

# Commons Tragedies

<i>Looping picture intro</i>	
Flock of sheep	Overgrazed pasture
Herd of cows	Overgrazed pasture
Schools of fish	Full fishnets
Flocks of birds	Psgr pigeon w/descriptors
Buffalo herd	Buffalo kill
Buffalo herd	Stacks of hides
Pod of right whales	Oil painting whaling ship
Gushing oil well	Multiple oil wellheads
High Plains Aquifer map	Crop circles; center pivot

# Commons Sense:

Using Games to Frame a Path From  
Tragedy to Triumph



Environmental Summit

May 10, 2006

Atlanta, GA





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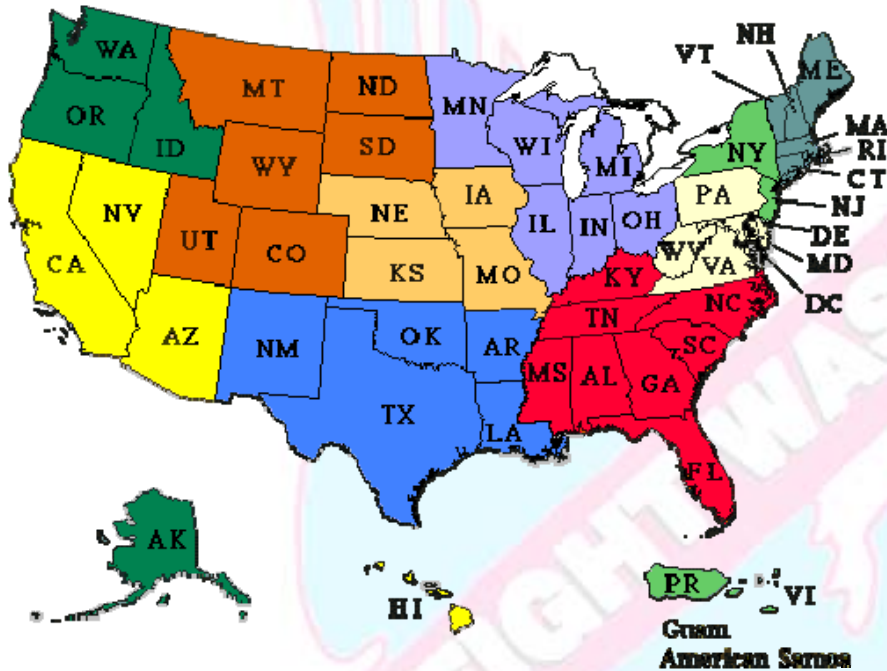
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[www.p2ric.org](http://www.p2ric.org)

**p2ric**.org

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- **Northeast Waste Management Officials' Association**  
 Regions 1 & 2 - CT, ME, MA, NH, RI, VT, NJ, NY  
[www.newmoa.org](http://www.newmoa.org) / 617-367-8558
- **Waste Reduction Resource Center**  
 Regions 3 & 4 - DE, MD, PA, VA, WV, DC, AL, FL, GA, KY, MS, NC, SC, TN  
[wrrc.p2pays.org](http://wrrc.p2pays.org) / 919-715-6534
- **Great Lakes Regional P2 Roundtable**  
 Region 5 - IL, IN, MI, MN, NY, OH, PA, WI, Ontario  
[www.glrppr.org](http://www.glrppr.org) / 630-472-5019
- **P2 Regional Information Center**  
 Region 7 - IA, KS, MO, NB  
[www.p2ric.org](http://www.p2ric.org) / 402-554-6257
- **Southwest P2 Information Center**  
 Region 6 - AK, LA, NM, OK, TX  
[www.zerowastenetwork.org](http://www.zerowastenetwork.org) / 512-232-7149
- **Peaks to Prairies P2 Information Center**  
 Region 8 - CO, MT, ND, SD, UT, WY  
[www.peakstoprairies.org](http://www.peakstoprairies.org) / 406-994-3451
- **Western Regional P2 Network**  
 Region 9 - AZ, CA, HI, NV  
[www.wrppn.org](http://www.wrppn.org) / 775-689-6688
- **Pacific Northwest P2 Resource Center**  
 Region 10 - AK, ID, OR, WA  
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# Overview

- Context
- Game 1: Tragedy of the Commons
- Discussion
- Game 2: Social Dilemmas
- Discussion
- History, direction, & more discussion

“...modern environmentalism is no longer capable of dealing with the world’s most serious ecological crisis.”

# 危机

## THE DEATH OF ENVIRONMENTALISM

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GLOBAL WARMING POLITICS IN A  
POST-ENVIRONMENTAL WORLD

BY MICHAEL SHELLENBERGER AND TED NORDHAUS



# The Harvard Crimson

ONLINE EDITION

## Opinion

### Requiem for Environmentalism

Published On 4/20/2006 2:21:20 AM

By PIOTR BRZEZINSKI and PIOTR BRZEZINSKI

#### CORRECTION APPENDED

Environmentalism is dead; long live the environment!

