



# *Sustainability*

Lakeland Community College



## PEOPLE, PLANET, PROSPERITY

# Sustainability In A Nutshell

Presented by: Susan Walker-Meere Department for Facilities Management

<http://lakelandcc.edu/web/about/sustainability>

# WHY?

1) First, agree **WHY?** we need to act.

Positive, long-term success for all  
humans on a healthy planet.

We would like humans and all living  
systems to flourish.



# Global Issues

## Climate Change Disturbances and Greenhouse Gases



Photo By Daniel Acker/Bloomberg



Photo By Scott Olsen/Getty Images

# DESTRUCTIVE



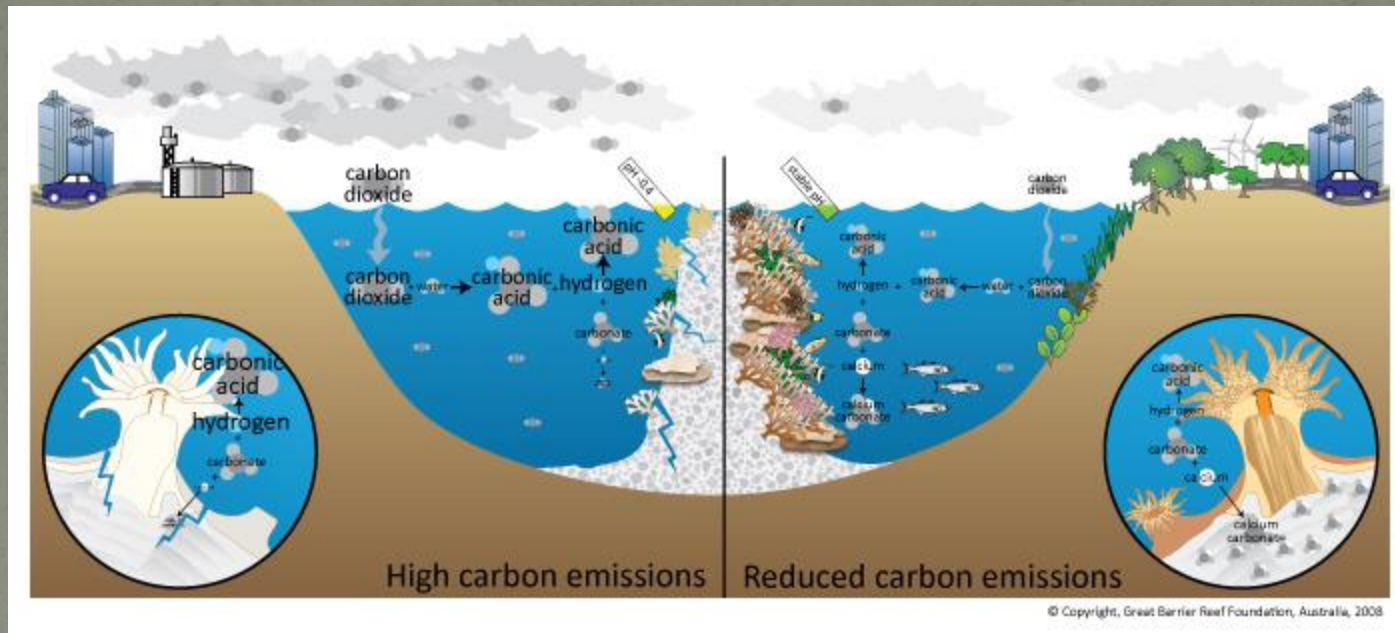
Photo By NASA



Photo By Reed Timmer/Science Lab



# Ocean Acidification and Over-fishing



# DESTRUCTIVE

## Global Issues

Negative Consequences of Contemporary Human Products and Processes

### Oceanic Garbage Patches



Landfills &  
Waste of Resources

POLLUTION

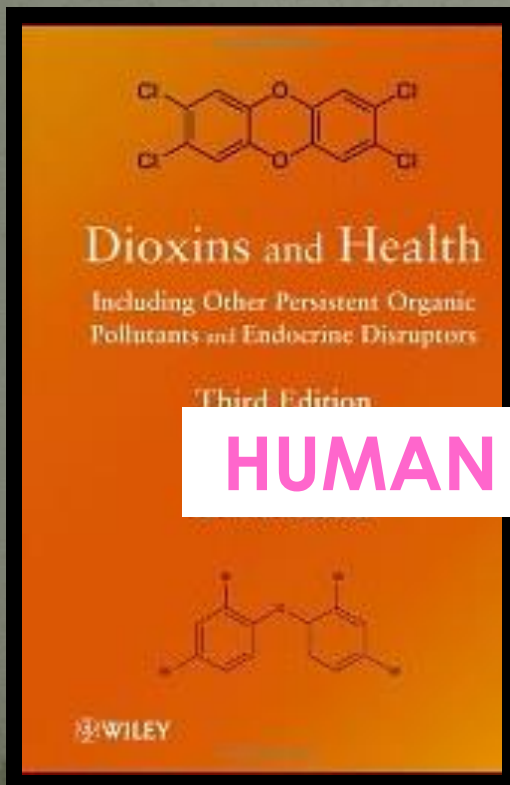


# Global Issues

Negative Consequences of Contemporary Human Products and Processes (Externalized)



