





*Medical Ecology*  
(another name for public health)



**Medical Ecology: Environmental Disturbance and Disease**  
E-Seminar 1, The Normal Environment: How Things Got This Way  
Taught by Dickson Despommier



Play Video  
Full Course  
E-seminar trailer  
(RealVideo Clip)


[http://ci.columbia.edu/ci/eseminars/1111\\_detail.html](http://ci.columbia.edu/ci/eseminars/1111_detail.html)  
<http://www.medecalecology.org/>

**Some primary goals of public health are to insure:**

- 1 safe water supplies for all uses.
- 2 clean air.
- 3 infectious disease-free and toxin-free food supplies.
- 4 acceptable housing and a minimum of good medical care for all.

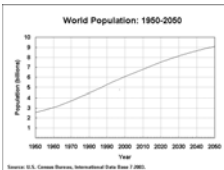
THE NEW YORK TIMES, TUESDAY, SEPTEMBER 2, 2003  
SCIENTIST AT WORK  
RICHARD SMALLEY


**Small Thoughts for a Global Grid**



Dr. Richard E. Smalley, a Nobel laureate famous for his study of carbon nanotubes, has turned his attention to the world's energy needs. In June he spoke at the National Renewable Energy Laboratory in Golden, Colo.

**World Population: 1950-2050**      2-3 Billion More People in 50 Years





10<sup>6</sup> hectares is equivalent to the size of Brazil

**Forecasting Agriculturally Driven Global Environmental Change**

David Tilman,<sup>1</sup> Joseph Fargione,<sup>2</sup> Brian Wolf,<sup>1</sup> Carla D'Antonio,<sup>2</sup> Andrew Dobson,<sup>3</sup> Robert Howarth,<sup>4</sup> David Schindler,<sup>5</sup> William H. Schlesinger,<sup>6</sup> Daniel Simberloff,<sup>7</sup> Deborah Swackhamer<sup>8</sup>

During the next 50 years, which is likely to be the final period of rapid agricultural expansion, demand for food by a wealthier and 50% larger global population will be a major driver of global environmental change. Should past dependencies of the global environmental impacts of agriculture on human population and consumption continue, 10<sup>6</sup> hectares of natural ecosystems would be converted to agriculture by 2050. This would be accompanied by 2.4-3.0 billion more people.

www.sciencemag.org SCIENCE VOL 292 13 APRIL 2001

What are the environmental health problems the world will have to face when another 2-3 billion people are added to it?

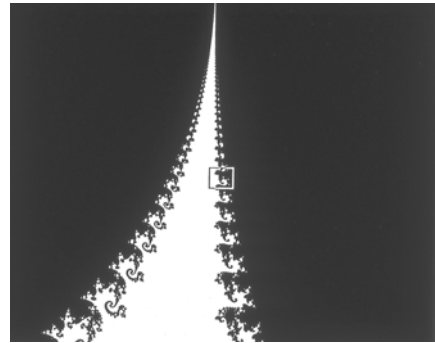
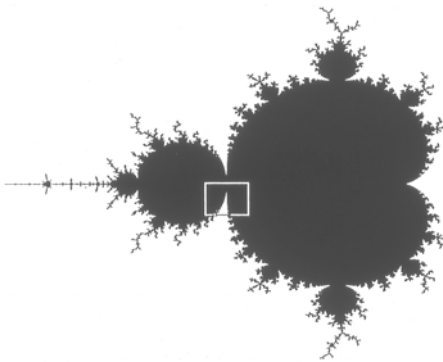
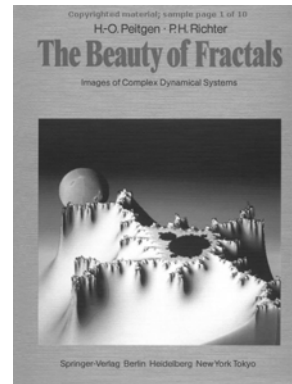
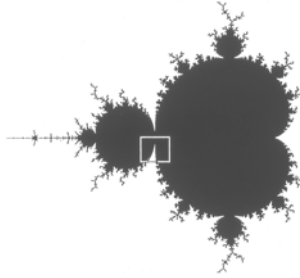
Who is this man and why is he smiling?

