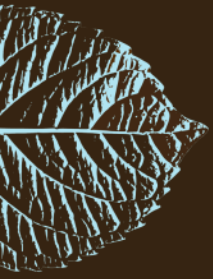




Design in the Ecological Crisis



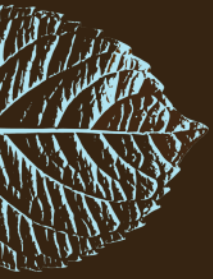
Okala Practitioner Introduction



What is Okala Practitioner?

Okala Practitioner is a guide for designers from many disciplines to understand how to design more environmentally friendly products and services.

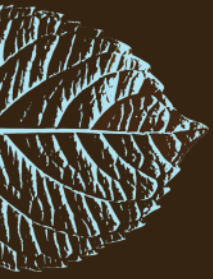
This series of Okala presentations offer an introductory course for students of the design disciplines.



What is Okala?

Okala (oqala) means “life sustaining energy” in the indigenous Hopi language. Okala honors the Native American tradition of respect for the natural environment.

Okala envisions a future where humans recognize the value of the global ecology and where humans work to insure its protection.



Goals of Okala

- Increase understanding of the significance design in the global ecological crisis
- Impart a thorough understanding of ecological impacts and methods to evaluate the ecological performance of any product system
- Prepare designers with an ability to integrate ecological design strategies with strategic business and market planning
- Inspire practicing designers to use this inclusive design process

Our Stressed Biosphere

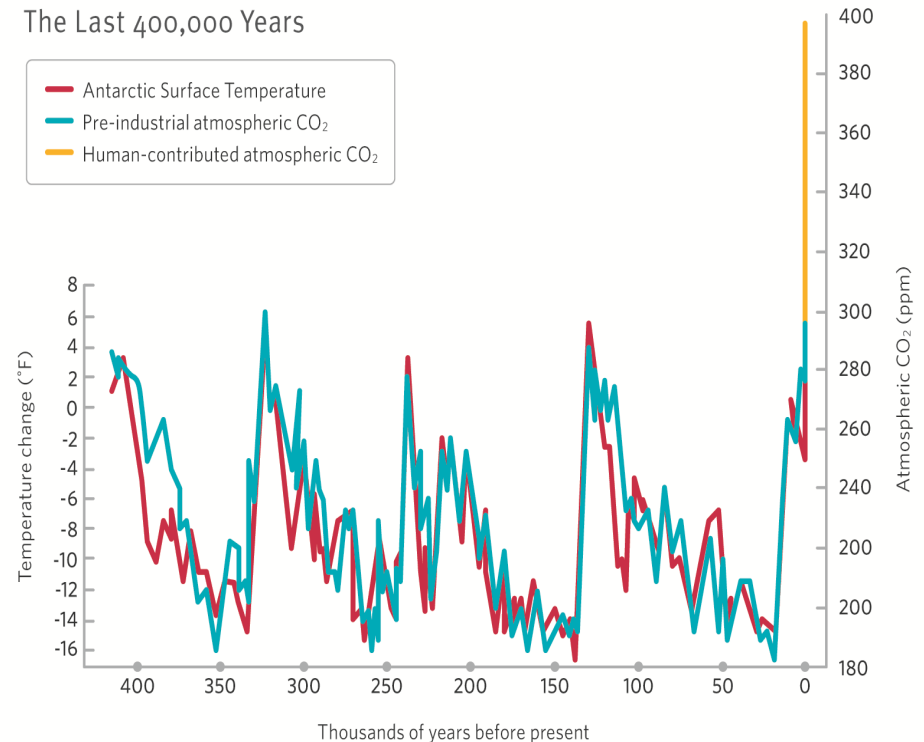
Human population will grow from 7 billion to **9 billion** by 2050, with most of the growth occurring in populations with low-incomes.

The average global temperature averaged 59.4°F in 1970 and 61°F in 2012. The atmospheric carbon dioxide (CO₂) concentration increased from 326 PPM to 394.4 PPM in this period.

The maximum level most scientists calculate it should be is 350 PPM for a stable climate.