**ENVIRONMENTAL DAMAGE**



**POLLUTION**

**HUMAN HEALTH & WELLNESS**

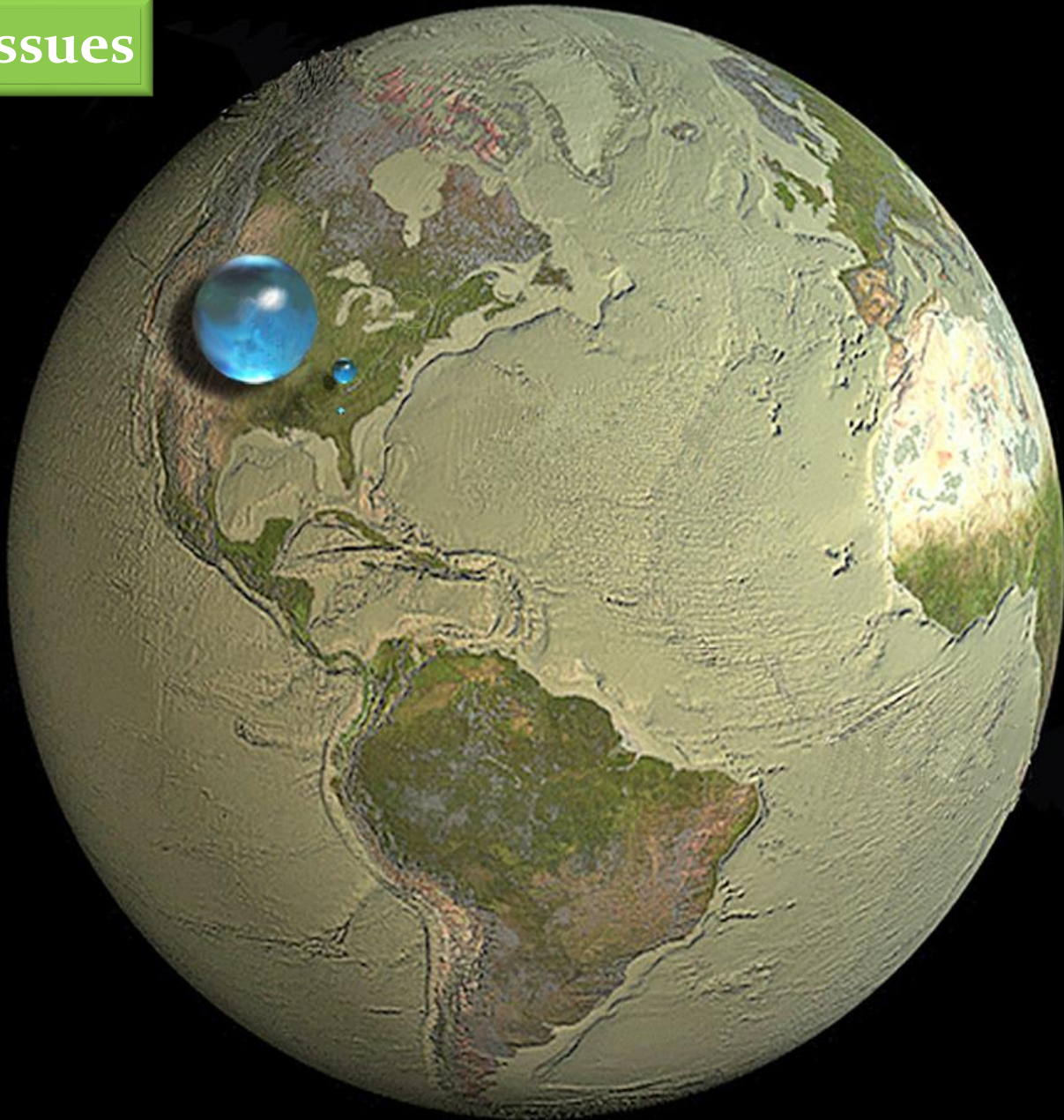
Eureka (2014): Hazards associated with plastics in the environment in summary.





