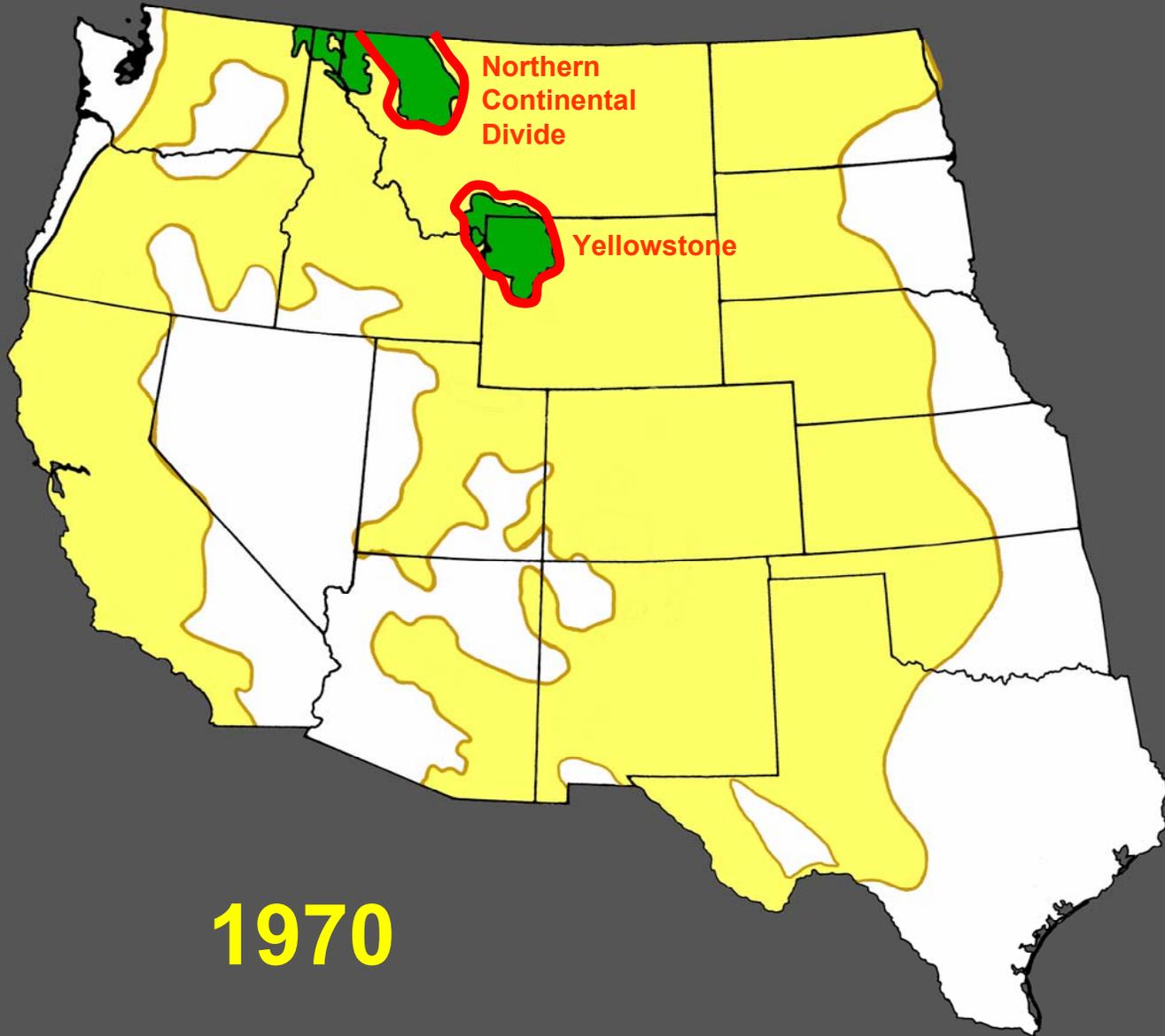


# **“Conservation is like warfare”**

*Science & Management of Grizzly Bears  
in the Northern US Rockies*

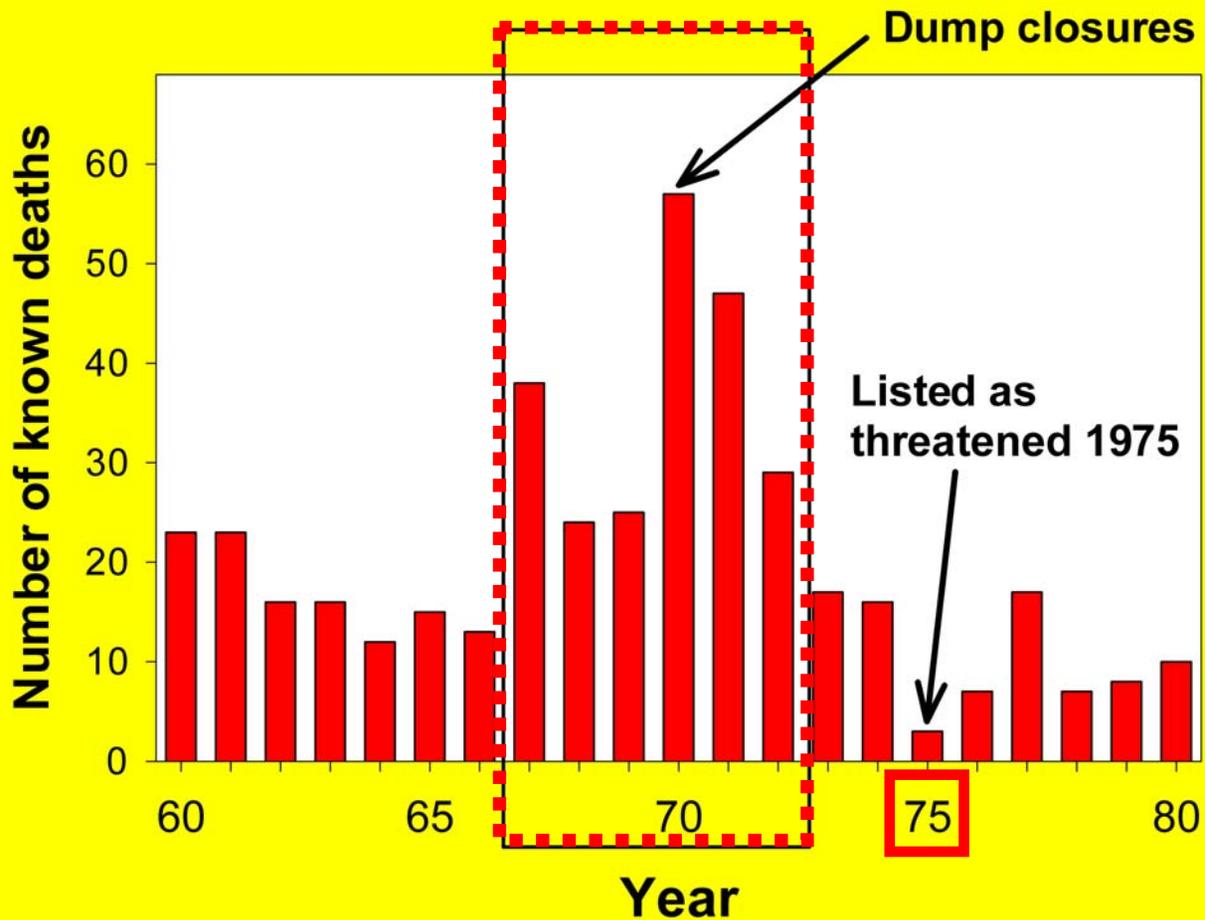
**David Mattson**

# The isolation of Yellowstone's grizzlies



1970

## 220+ bears died in a 6-yr period



# Decision Process

30 years →

Promotion & Application

**INVOCATION**  
Listed as  
Threatened in  
1975

**INVOCATION**

Prescription

**TERMINATION**  
Delisting of the  
Yellowstone  
population

**Intelligence**

**Appraisal**

31734

Title 50—Wildlife and Fisheries  
CHAPTER I—UNITED STATES FISH AND  
WILDLIFE SERVICE, DEPARTMENT OF  
THE INTERIOR