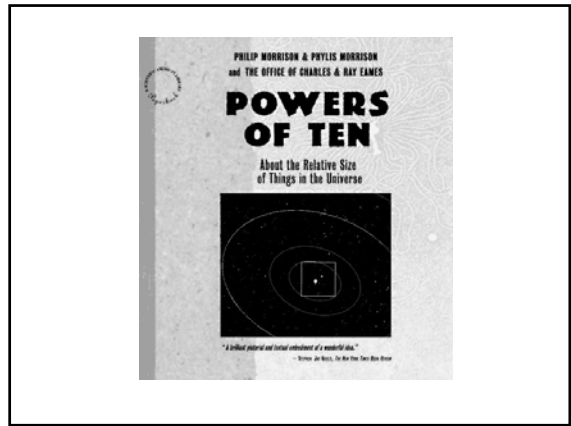
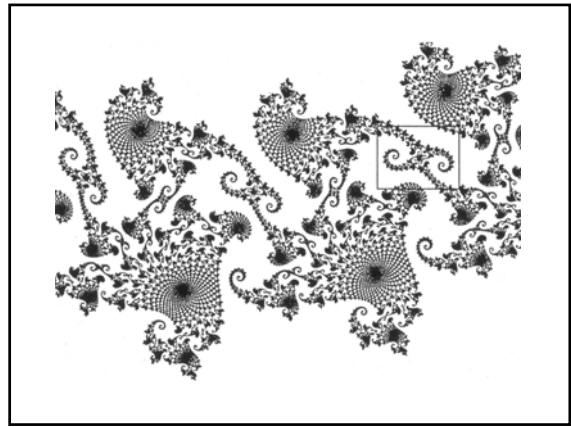
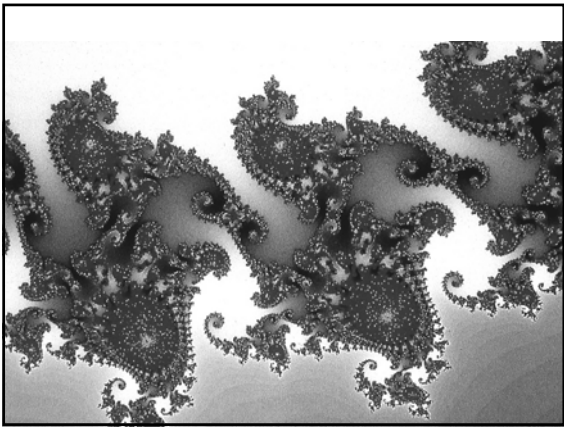
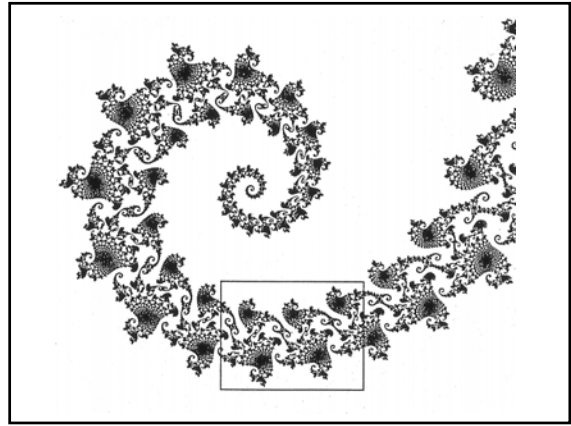
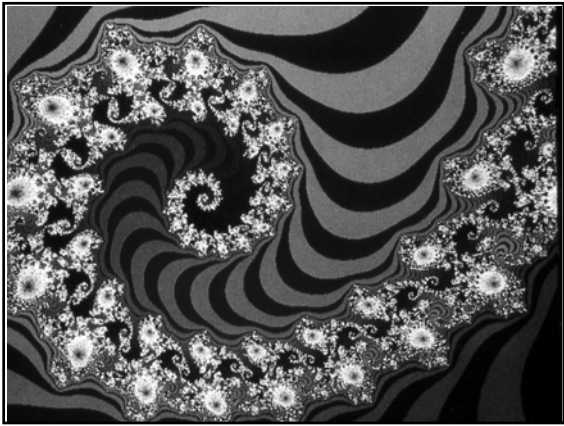