# Global Issues

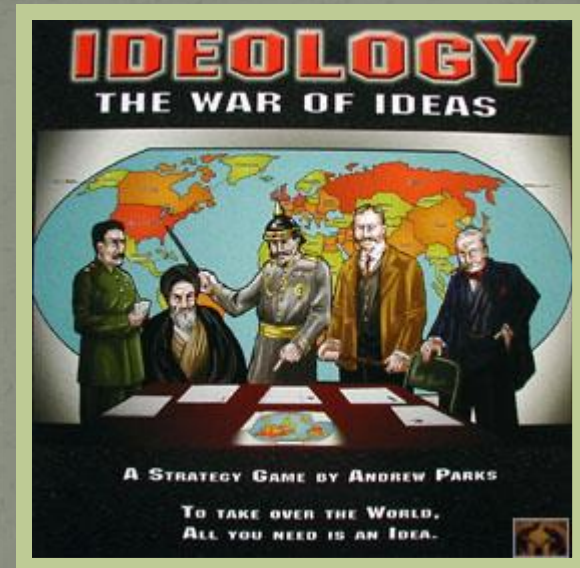
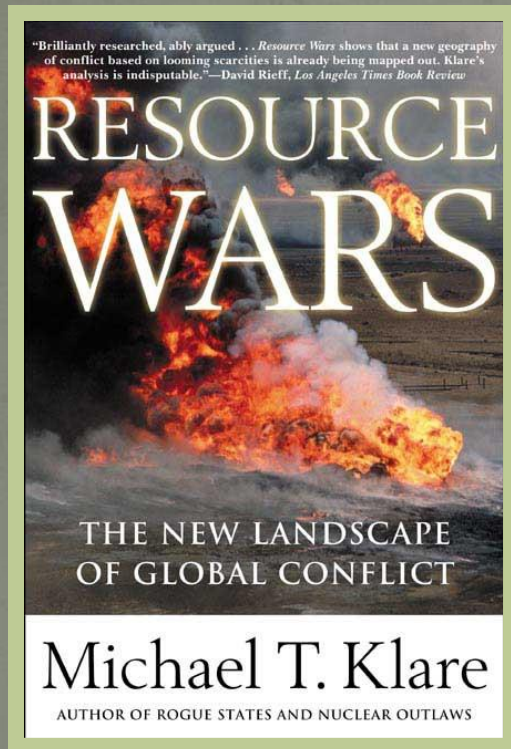
## Water





## Global Issues

### Negative Consequences of Contemporary Resource and Ideology Conflicts



Societal, Environmental & Economic  
Devastation , Disruption & Despair

# CONFLICTS



## Global Issues

Negative Consequences of Contemporary Individual Stress and Insecurity



'**Depression** is one of the most significant public health problems facing the world in the 21st century.' ~ *The Economist*  
November 2014



**Water Security**

**FOOD  
SECURITY**



**STRESS & INJUSTICE**



**Labor Inequality**



# WHAT?

2) Second, **WHAT?** is sustainability?



# Sustainability

- Historically, the term “sustainable” was defined in relation to only environmental concerns.
- However, it is ***increasingly recognized*** that sustainability cannot be achieved without addressing **social, economic, environmental & cultural** systems and issues that arise within and between them.



# Sustainability Defined

## The Brundtland Commission -1987

Sustainability is the capacity 'to meet the needs of the present without compromising the ability of future generations to meet their own needs'.

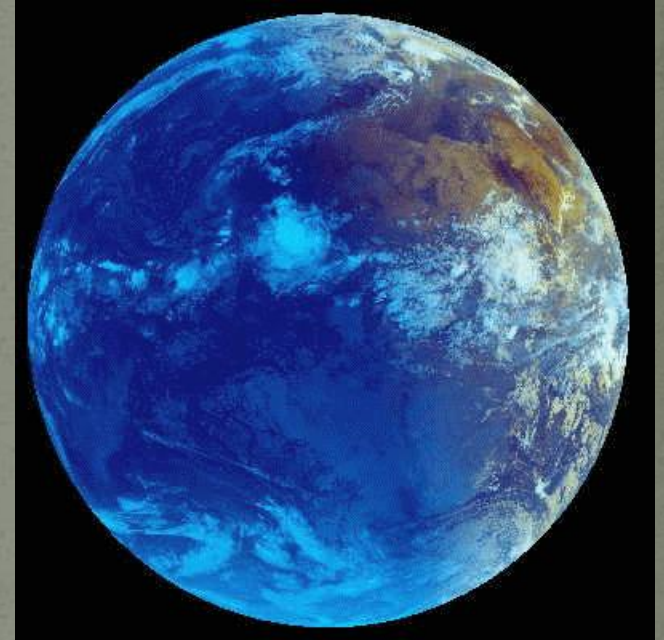
## Sustainability at Lakeland!

