

# The Land Organism and Gaia



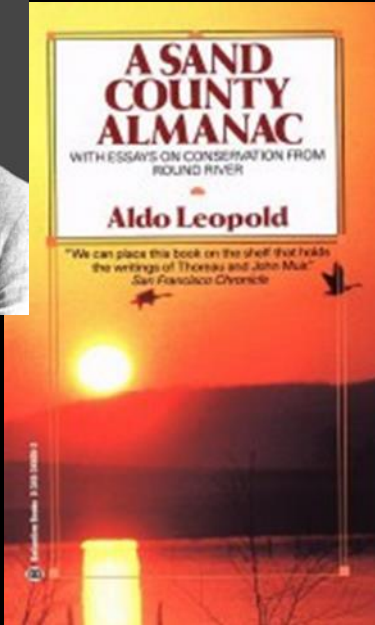
**Toward the co-evolution and advancement  
of the Land Ethic and Gaia Paradigm**



This brief slide show introduces a powerful synergy between two ideas dealing with the relationship between human beings and Earth:

**1. Aldo Leopold's "Land Ethic"**

**2. The "Gaia Paradigm"**

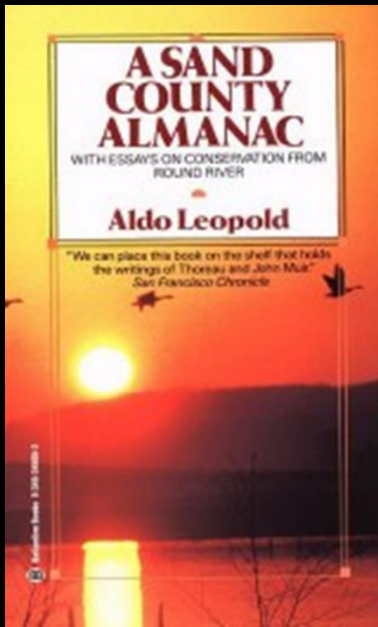


American ecologist,  
Aldo Leopold, described the

## Land Ethic

in his 1949 book:  
“A Sand County Almanac”

“In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.”



Leopold wrote:

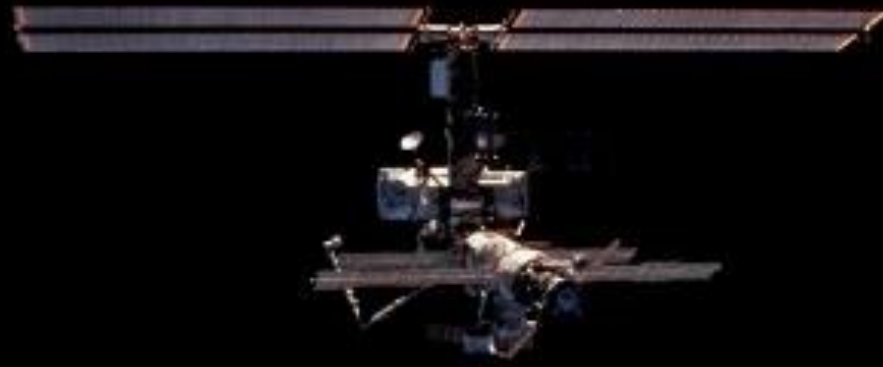
“An ethic to supplement and guide the economic relationship to land presupposes the existence of some mental image of land as a biotic mechanism.”

For about 100 years, our “mental image of land as a biotic mechanism” was informed by ecology



**Ecology** - The study of the interactions of organisms with their environment and with each other.





**In the past few decades, our understanding of what Leopold called the “land organism” has advanced by orders of magnitude.**

**This has been due, in large part, to James Lovelock’s Gaia Theory.**

# A description of Gaia Theory by Lovelock:



**“Gaia is the Earth seen as a single physiological system,**



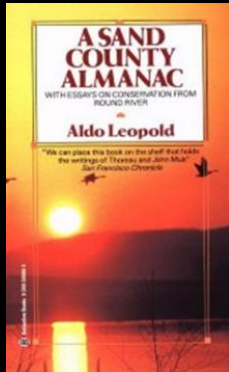
**“Gaia is the Earth seen as a single physiological system, an entity that is alive at least to the extent that, like other living organisms, its chemistry and temperature are self-regulated at a state favourable for life.”**



Gaia Theory provides a robust scientific viewpoint for us to understand the “biotic mechanism . . .”