PART 17—ENDANGERED AND  
THREATENED WILDLIFE

Amendment Listing the Grizzly Bear of the  
48 Conterminous States as a Threatened  
Species

**PRESCRIPTION**

# Decision Process

31734

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Species

PRESCRIPTION

Uncertain policy

What is “recovery”?

5

---

## The Yellowstone Grizzly Bear Recovery Program

Uncertain Information, Uncertain Policy

---

David J. Mattson and John J. Craighead

Management of Yellowstone's threatened grizzly bear population (*Ursus arctos horribilis*, Figure 5-1) has a long history of often reported but poorly understood controversy. This history, though troubled, is a rich source of lessons about the management of a threatened species. Perhaps in no other arena is there so much need for adaptive organizational learning—given that the room for management error is so small and the consequences irreversible. By legal as well as biological definitions, endangered and threatened species are at great risk of extinction and require high-performance management to ensure their survival.

Here we examine individual and organizational behavior associated with grizzly bear conservation and offer some lessons that, if applied, could enhance the prospects for the bear's survival. Consequently we emphasize the performance of key figures and government agencies holding responsibility for research and management and will not dwell on the natural history of the population. Clearly, our analysis is bounded by our experiences and vantage point. Different experiences would highlight different factors. Accordingly, the views we express are not those of any organization or agency. Our experience with research and management of Yellowstone's grizzly bear population spans thirty-five years (1959–1993) and two major research projects that have involved us at the heart of the bear's recovery process. Thus we offer our informed perspectives with the hope that, through wise application of the Endangered Species Act, Yellowstone's grizzly bears will survive in perpetuity.