**Sustainability can prevail with a global culture that: protects and preserves the environment, develops strong and peaceful relationships, while maintaining flourishing and just economies and societies.**

- Understanding the inextricable relationship between diverse human cultures and natural systems
- Understanding the interconnections between economy, society, environment & culture
- Seeking equitable opportunities for livelihood and equitable distribution of resources
- Conserving resources, preserving and renewing natural systems

# Sustainability

- ❖ Looks at the **interconnectedness** of **Human Beings and Nature**.
- ❖ Seeks to balance **Society** People  
**Environment** Planet  
**Economy** Prosperity



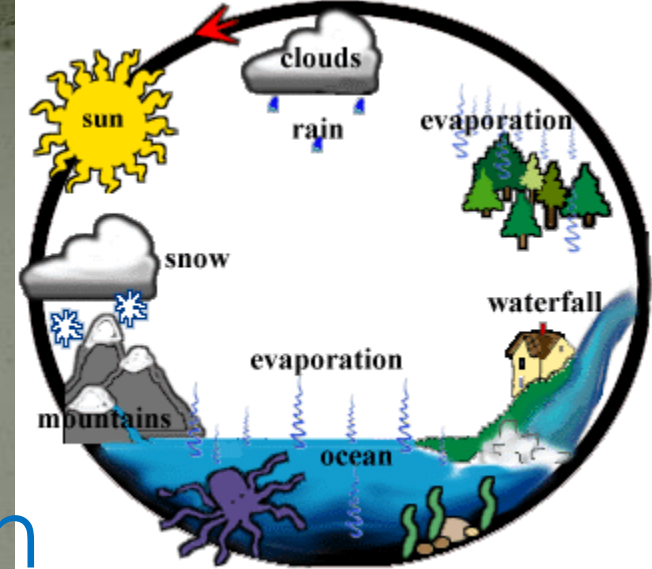
It is gained by building human cultures that make decisions that insure positive, long-term success for all.



# HOW?

3) Third, **How?** do we accomplish it?

# SYSTEMS THINKING



## The Planet Earth

—a *biosphere* composed of *dynamic relationships* between all living and non-living things that *interact with each other*.

### Ecosystems

relationships between living things (including humans) and their environment

The Air, Land & Water

called the 'Commons': Ecosystem Services

Soil Systems, Hydrologic Systems, Food Web Systems, Jet Stream and Gulf Streams, Tectonic System, Volcanic System

### Human Systems

Social Systems

Economic Systems

Food System, Water Systems, Sewer Systems, Highway & Transit Systems, Political & Geopolitical Systems, Monetary Systems, School Systems, . . .the Immune System, Digestive System, Neurologic System, Endocrine System



Sustainability is about *interconnected systems*



*dynamic relationships* **in** *interconnected systems*

RESILIENCE

ADAPTABILITY

OPENNESS

PRESERVATION

DIVERSITY



# People

Social Sustainability

Individuals, Families, Communities,  
Regions, Countries



DIVERSITY

- Humans & Nature
- Human Health & Wellbeing
- Conflict (both resource & ideological)
- Gender, Race & Religion
- Human Rights & Social Justice
- Population
- Consumption & Production
- Political Accountability to Sustainable Outcomes

Multiple References: Andrews et.al. & MacDonald

# Planet

Environmental Sustainability

## The Effects of Human Development on

- Human Health
- Environmental Health

The Planet – a complex system

Clean Air

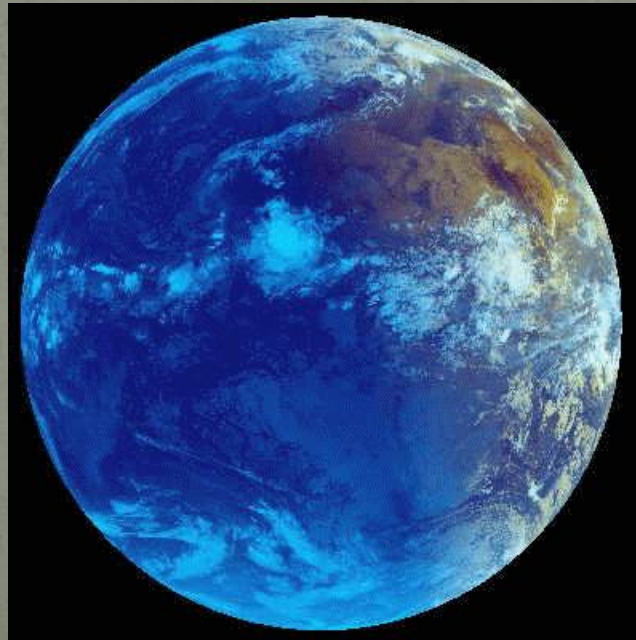
Fertile Land

Clean Water

Biodiversity

Human Created Impacts

There is a growing requirement for cleaner & safer processes and products that look at lifecycle and externality threats.





# Prosperity

Economic Sustainability

The Means of **Production**, **Distribution** & **Consumption** of Goods & Services

(Greek) The Management of the House

The Bottom Line = Profits (Prosperity)

- Raw Materials (Resource Conservation and Equitable use of the Commons, Extraction Impacts)
- Labor (Safety & Equitability through the Supply-Chain)
- Life-cycle Analysis (Recycle)
- Externalities (The long-term Environmental & Social impacts associated with all products and processes.)
- Corporate Social Responsibility (Corporate/Industrial responsibility to Sustainable Outcomes.)



