
Coal	7,000	7
Uranium (1/1000 of Earth supply)	1.9×10^9	2,000,000
Thorium (1/1000 of Earth supply)	7.9×10^9	8,000,000
Deuterium (1/1000 of ocean supply)	1.9×10^9	2,000,000
Lithium (source of tritium)	1.9×10^9	2,000,000

As to solar energy, the total solar energy received by Earth is about 109,000 Terawatt-years/year so that 10^{10} people could consume energy at the present USA per capita rate by using about 1% (one percent) of the solar energy received by Earth. This could be done, for example, by building a lot of orbiting solar energy collection dishes and beaming the energy to Earth.

The total geothermal heat flux is about 66 Terawatt-years/year, and the total tidal energy is about 3 Terawatt-years/year, so that those sources would be inadequate to support 10^{10} people consuming energy at the present USA per capita rate.

An Energy Distribution System to wean Humanity from Oil could be based on Hydrogen.

Nuclear Reactors could produce Hydrogen and Fresh Water from Sea Water,

so that

Construction of Nuclear Hydrogen-Fresh Water plants MUST begin NOW

or

Humanity will spend the next few years Fighting Wars over increasingly scarce Oil, and then go into a Dark Age.

This Oil and Kittens page is on the web at <http://www.innerx.net/personal/tsmith/OilMilk.html>

and [a pdf version](#) is on the web at <http://www.innerx.net/personal/tsmith/MilkOil.pdf>

- it was written by [Frank D. \(Tony\) Smith, Jr.](#), on 26 May 2003.

Mother Cat and Kittens image from [a Purina ONE web page](#).

Hunting Cat image from [a Cats in Art - In Antiquity web page](#), which says: "... This mosaic portrait of a hunting cat and his catch was discovered during excavations of the houses in Pompeii ... c. 1st century A.D., ... Italy ...".

Earth from Space images from [a NASA Goddard web page](#), which says: "... Apollo 11 view of Earth taken shortly after lift off on 16 July 1969 from a distance of 180,000 km. Most of Africa can be seen at the center of this image, as well as parts of Europe and western Asia, partly covered by clouds, and most of the Middle East. Apollo 11 was in translunar insertion at the time of this photograph, on its way to the historic first moon walk on 20 July. The Earth is 12,740 km in diameter. North is at 11:00. (Apollo 11, AS11-36-5355) ...".

Persian Gulf Oil Map from The Times Atlas of World History, Hammond 1993.

Oil Production Chart adapted from [Scientific American](#), March 1998.

The phrase "... the Earth's Sweet Flowing Breast where Humanity's Hungry Mouth is Pressed ..." is paraphrased from the poem Trees, by (Alfred) Joyce Kilmer. According to the [Encyclopaedia Britannica](#) (1987 Fifteenth Edition): "... "Trees" ... appeared in Poetry magazine in 1913. ... He was ... b[orn] Dec. 6, 1886 ... d[ied] July 30, 1918 ... educated at Rutgers and Columbia ...[and was]... [k]illed in action during World War I ...[and]... posthumously awarded the Croix de Guerre ...".