This pronouncement might seem a touch premature, especially to the 500 million people who will celebrate the 37th Earth Day on April 22. However, these numbers mask the growing irrelevance of the environmentalist movement. Having lost its credibility with the general public, the movement must develop a moderate discourse while challenging its previous assumptions and outdated theories.

The contemporary environmentalist movement faces a stark choice: change tactics or fade into irrelevance. Over the past few decades, it has achieved some victories and utterly failed to influence the general public. As indicated by a recent MIT study, the public knows little about environmental and international issues, Americans ranked environmental problems 13th, well below terrorism, taxes, crime, and drugs.

Alarmism—the environmental movement's basic strategy—has led to this dead end. Since Rachel Carson's "Silent Spring" in 1962, environmentalists have painted dire scenarios. Even on the first Earth Day in 1970, biologist George Wald predicted that "civilization will end within 15 or 30 years." The New York Times warned that "man must stop pollution and conserve his resources...to save the race from intolerable deterioration." Most of these forecasts have repeatedly proven to be wrong.

Take biologist Paul Ehrlich's popular Malthusian broadside, "The Population Bomb." Farsighted Ehrlich predicted that a "small increase in food supplies we make," causing world-wide famine and the death of "hundreds of millions of people." In reality, increased agricultural productivity exceeded population growth and the total amount of cultivated land barely increased.

“growing irrelevance”


“lost its credibility”

“outdated theories”

# Tragedy of the Commons

Hardin, G. 1968. “The Tragedy of the Commons.” *Science*, (162) p. 1243-1248

[www.sciencemag.org/sciext/sotp/commons.dtl](http://www.sciencemag.org/sciext/sotp/commons.dtl)



All environmental issues  
are essentially  
*Tragedy of the Commons* issues.

# Game 1- Tragedy of the Commons

- The object of the game: to harvest as many fish as possible from the sea.
- *Quiet!* Communication limited according to directions.
- At carrying capacity, there are 14 fish (cards) in this sea (table). You will receive one point for every four fish harvested.
- When the game begins, you may harvest all of the fish, some of the fish, or none.
- You will have 4 twenty-second trials in which to harvest fish.
- If fish remain in the sea after each trial, a new fish will be added for each one remaining. If there are four fish left, four more will be added. But the total number of fish can't exceed the carrying capacity of 14.

# Post Game 1 Discussion

- Measurement: Who won? Maximum number of points?
- Describe strategies for play & results.
- Optimal strategy?
- What is the role of communication?
- What are examples of *commons*?

## Additional commons tragedies pictures

Traffic on roadway	Smog over city
Blue sky	Contrails in sky
Tall smokestacks	Outfall into stream
Eroded bank to stream	Litter in highway median

# Post Game 1 Discussion

- How can we define the issue of the commons tragedy?
- More examples of commons?

# “Commons”

- A common pool resource is, in an economic terminology, a ‘good’ with
  - “Non-excludability”, i.e., easy/shared access, and
  - “Subtractibility”, i.e., consumption of the good is subtracted from the pool of available resources, so that the availability of the good declines.
- In general, CPR-problems arise where individual behavior affects others in the commons collective.



Additional commons tragedies pictures

Roadway billboards	Titanic & lifeboats
Social security cartoon	Jack Abramoff
Tall smokestacks	Outfall into stream
Eroded bank to stream	Litter in highway median

# Social Dilemmas

## Prisoner's Dilemma

[en.wikipedia.org/wiki/Prisoner's\\_dilemma](https://en.wikipedia.org/wiki/Prisoner's_dilemma)

# What To Do

- First, take one red card and one black card.
- Number off: 1,2,3,4; 1,2,3,4...
- Prepare a score sheet:

Round	You (R/B)	Other (R/B)	Your Score	Other Score
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____

# How To Play

You will be asked to play a card, and then I will match you with another player. Your earnings will depend on what you play and what your matched player chooses.

If you play **R**, your earnings go up 2, other none

If you play **B**, your earnings go up none, other 3

If you each play **R**, you each earn 2.

If you each play **B**, you each earn 3.

If you play **R**, other **B**, you earn 5, other 0.

If you play **B**, other **R**, you earn 0, other 5.