. . . a living system in which organic and inorganic parts and processes have co-evolved as one.

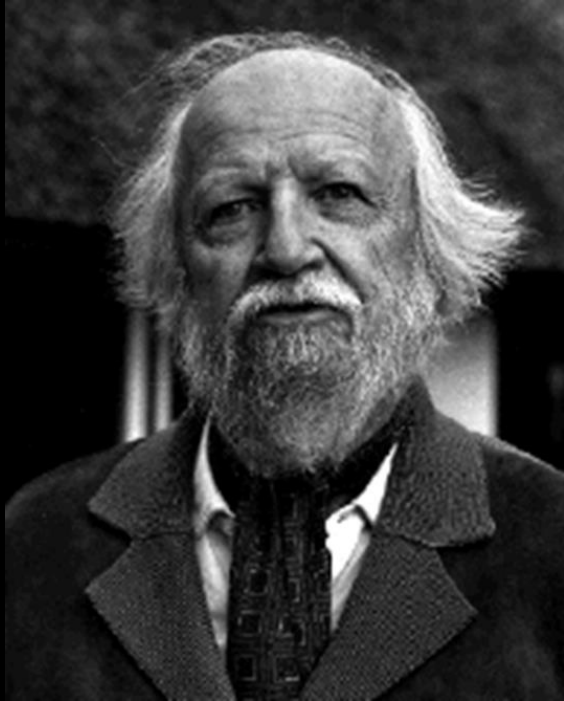


Leopold *also* wrote:

“We can be ethical  
only in relation to something we  
can see, feel, understand, love, or  
otherwise have faith in.”

Gaia Theory provides a window  
into this kind of emotional connection  
through the unique story of  
how and why it came to be so-named.

# **Golding suggested that Lovelock's new scientific idea be named "Gaia" . . .**



When Lovelock returned to England, William Golding, author of "Lord of the Flies," was his neighbor.



James Lovelock, developed his ideas about Earth while working with NASA

**“Gaia” is the Greek Goddess of Earth and . . .**



**. . . also the root  
word for**

**“Geology”**

**“Geography”**

**“Geometry”**

Golding believed that the name “Gaia” honored the fact that modern Western science was rediscovering what ancient Western tradition knew mythologically – **that Earth is alive and that we are a part of that life.**

The “Gaia **Paradigm**” can be thought of as the confluence of Gaian science (now also known as “Earth system science”) with cultural stories and understandings (ancient and new) of how human beings are part of a living Earth.

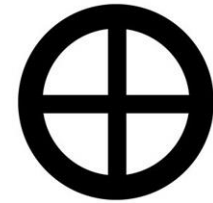


Most cultures have characterized Earth as being alive, and reflected this belief in their symbols and stories.

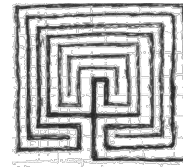


Such cultural understandings are reflected in ubiquitous circle and four directions symbols, for example.