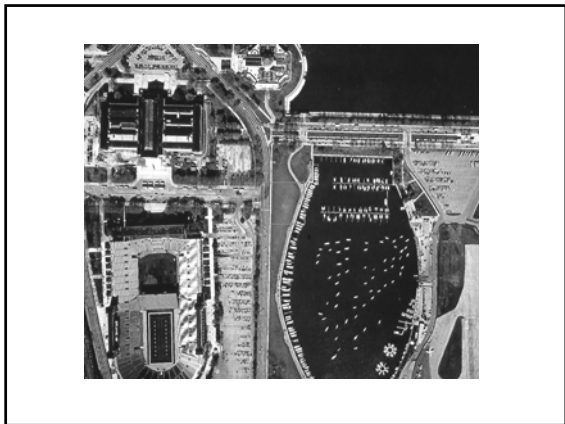
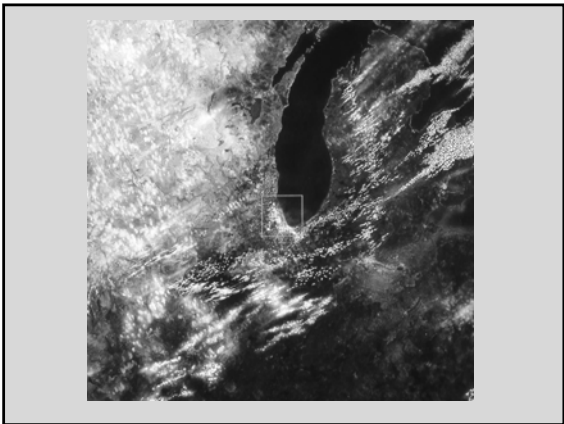
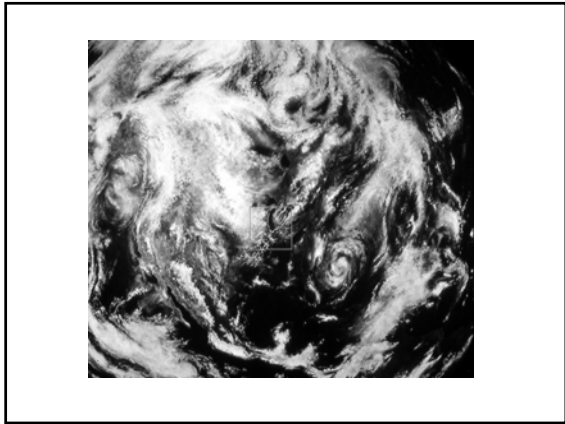
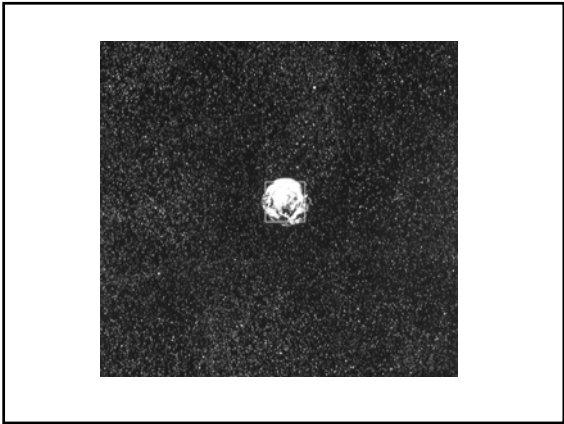
His Name Is Benoit Mandelbrot  
And This Is His Equation