The Triple Bottom Line  
**People** \* **Planet** \* **Prosperity**

Multiple References: MacDonald

# Aesthetics

Cultural Sustainability

*Everybody needs beauty as well as bread.*

— John Muir, *The Yosemite*, 1912

*“Aesthetics is not a luxury, but a universal human desire.” -Virginia Postrel*

- Reflects and interprets human culture & nature
- Connects humanity
- Dialogs about individual, community & global issues and experiences
- Art, Music, Poetry & Prose, Film, Architecture . . .





# Rescue on the Collapsed Freeway, Oakland, CA 1989

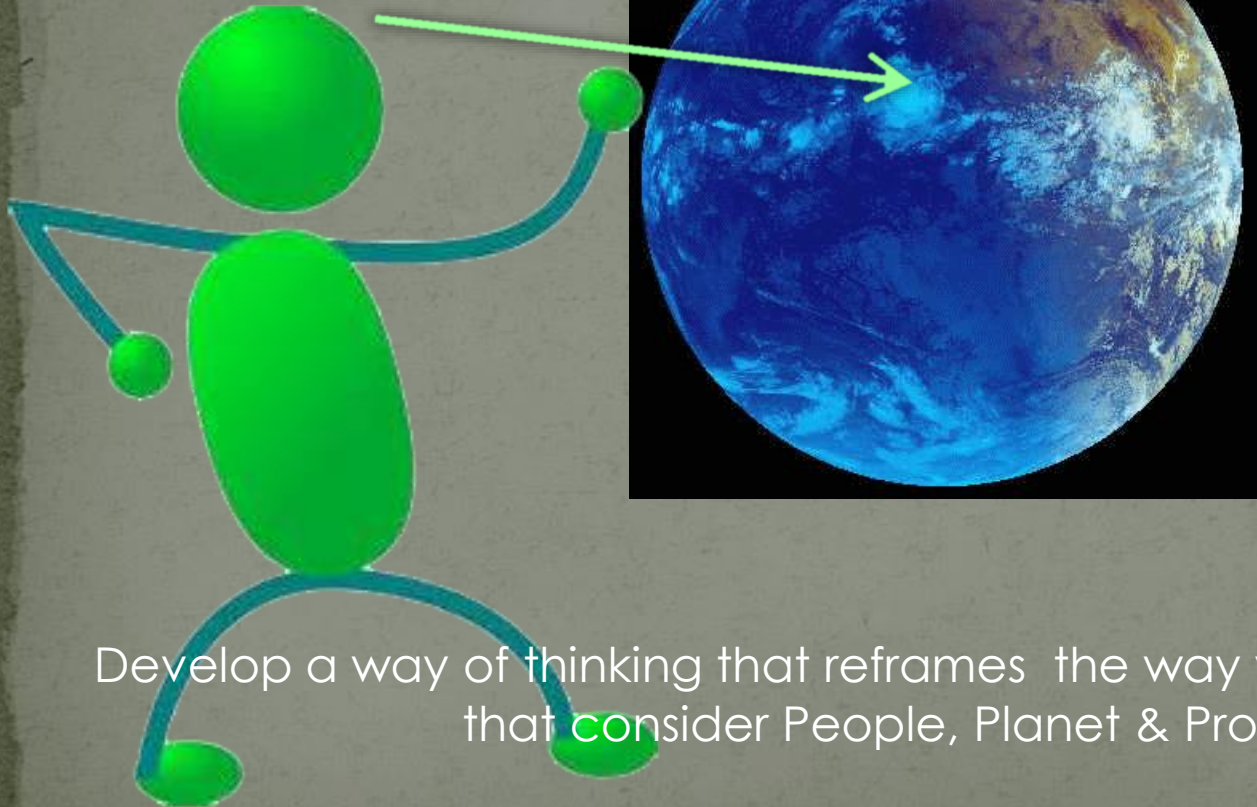
Michael Macor – (USA)

Ordinary people doing  
extraordinary things.



# What Does This Mean for Us?

You Are Here



Develop a way of thinking that reframes the way we make our decisions that consider People, Planet & Prosperity.





Systems Thinking

# THE GREEN REVOLUTION: chemicals in agriculture

- Neonicotinoids – a class of pesticides that disrupt the nervous & navigation systems in bees.
- Implicated in:  
‘Colony Collapse Disorder’



• Bateson (1972:500) Ad Hoc solutions : short-term and detrimental!





# ORGANIC GARDENS

**Aphid** + **Oak Leaf**=**Honey Dew**= Bees Food. (Bees pollinate)

- Bateson (1972:177-193):  
Framing – a concept  
which suggests a need to  
include whole systems &  
relationships.







# ORGANIC GARDENS

Aphid + Oak Leaf=Honey Dew= Bees Food. (Bees pollinate)

- Industrial Agriculture's Frame: spray pesticides kill the 'pest' **APHID**.

- Inadvertently alters an integral synergistic relationship – a downstream and long-term effect of a short-term Ad Hoc solution!