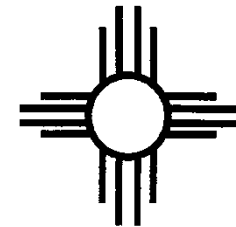
Roman Symbol for Earth



Hopi “Mother Earth” Symbol



Zia Sun Symbol

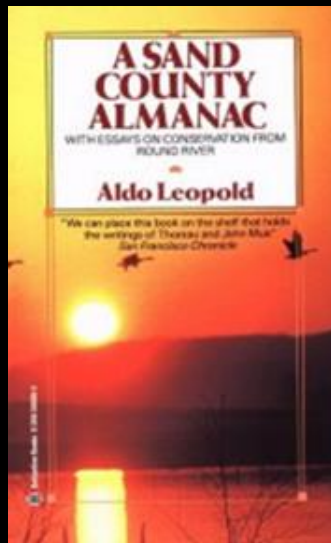


Buddhist Mandala



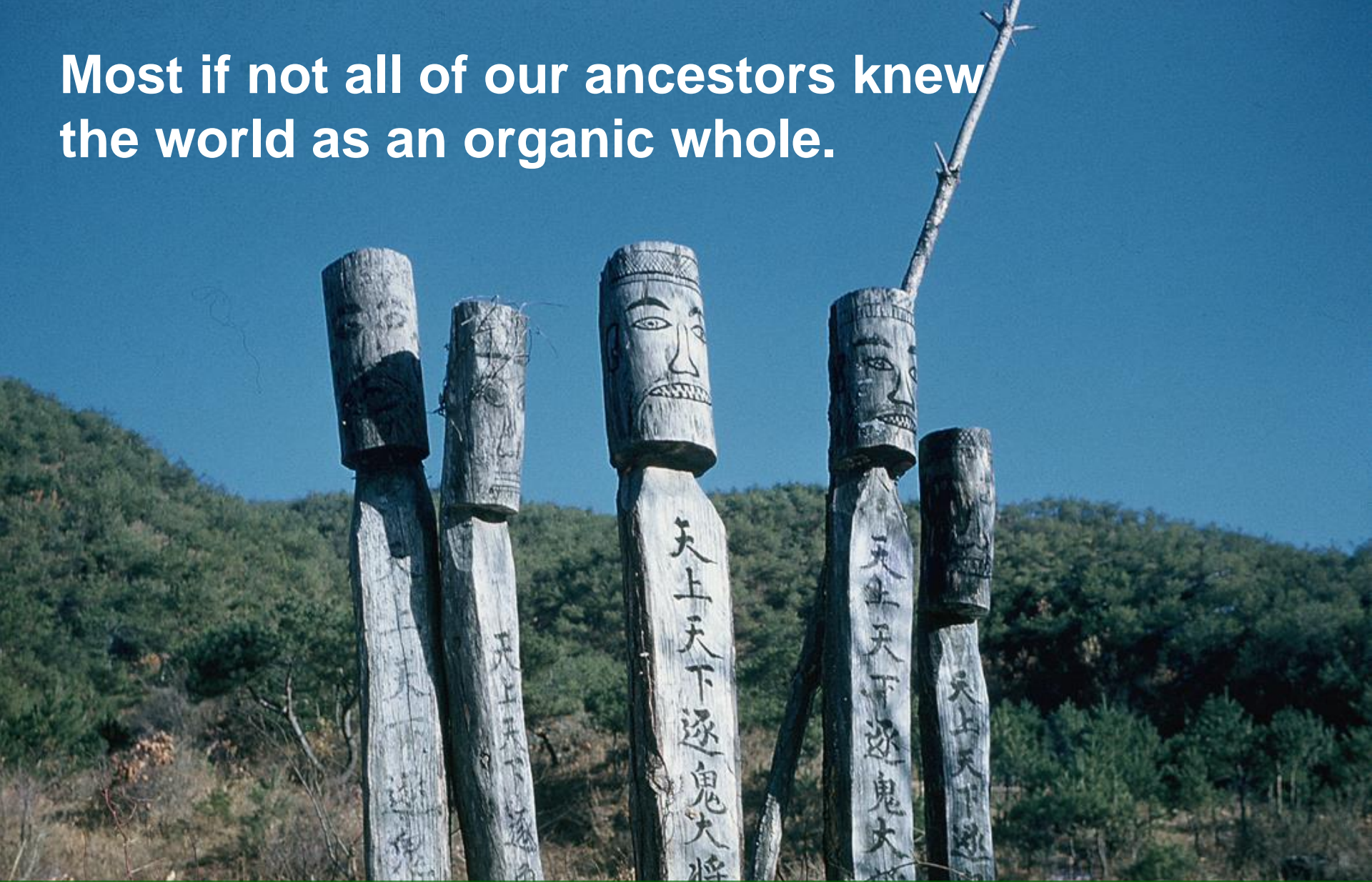
Yin Yang Symbol within Korean Flag





Leopold's Land Ethic was similarly built upon his understandings as a scientist and as a student of human behavior, economics, ethics and even Greek mythology!