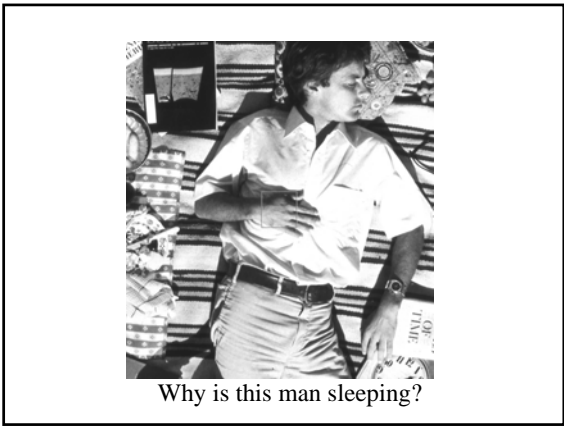
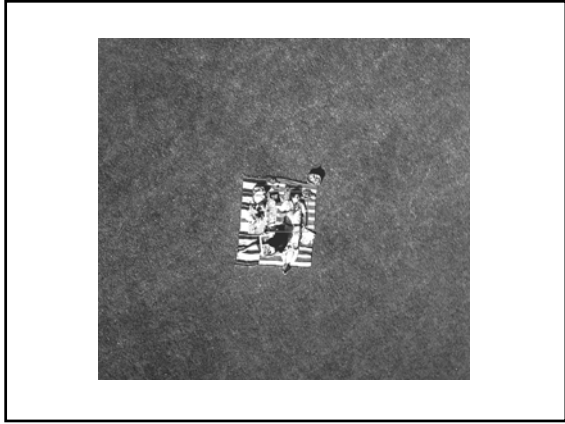
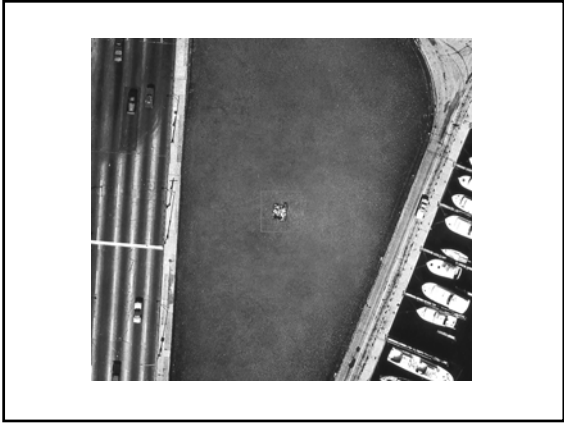
$$x_{n+1} = f(x_n) = x_n^2 + c$$

Visualization Of  
The Mandelbrot Set

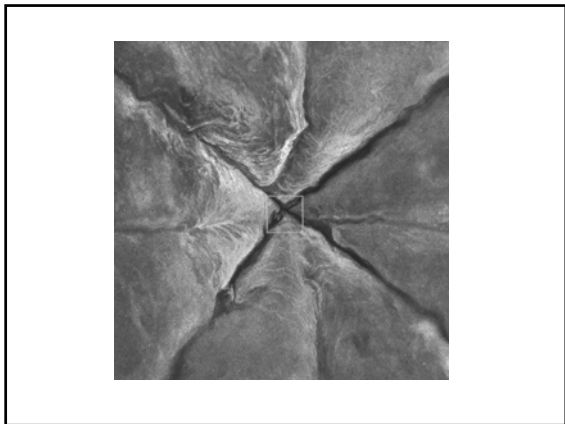
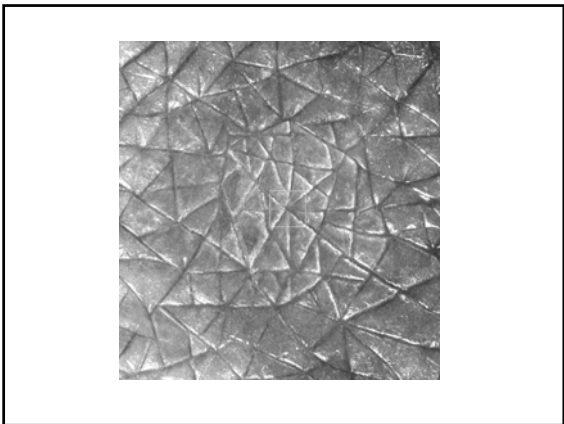
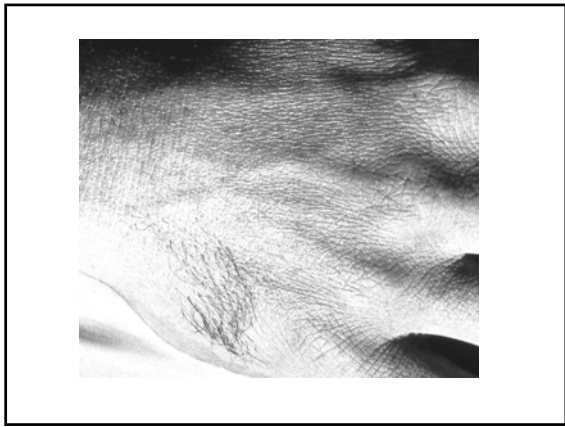