This is man undoing the built-in checks and balances that keep species within bounds. (Carson, 1962 pg. 20)





# HOW DO WE DO ... *Sustainability* at Lakeland?

1. We **apply the principles of Sustainability** to help guide efforts that offer positive, campus wide benefits to the Students, Staff, Faculty and Community.
2. By creatively designing **system efficiencies** we save money and support a healthy community. Using **advanced technologies** wisely.
3. We realize that sustainability is a dynamic process so we are **open to new opportunities** that will better our community, our environment and our economy.
4. We **measure and assess** initiatives noting successes, identify challenges, sharing and comparing with other intuitions and ultimately teaching by example and from experience.





HOW DO WE DO . . .  
*Sustainability* at Lakeland?

Lakeland is a Member of:



**Sustainability  
Tracking  
Assessment & Rating  
System**

To assess, rate and share practices with over 800 other colleges.

Apply, Measure & Assess



- **The Sustainability Tracking, Assessment & Rating System™**
  - 1) (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance.
- **Divided into areas:**
  - 1) Education & Research** (Curriculum and Co-Curricular Education, Research)
  - 2) Operations** (Buildings, Climate, Dining, Energy, Grounds, Purchasing, Transportation, Human Resources, Investment & Public Engagement)
  - 3) Innovation**
  - 4) Planning & Administration** (Diversity & Equity, Programs for Under-represented Groups, Affordability & Access Programs)





HOW DO WE DO...  
*Sustainability* at Lakeland?

Apply, Measure & Assess

# LEED

Leadership in  
**Energy** and  
**Environmental**  
Design

- A third party assessment and rating framework that promotes a whole building approach to sustainability.



Lakeland  
COMMUNITY COLLEGE  
HOLDEN UNIVERSITY CENTER



LEED® for New Construction	
Total Points	
SUSTAINABLE SITES	10
WATER EFFICIENCY	6
ENERGY & ATMOSPHERE	16

Holden University  
Center

Because it is good for **cost savings**,  
creates a **pleasant, healthful indoor  
environment**,  
reduces impact on the **earth's resources**,  
and it is good for the **environment**.



## Energy Efficiency & Emissions

Apply, Measure & Assess

# Lakeland has Reduced our Greenhouse Gas CO<sub>2</sub> Footprint!

And Other GHG's: Methane (CH<sub>4</sub>), Nitrous Oxides (N<sub>2</sub>O), Sulfur Dioxide (SO<sub>2</sub>), HCFC's

- ❑ We Use the 'Campus Carbon Calculator' Which resides in the University of New Hampshire's Sustainability Institute.

### Reduction since 2007 baseline

- 48% in Natural Gas (mcf)
- 38% in Electric (kwh)
- 37% in water use (gal)