**Most if not all of our ancestors knew  
the world as an organic whole.**



**Science is, indeed now re-discovering the  
wisdom and accuracy of these organic worldviews.**



We see how living systems mirror each other in form and function



Marshes

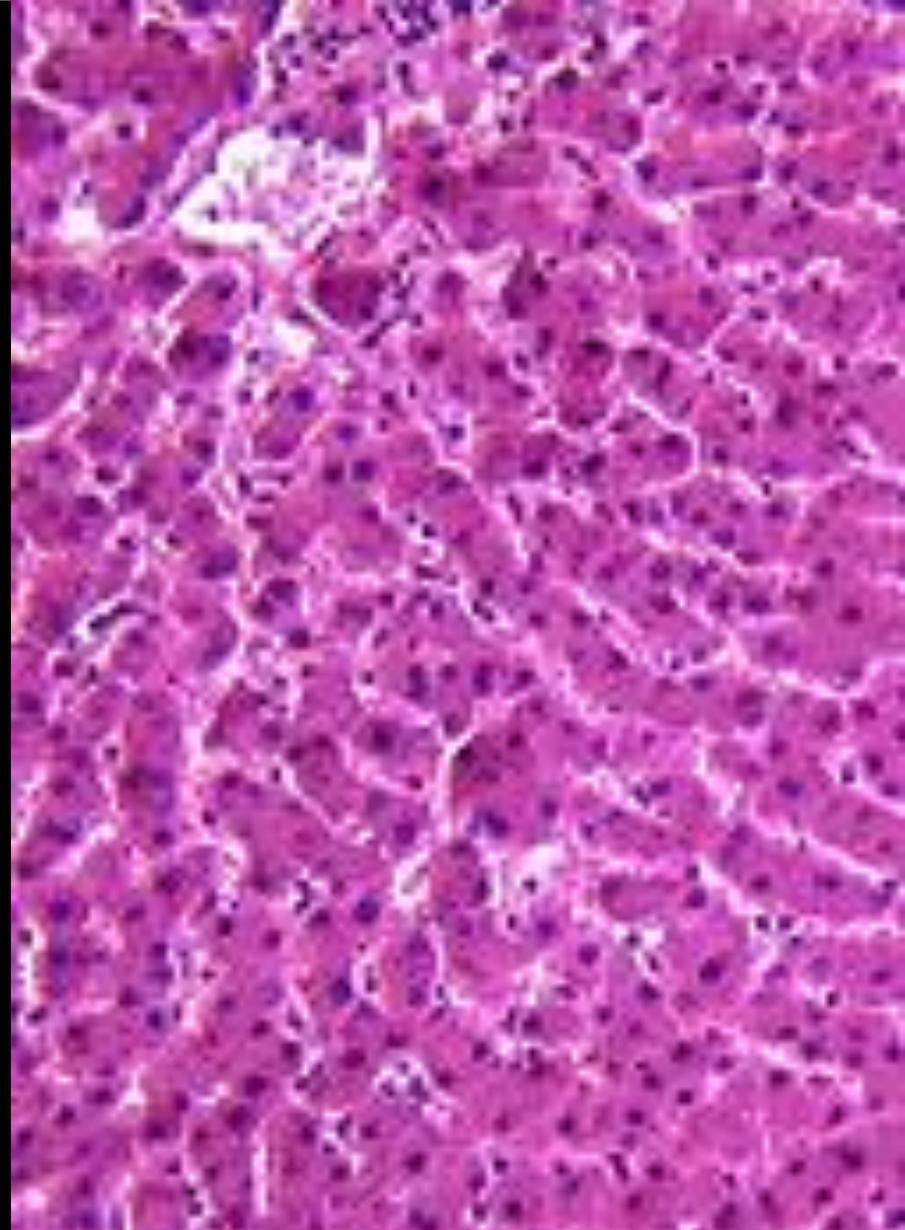


Interior of human intestine