The Last 400,000 Years

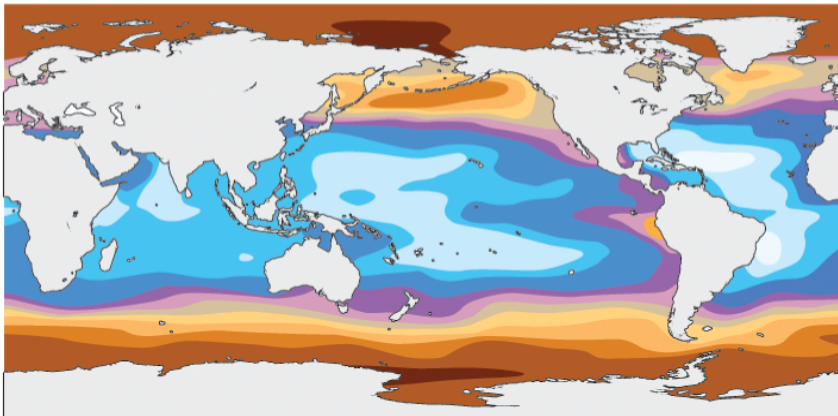
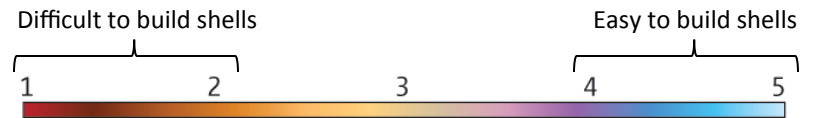


Our Stressed Biosphere

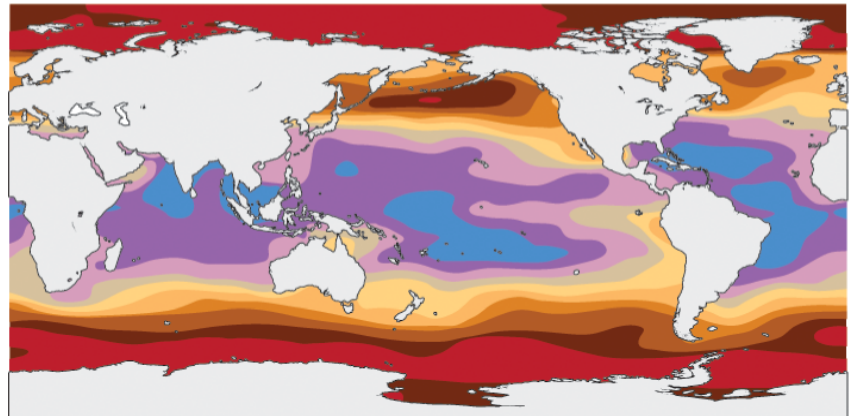
Underground aquifers are being depleted for 500 million dependent people.

The 1950-2010 oceanic fish harvest grew from 19 to 105 million tons, resulting in major declines of many species.

Increased atmospheric CO₂ acidifies the oceans which makes it more difficult for sea invertebrates, such as corals, to build shells.



280 PPM CO₂

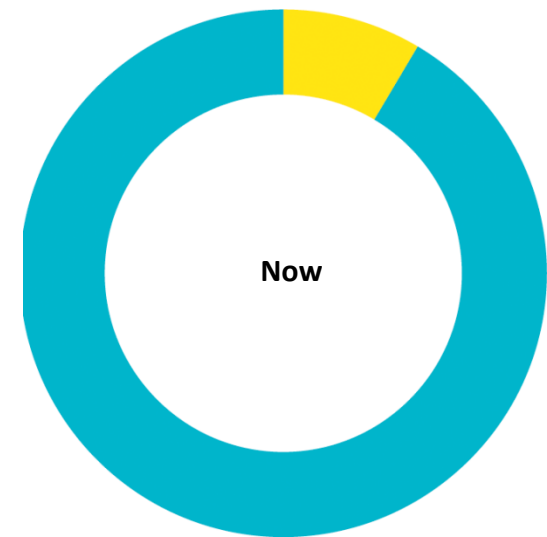
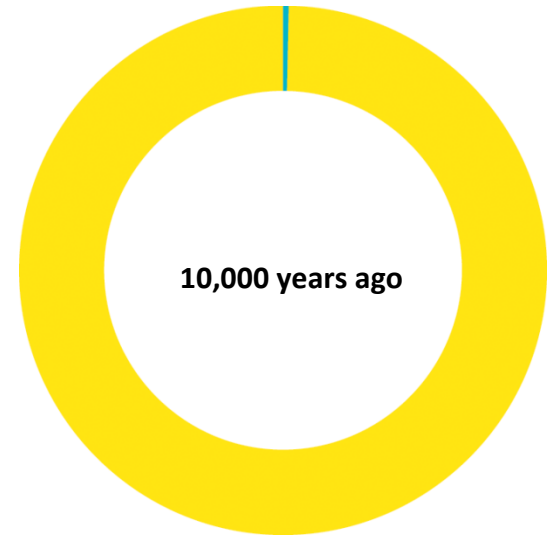