# Scoring

You	Other	Score	
		You	(Other)
<b>R</b>	<b>R</b>	2	(2)
<b>B</b>	<b>B</b>	3	(3)
<b>R</b>	<b>B</b>	5	(0)
<b>B</b>	<b>R</b>	0	(5)

# Analysis

		Other	
		R	B
You	R	(2,2)	(5,0)
	B	(5,0)	(3,3)

# Post-Game 2 Discussion

- Measurement: Who won? Maximum number of points?
- Describe strategies for play & results.
- Optimal play?
  - Single round? Multiple rounds?
- What is the role of communication?

# Post-Game 2 Discussion

- Nash Equilibrium
- “Not everything that is rational is sensible”
- Principle of reciprocity

# Historical Approaches

- Classic, educational approach: define problem, offer solution
- Regulate behavior

# Environmental Psychology

Two other approaches exist that shape norms and values:

- Community self-regulation
  - Chesapeake Bay
- Religion/morals
  - Sierra Club, “Green Religion”

The greatest change to public behavior occurs when using all four of these approaches.



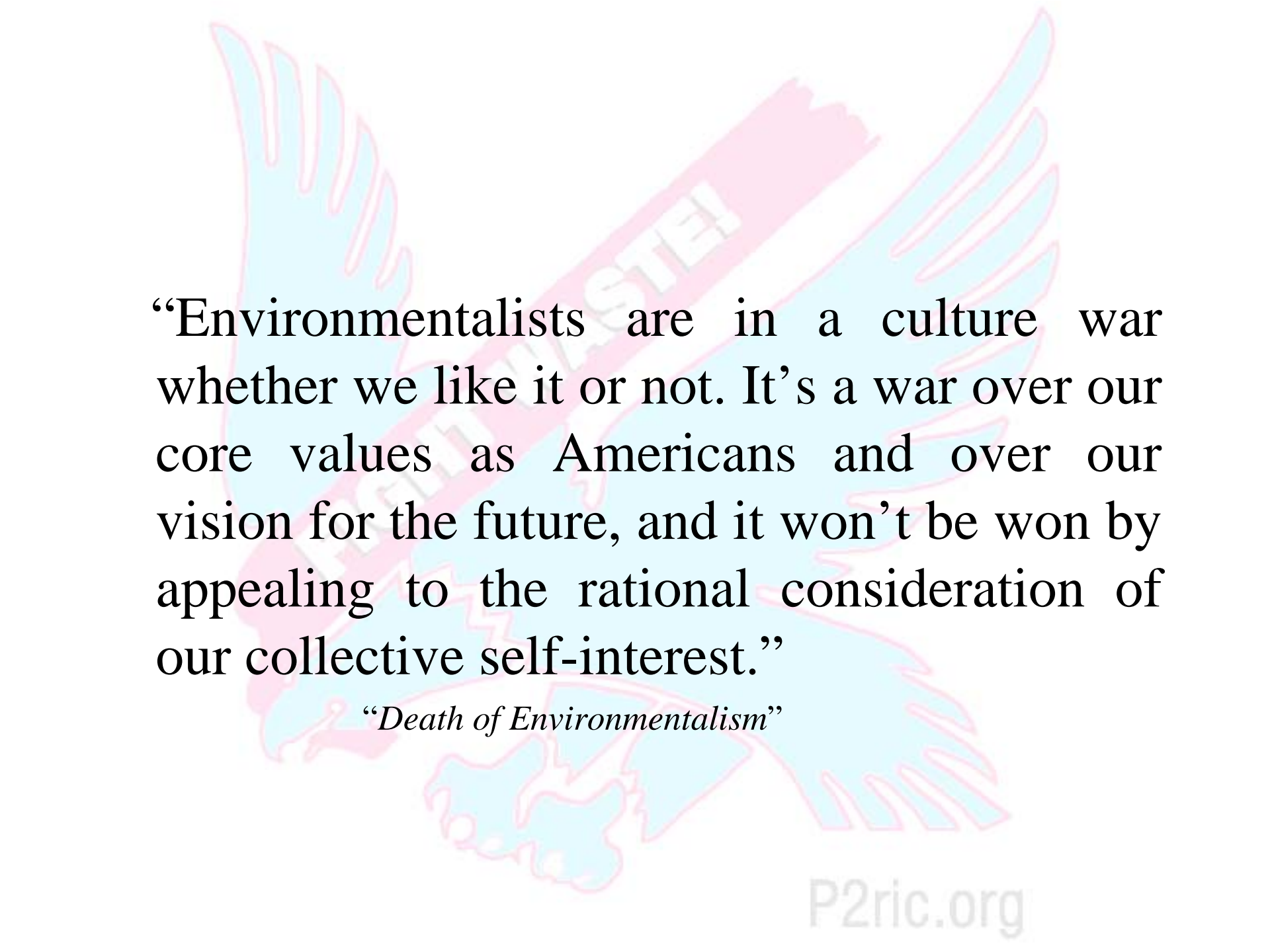
Education

Norms and Values

Regulation



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“Environmentalists are in a culture war whether we like it or not. It’s a war over our core values as Americans and over our vision for the future, and it won’t be won by appealing to the rational consideration of our collective self-interest.”