Both absorb gasses and nutrients



Bog

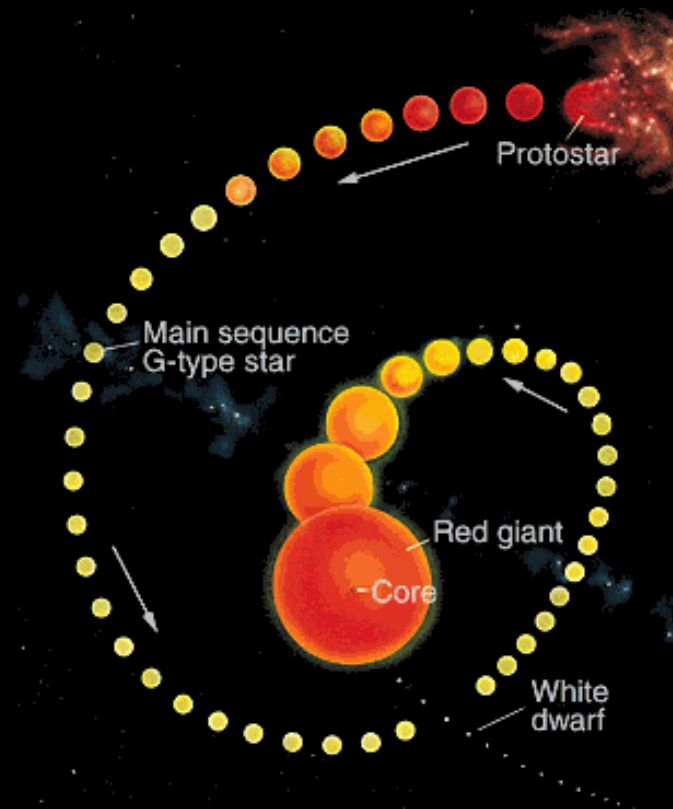


Interior of human liver

Both filter their system's fluids – water and blood



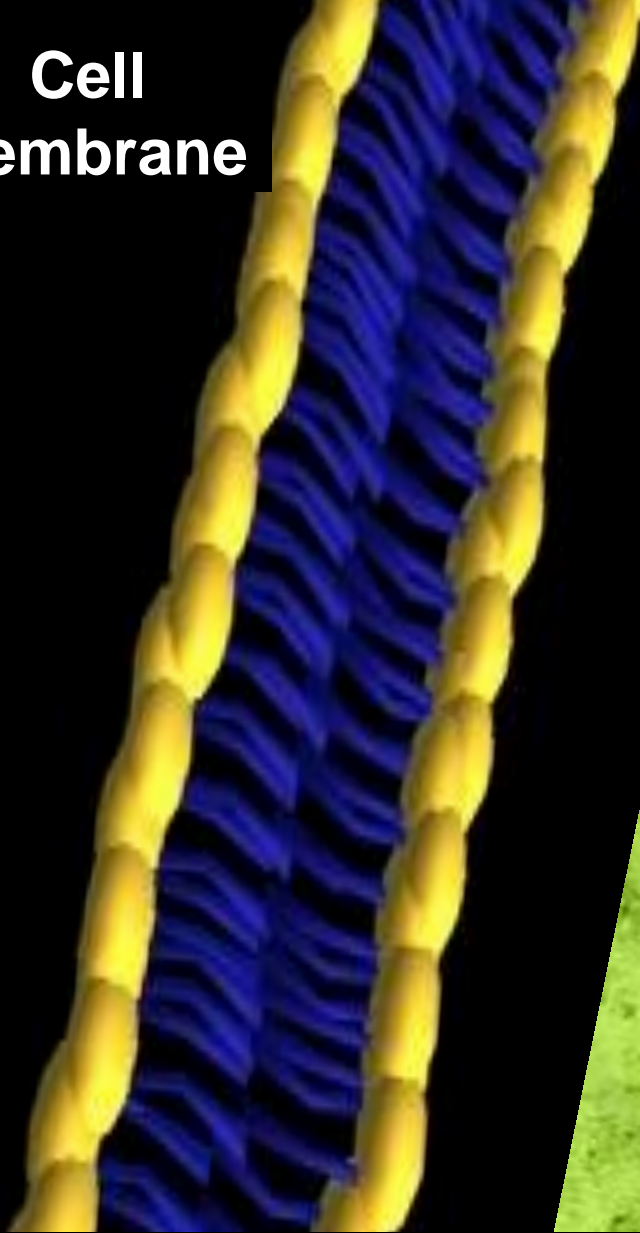
**We have discovered how life on Earth has moderated surface temperatures over the eons that our Sun has become hotter and hotter.**