### Energy Conservation

LCC Resolution No. 28-08

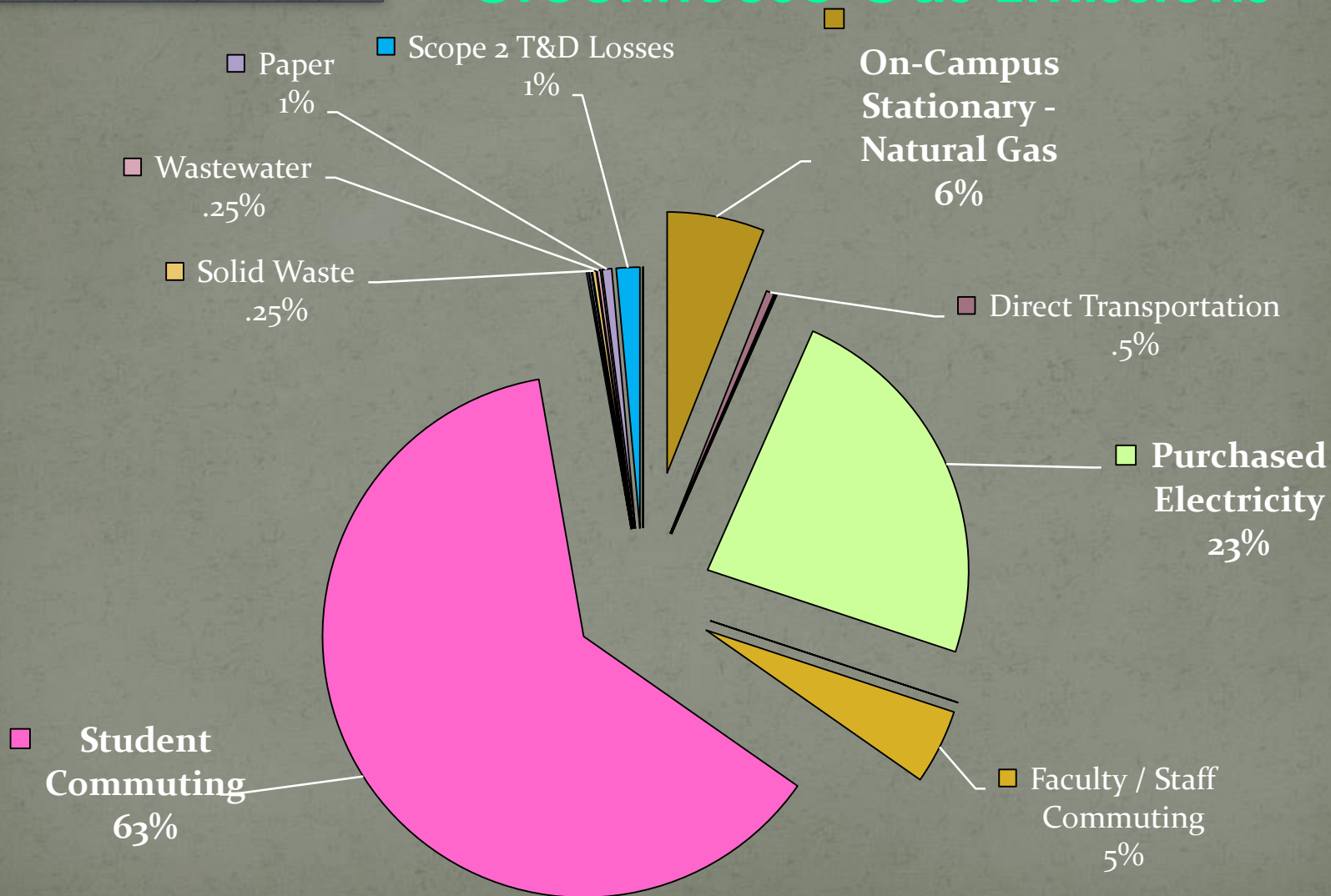




# Energy Efficiency & Emissions

Apply, Measure & Assess

## Greenhouse Gas Emissions





## Energy Efficiency & Emissions

Apply, Measure & Assess

Lakeland's

# Energy Efficiency Initiative is Best in Class!

**Saves Money!**

Social, Economic

**Conserves Natural Resources**

Social, Environmental & Economic

**Reduces Energy Dependence from Conflict Areas**

Social, Environmental & Economic

**Reduces Pollution and Increases Human and Environmental Health!**

Social, Environmental & Economic

**social, economic, environmental & cultural** systems







## Recycling & Diversion

### Recycling/Diversion Report 2014

**47% is Recycled  
or Diverted**



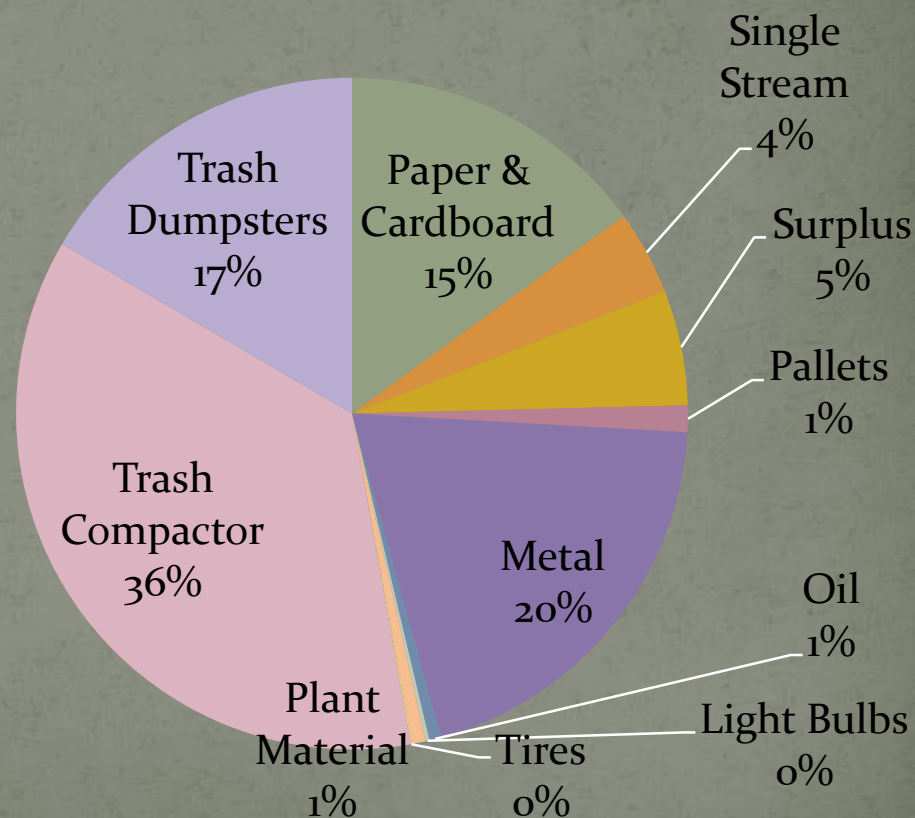
### Student Waste Audit 2014 Spring Semester