450 PPM CO₂

Our Stressed Biosphere

Arable cropland demand is converting forests to land used for non-biologically diverse crop species.

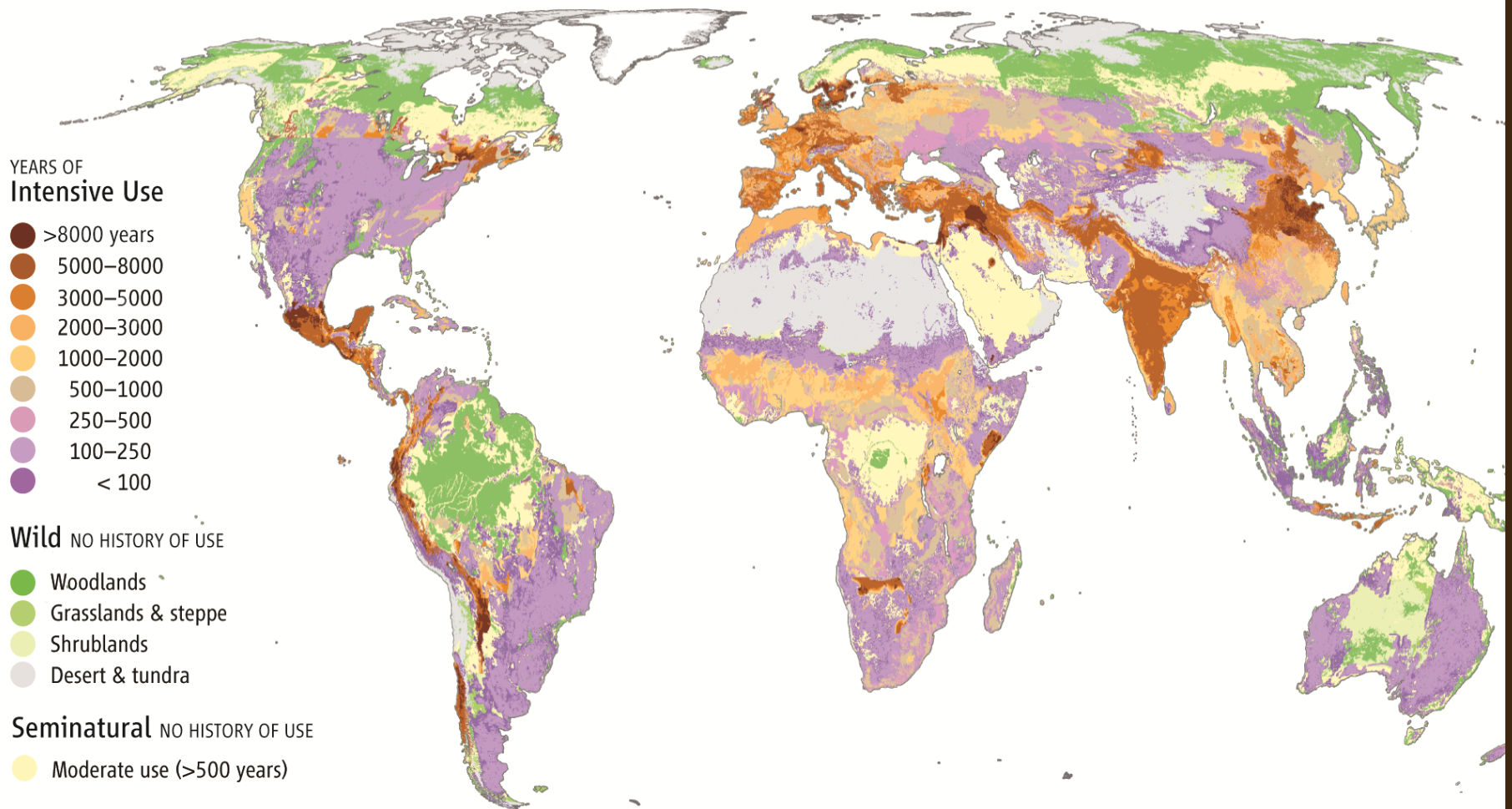
The total percent of mammalian biomass comprised of humans and domesticated animals on the planet has risen from **0.1%** 10,000 years ago to **90%** today.