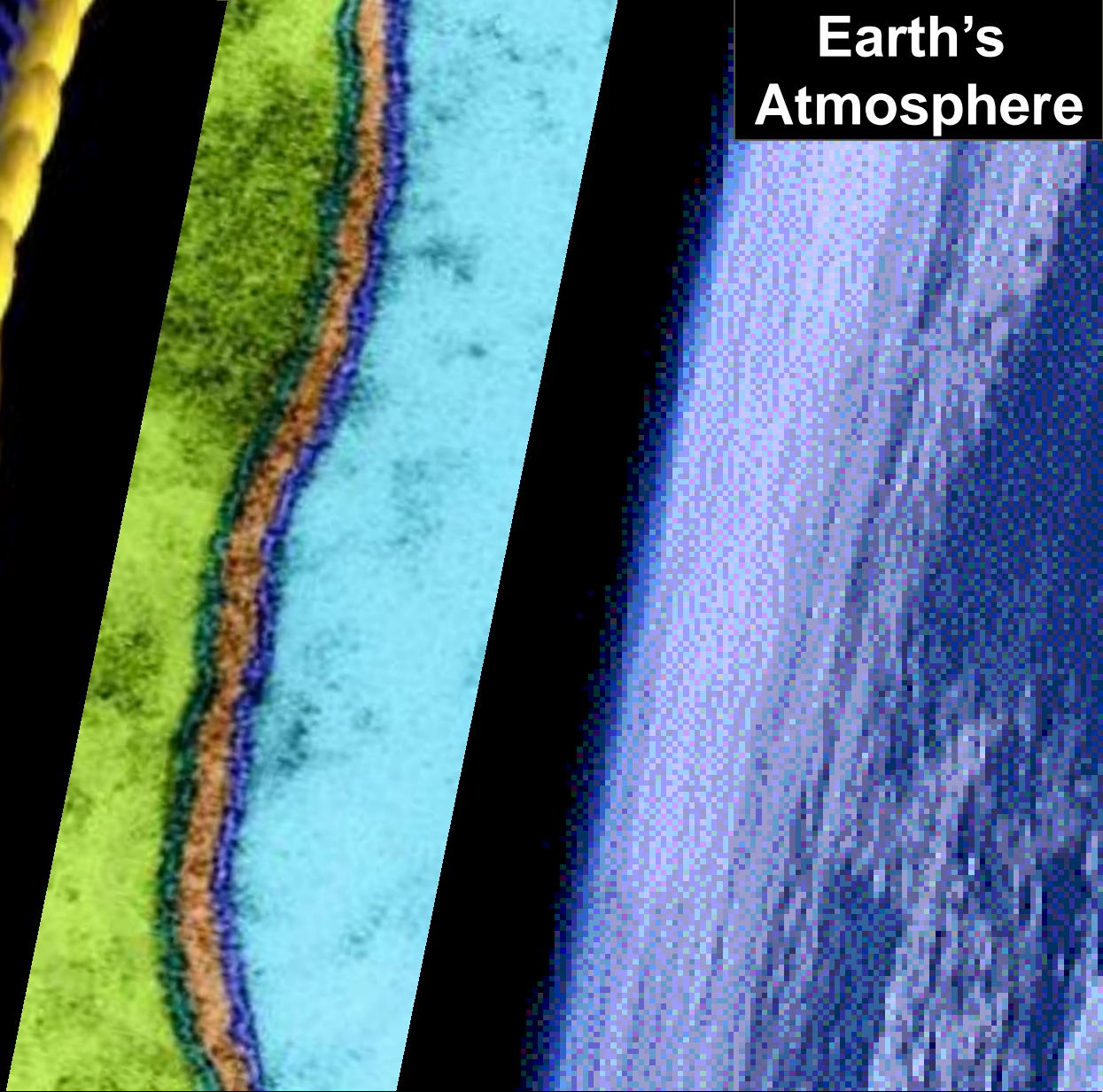
**We understand that life  
regulates the composition  
of Earth's atmosphere, thus  
affecting temperature and  
many other factors . . .**

**Earth's  
Atmosphere**

**Cell  
Membrane**



**Earth's  
Atmosphere**



**... In a manner similar to how a  
cell membrane functions.**

Leopold foreshadowed these and other understandings that were to emerge decades later through Gaia Theory.