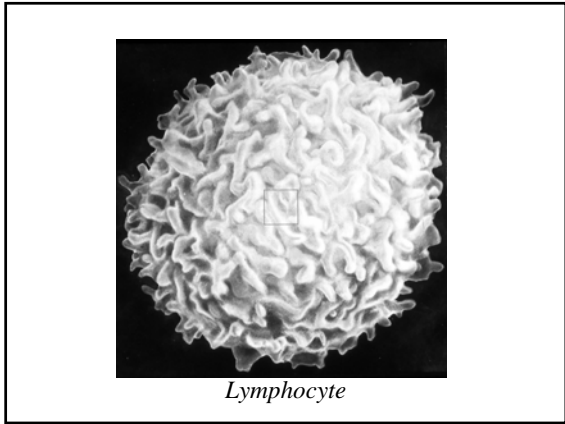
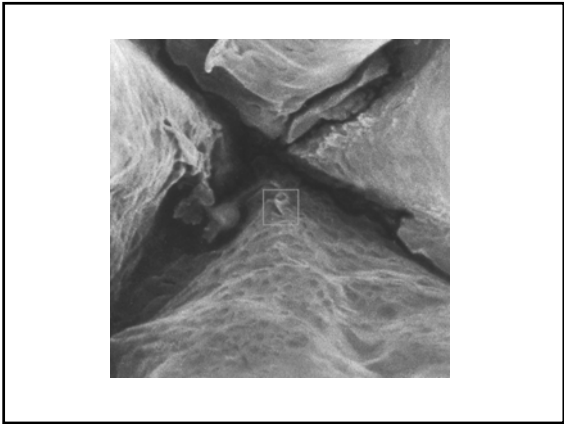




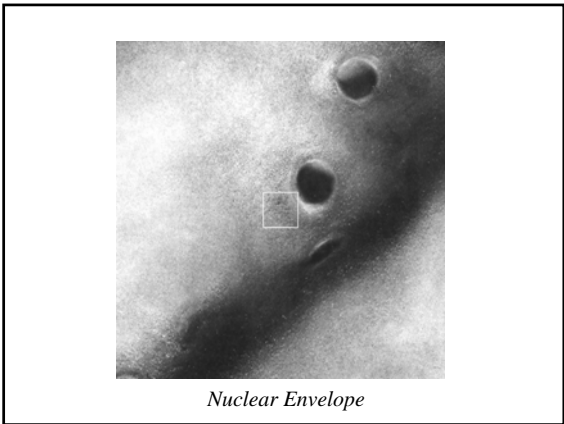


Why is this man sleeping?