**34% of the  
Trash is  
Recyclable**

Apply, Measure & Assess

### Recycling/Diversion Streams:

#### Lakeland Community College Waste Summary FY14





# Operations

Apply, Measure & Assess

- Installed the 1<sup>st</sup> Green Roof in Lake County
- White Roofs – reflects UV 'heat' reducing cooling costs!
- Low Mow areas for Biodiversity & Energy savings
- Storm water Retention slow run off
- Use Native Plants & Integrated Pest Management
- Energy Star Purchasing
- 'Green Kiosk' –monitor on wall in E building by coffee kiosk







## Education

Apply, Measure & Assess

### Curriculum

Sustainability concepts can be woven trans-disciplinarily illustrating

the **interconnected, dynamic relationships** between

**society**

People

**environment**

Planet

**economy**

Prosperity

### Co-curricular Events and Forums

**Phi Theta Kappa – Honors Project** – Knowledge Exchange on 'Sustainability', Short Video on Sustainability for New Student Orientation

**Center for International Education** – Richard Currie Smith, 'Sustainability Presentation'

**Center for Geographic Information Services** – '**Ghost Debris**'

**Women's Center** – Educating Girls MOVIE Screening "**GIRLRISING**"

**Green Group** – **Hunger Banquet**



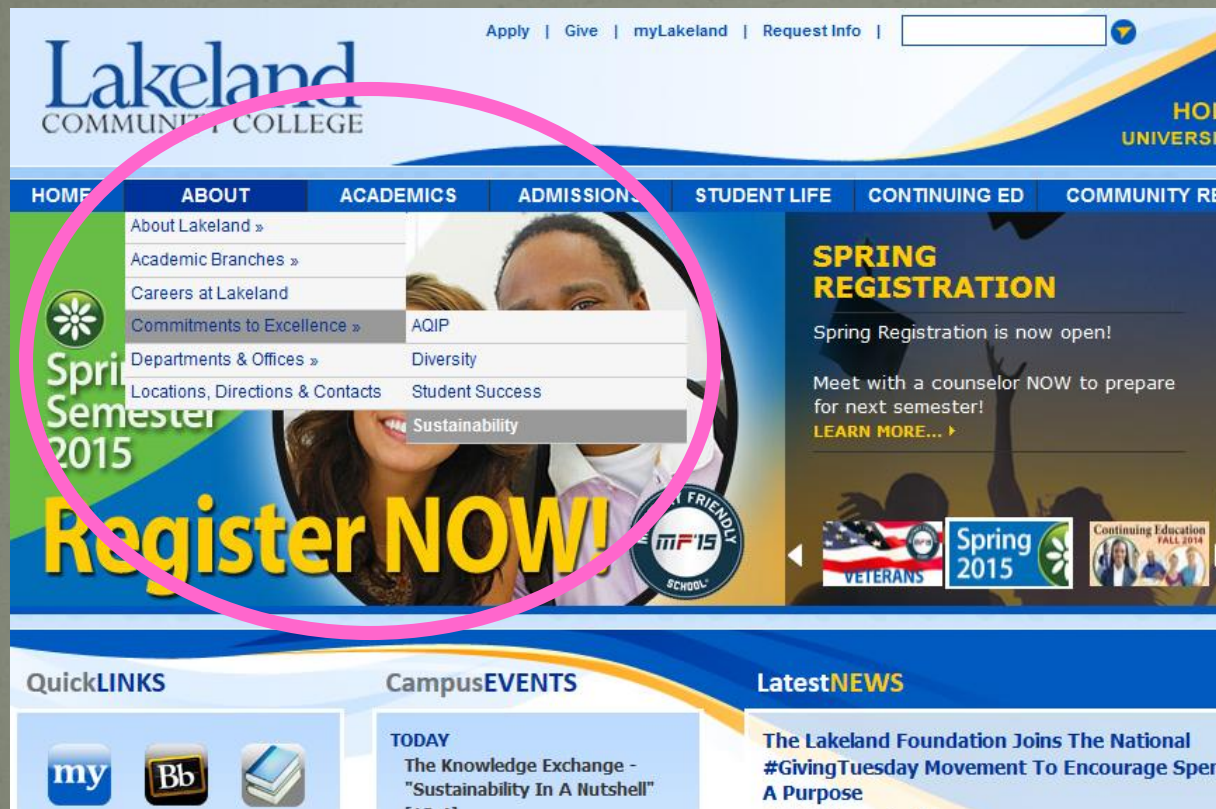


# Mooreland Mansion & Gardens





# Accessing Lakeland's Sustainability Webpage



<http://lakelandcc.edu/web/about/sustainability>





We Do Well  
Together!

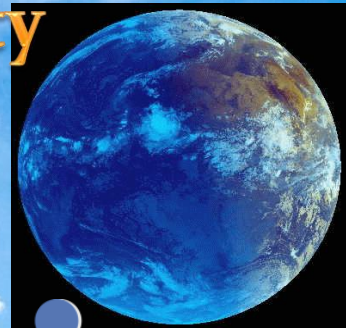


**PEOPLE**



**Sustainability  
In A  
Nutshell**

**PLANET**



**PROSPERTIY**



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