Consider these words . . .

“[I]t is at least not impossible to regard the earth’s parts – soils, mountains, rivers, atmosphere, etc. – as organs or parts of organs, of a coordinated whole, each part with a definite function.



And, if we could see this whole, as a whole, through a great period of time, we might perceive not only organs with coordinated functions, but possibly also that process of consumption and replacement which in biology we call metabolism or growth.

In such a case we would have all the visible attributes of a living thing, which we do not now realize to be such because it is too big, and its life processes too slow.”

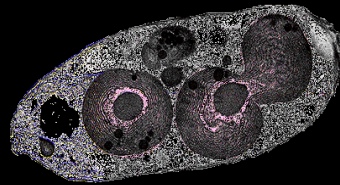


Written by Aldo Leopold, in 1923!

Published in 1979: Some fundamentals  
of conservation in the southwest.

*Environmental Ethics*, 1:131-41

**Microbiologist, Lynn Margulis, understood Earth as a living system often referring to Gaia as “Symbiosis as seen from space” . . .**



*Gaia*



**. . . She understood that this symbiosis  
includes humanity and everything about us . . .**





**. . . including governance, politics, and ethics  
and other uniquely human behavior.**



**Leopold well-understood  
this “Gaian perspective”**

“Politics and economics  
are advanced symbioses  
in which the original  
free-for-all competition has  
been replaced, in part,  
by co-operative mechanisms  
with an ethical content.”

**- From A Sand County Almanac**



“An ethic, ecologically, is a limitation on freedom of action in the struggle for existence.

An ethic, philosophically, is a differentiation of social from anti-social conduct.

These . . . are two definitions of the same thing.”

- From A Sand County Almanac

**This portends the critical  
question of our day!**

**Will our stories, symbols and metaphors,  
and the political directions that stem  
from them – imbue a sense of limits?**



# **Together, the Gaia Paradigm & The Land Ethic**

**elevate an understanding of the  
importance of this question  
and how to address it . . .**



**Both of these concepts are  
based on an understanding that . . .**

**. . . our minds and behavior are a  
seamless continuum of Earth's living system.**







“Ethics are possibly a kind of community instinct in the making.”



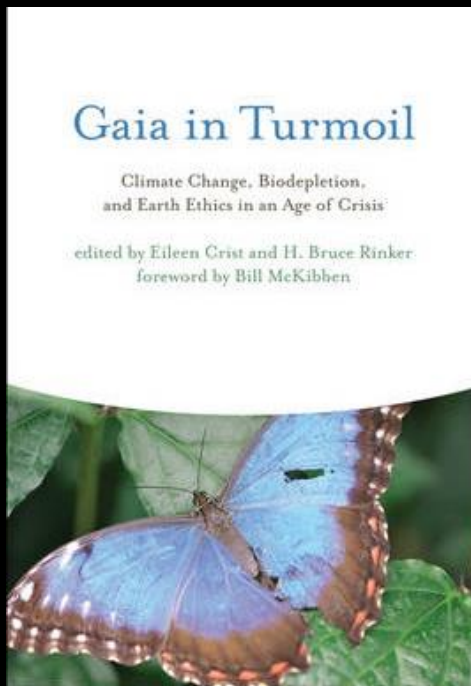
## Together, the Land Ethic and Gaia Paradigm can:

- Synergistically advance each other's knowledge & wisdom
- Reveal new ways of understanding and flourishing within the imperative of limits.

# For more information on Gaia Theory

See [www.GaiaTheory.org](http://www.GaiaTheory.org)

## And read:



### Gaia in Turmoil

✓ MIT Press 2009.

✓ Opening chapter by James Lovelock

✓ Foreword by Bill McKibben.

✓ And a Chapter by J. Baird Callicott:  
“From the Land Ethic to the Earth Ethic:  
Aldo Leopold and the Gaia Hypothesis”

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This slide show is dedicated to Cyrus & Linnea