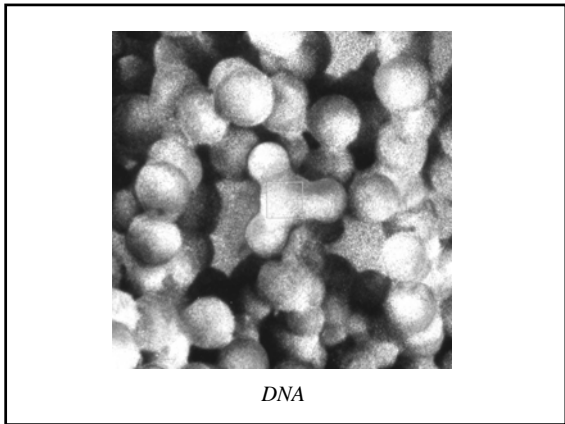




*Lymphocyte*

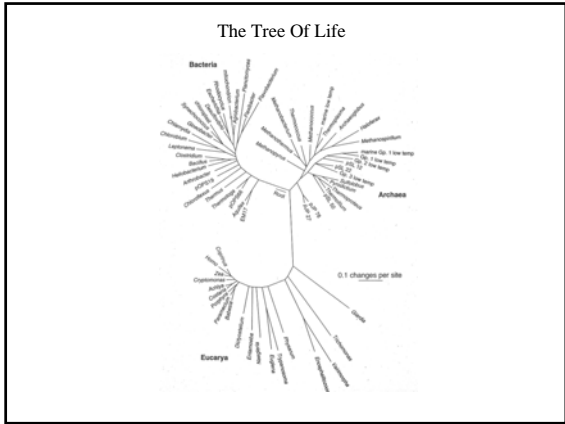


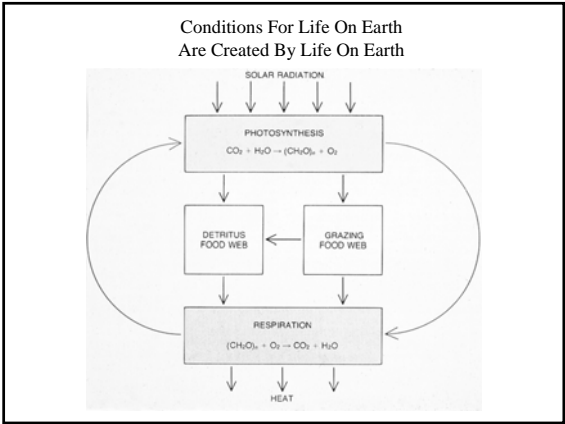
*Nuclear Envelope*



*DNA*

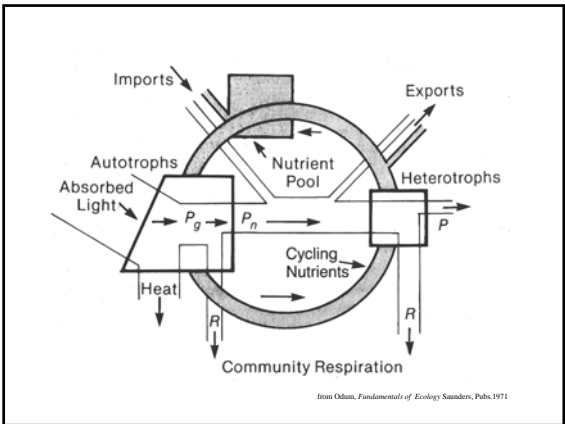
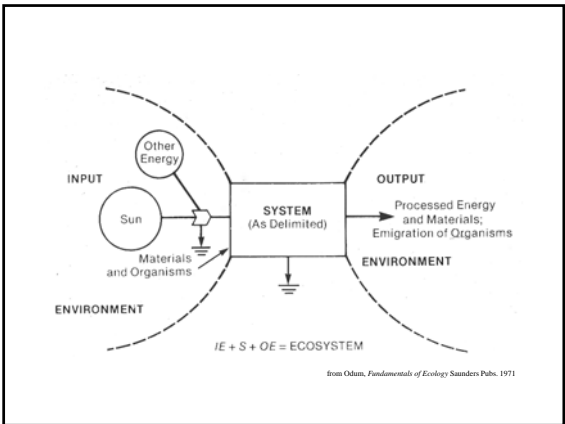
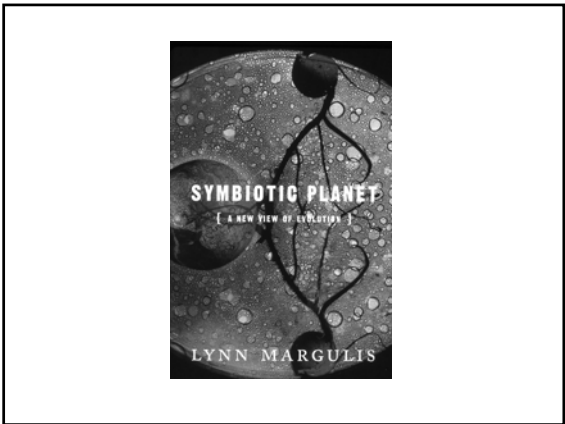
*Some General Ecological Principles*