-  Percent of humans and domesticated animals in all mammalian biomass
-  Percent of wild mammals in all mammalian biomass

Our Stressed Biosphere

Areas converted from wild land to cultivated land over the past 200 years (in violet) have consumed 80% of all lands that can be farmed.

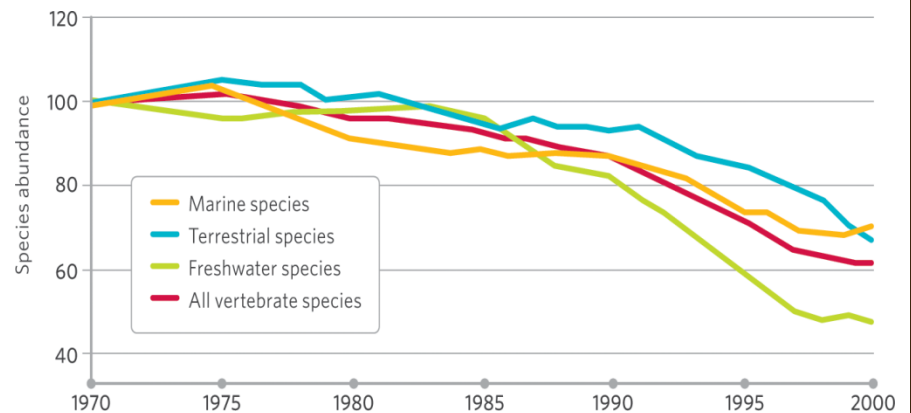


Our Stressed Biosphere

Nearly **half of the world's old growth forests are gone.**

11% of all birds, 25% of all mammals and 34% of all fish species are on endangered lists. 50% of all tropical plant species are at risk of extinction*. The cause is destruction of habitats from human interference, pollution and climate change.

* www.news.bbc.co.uk/1/hi/sci/tech/2385591.stm



A world village

If the global population were reduced to a scale of 100 villagers*:

47 live on less than \$2.00 per day

41 lack access to basic sanitation

17 are unable to read

13 suffer from malnutrition

4 are internet users

2 have a college education

* www.populationconnection.org



Discussion:

Environmental Crisis & Design

Can you name a few of the environmental impacts created by the design disciplines?

Discussion:

Environmental Crisis & Design

What criteria do we *currently* use to measure the value of a successful product or system design?

Discussion:

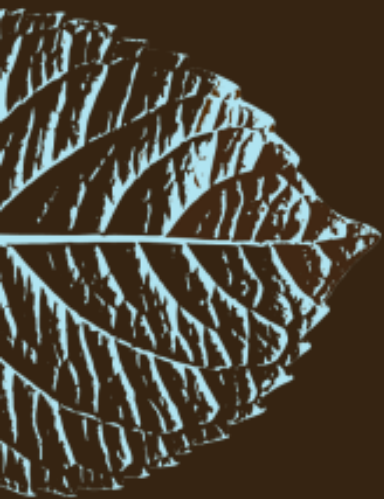
Environmental Crisis & Design

Who should take responsibility for the environmental impacts created by products and product systems?



**“What you people call your natural resources,
we call our relatives.”**

-Oren Lyons, Faith keeper of the Onondaga



Okala Practitioner

Integrating Ecological Design

This presentation is part of an educational presentation series that supports teaching from the *Okala Practitioner* guide.

Okala Practitioner and these presentations were created by the Okala Team to disseminate fact-based knowledge about ecological design to the design disciplines and business.

Unless provided in the presentations, Information sources are found in the *Okala Practitioner* guide.

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The Okala Team initiated the collaboration with the US EPA and the Industrial Designers Society of America (IDSA) in 2003. The team developed *Okala Practitioner* with support from Autodesk, IBM, Eastman Chemical and the IDSA Ecodesign Section.

Okala Practitioner is available through amazon.com.

More information and the free Okala Ecodesign Strategy App are found at Okala.net.

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