*“Death of Environmentalism”*

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- “It’s important for Americans to realize that this is not a political issue. It’s a moral issue.”

Al Gore, *Newsweek* interview about *An Inconvenient Truth* 05/08/06, p68

Q: Does the President believe that, given the amount of energy Americans consume per capita, how much it exceeds any other citizen in any other country in the world, does the President believe we need to correct our lifestyles to address the energy problem?

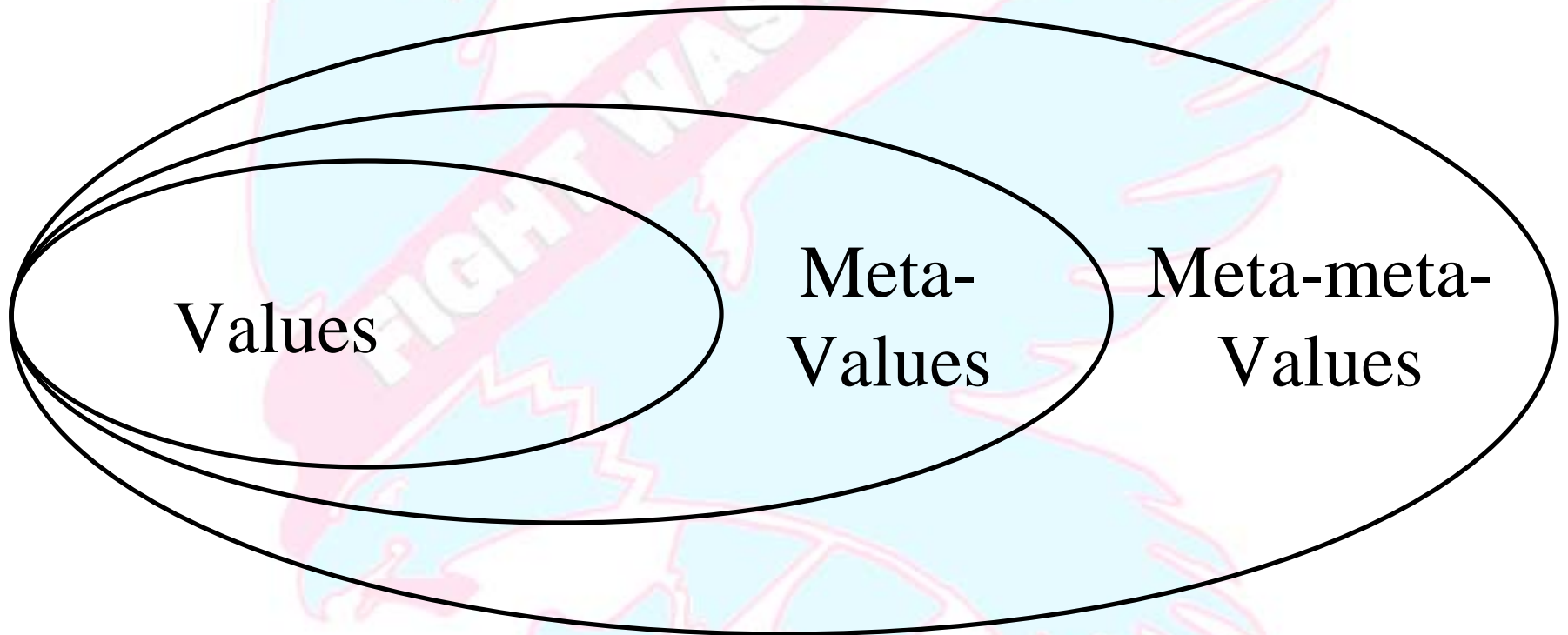
A: That's a big no. The President believes that it's an American way of life, and that it should be the goal of policy makers to protect the American way of life. The American way of life is a blessed one.

Ari Fleischer, May 7, 2001

# Handling the Elephant in the Room

The goal: to broaden the discussion to one of shared metavalues.

# How to Frame the Discussion?



# Partnerships

- The National Council of Churches, which represents more than 100,000 congregations nationwide:
  - In 2004 sent a letter to President Bush:  
“Protection of the global climate is an essential requirement for faithful human stewardship of God’s creation on Earth,”
  - has begun to describe stewardship of the earth as a critical “moral value.”

# Commons Triumphs

<i>Looping picture extro</i>	
Campground	Nat'l Park Reservations
Litter pickup	
Insurance pools	
Linux	
Blood donation	
Wikipedia	
PTO, PTA logos	
Sustainable harvest	Inupiat whaling pix