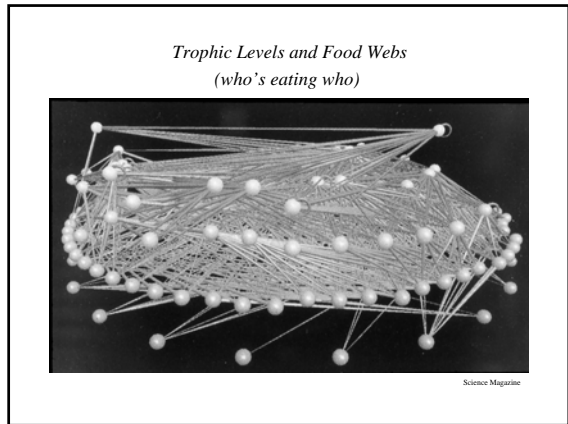
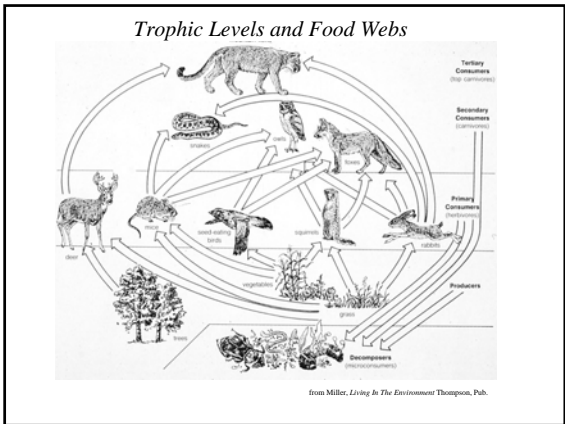
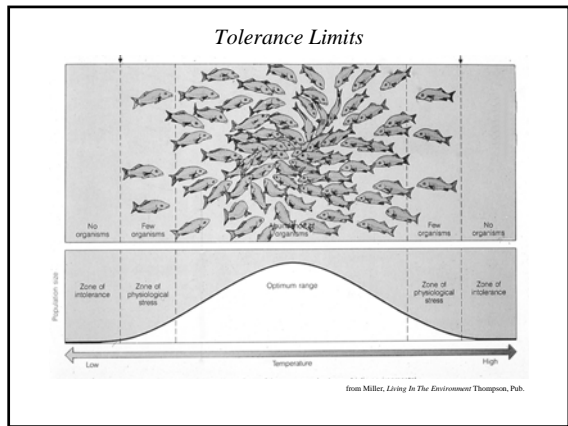
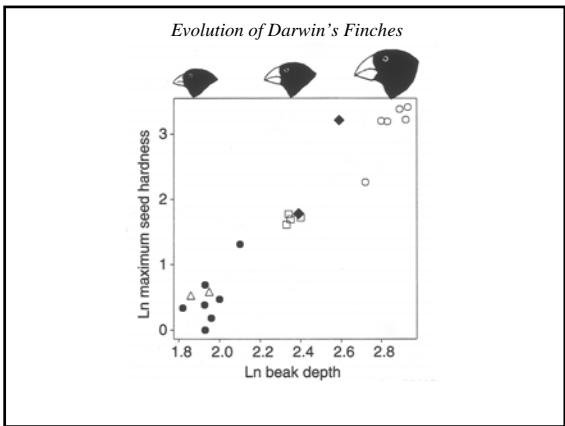
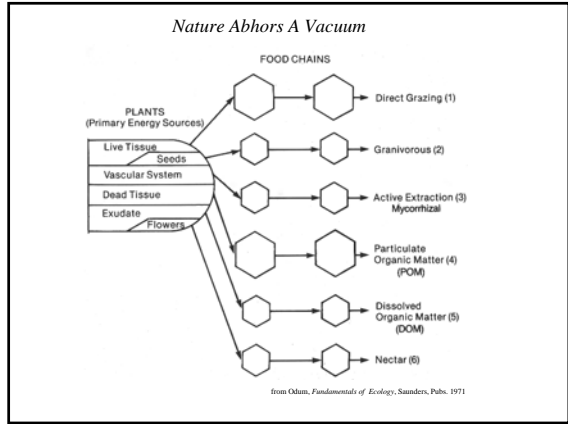
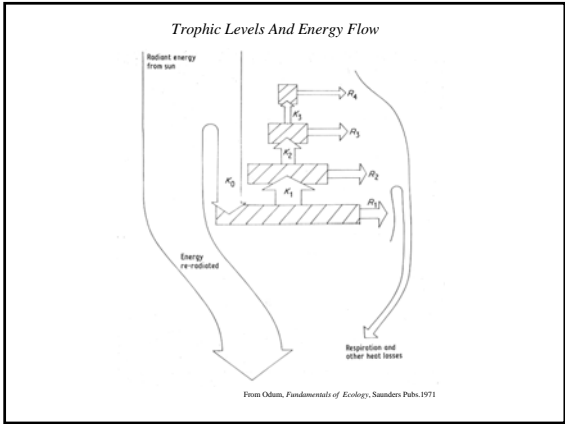




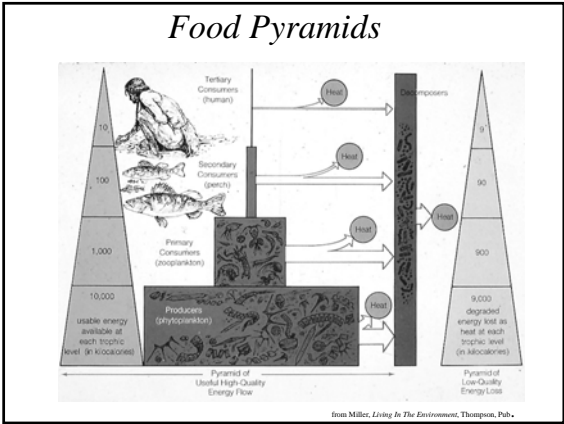
What A Radical Idea

Disturb Those Conditions And There  
Is No Telling What Might Happen!



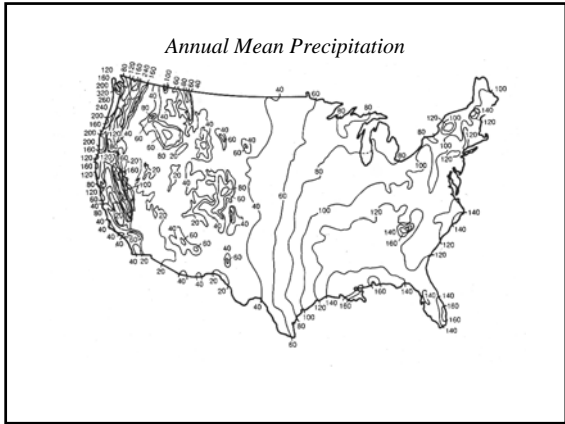
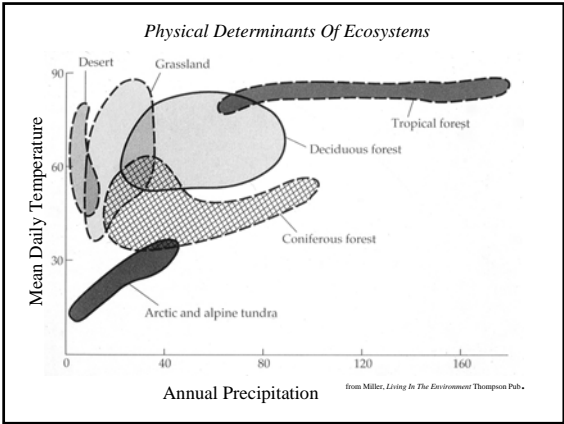
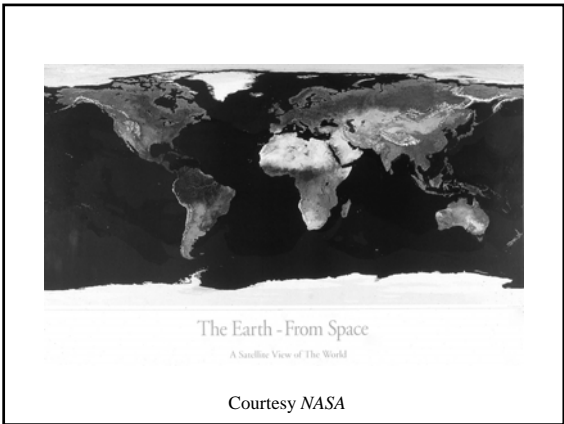






WebElements: the periodic table on the world-wide web  
<http://www.webelements.com/>

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
H	He																	He							
Li	Be	symbol										B	C	N	O	F	Ne								
Na	Mg											Al	Si	P	S	Cl	Ar								
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr								
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe								
Cs	Ba	* Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn								
Fr	Ra	** Lr	Rf	Db	Sg	Bh	Hs	Mt	Ds	Uuu	Uub	Uuq													
		*lanthanoids										La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
		**actinoids										Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No



*Ecozones*



*In the end, we only conserve what we love.  
We will only love what we understand.  
We will only understand what we are taught.*

Baba Dioum, Senegalese poet