# Studying Yellowstone grizzly bears

Field investigations  
1979-1993

Analysis & modeling  
1986-2004

Conservation design  
1996-2004

Habitat relations

Human-bear relations

Effects of diet on demography

Habitat suitability models

Conservation design

**Conservation decision processes**

# **The Bureaucratized (& *Politicized*) Practice of Science & Management**

# **Key Features of Content & Context**

**Conflicted problem definitions**

**Exclusionary value demands**

**Exacerbating effects of symbolic politics**

**Geopolitics & coercive social process**

**Politicization of science**

# The problem of problem definition

**'Perspectives' & Related Myths**  
*Wildlife*

**Negativistic**

**Dominionistic/Utilitarian**

**D/U**

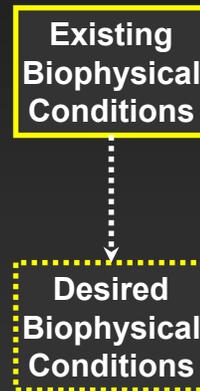
**Scientistic/Ecologicistic**

**Humanistic/Moralistic**

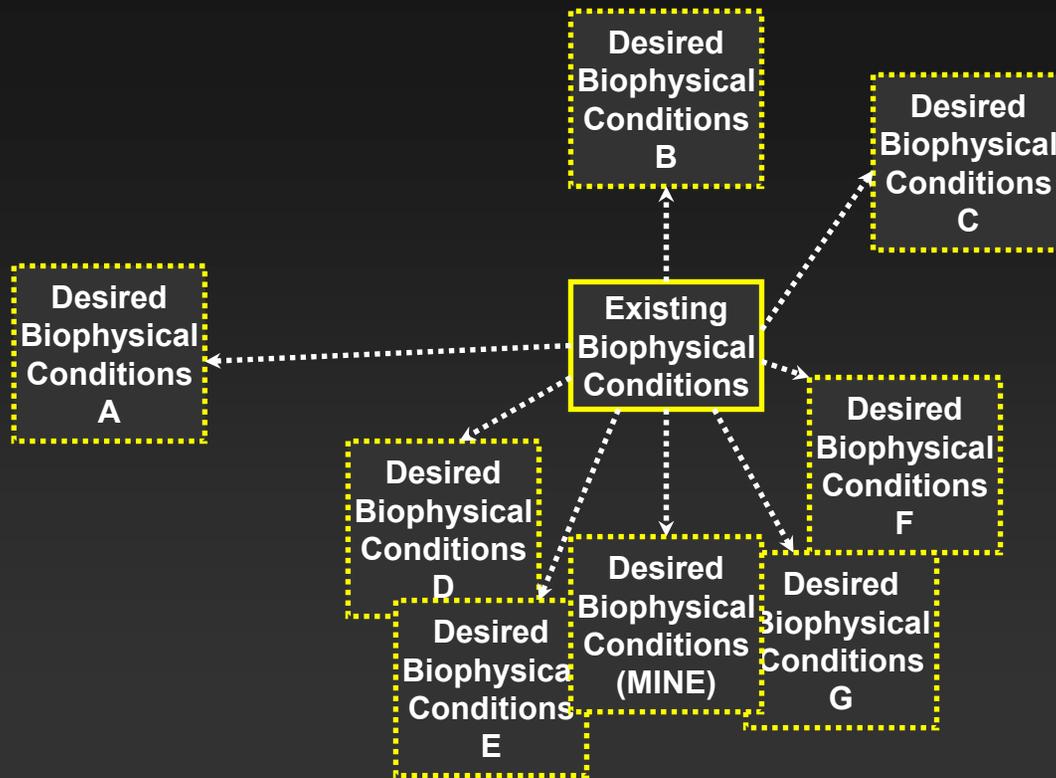
**E/H**

**Aesthetic/Naturalistic**

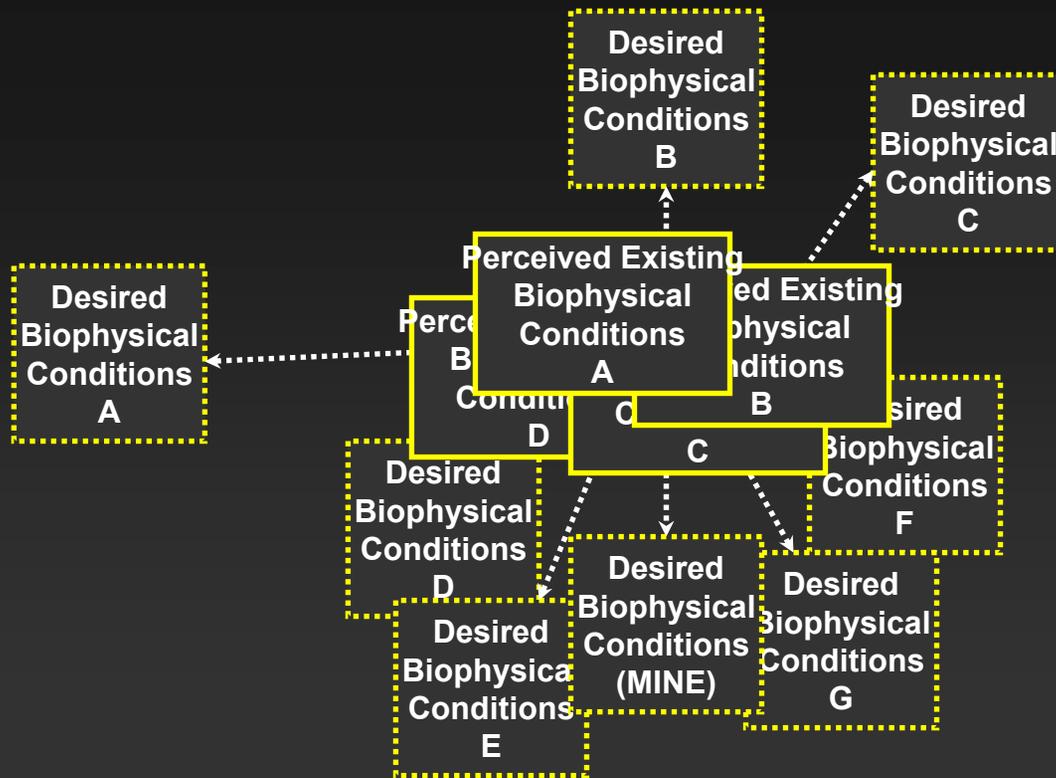
## Conservation Problems:



## Conservation Problems: Who's "problem"?



## Conservation Problems: Who's "problem"?

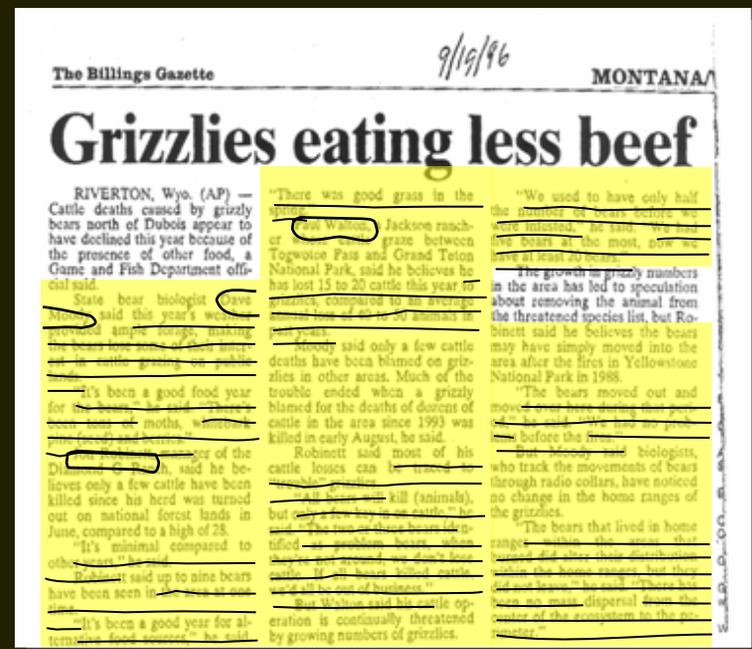


**Elucidating problem definitions...**

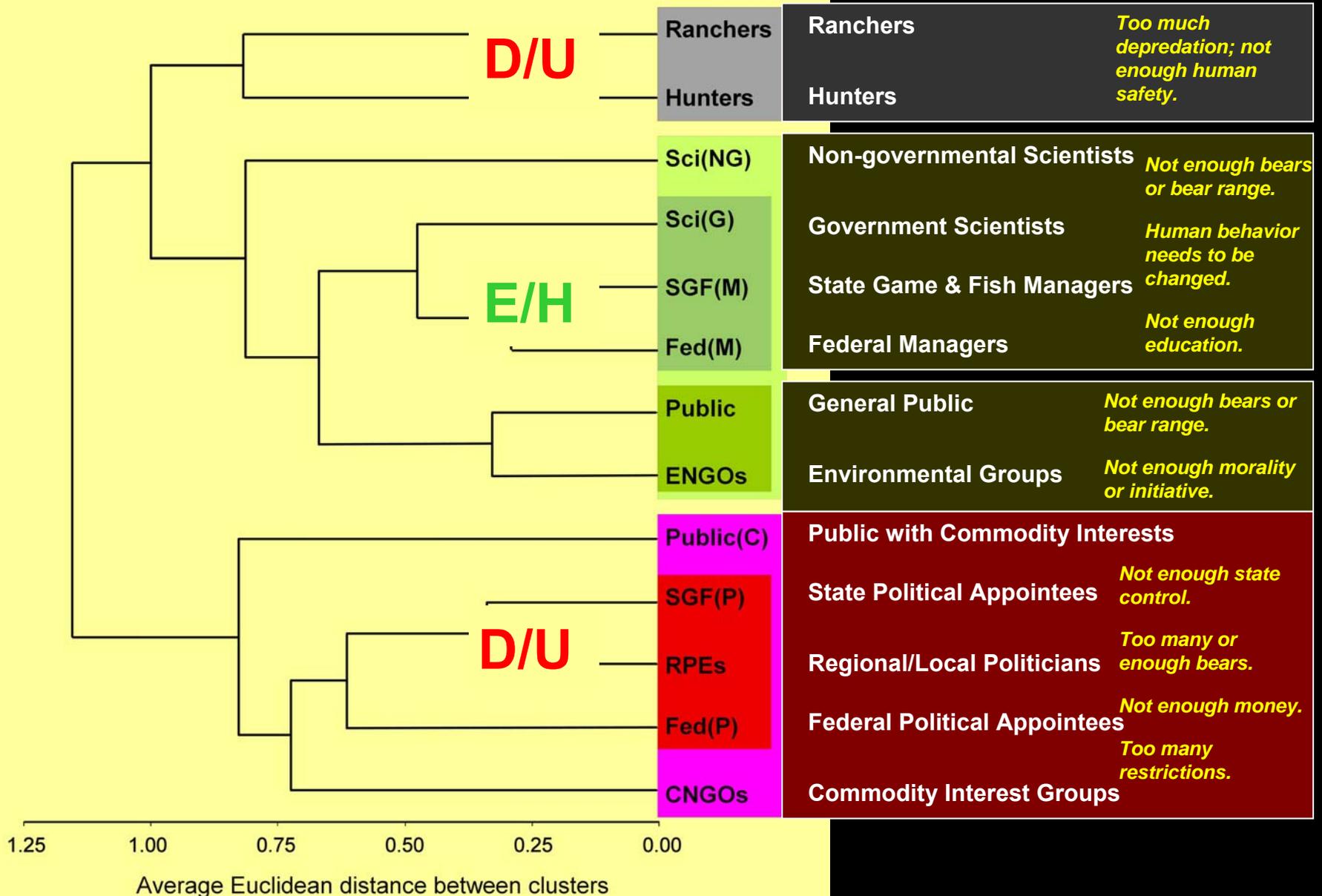
# Narrative, demands, & problem definition in grizzly bear conservation

## 504 quotations from 230 individuals analyzed for:

- Statement of “the problem”
- Proposed solution to “the problem”
- Justification for the perspective
- Nature of appeal of justification (id, ego, superego)
- Overall support of grizzly bear conservation (supportive, neutral, antagonistic)
- Statements of “fact”



# “The Problem” in grizzly bear conservation



# What is “the problem?”

## E/H Interests

- Not enough bears or bear range
- Not enough morality or government initiative

## D/U Interests

- Too many or enough bears
- Too many restrictions
- Too much depredation
- Not enough State control
- Not enough money for mgmt.
- Not enough human safety

## Agency Decision-Makers

- Not enough bears or bear range
- Not enough education
- Human behavior needs to be changed

# To Delist or Not to Delist

## E/H Interests

- Not enough bears or bear range
- Not enough morality or government initiative

**Don't Delist**

## D/U Interests

- Too many or enough bears
- Too many restrictions
- Too much depredation
- Not enough State control
- Not enough money for mgmt.
- Not enough human safety

**Delist**

## Agency Decision-Makers

- Not enough bears or bear range
- Not enough education
- Human behavior needs to be changed

**Delist?**

**There are multiple and contested definitions of “the problem” arising from different demands on the world.**

**These demands are currently being shoehorned into the issue of “delisting.”**

There are multiple and contested definitions of “the problem” arising from different demands on the world.

There is a great need for ameliorative venues to help participants find common ground

These demands are currently being shoehorned into the issue of “delisting.”

**The opaque discourse of  
value demands...**

# Values

*(Lasswell & McDougal 1992)*

Well-being

Skill

Enlightenment

Affection

Respect

Wealth

Rectitude

Power

POTENTIALLY INCLUSIVE

EXCLUSIONARY

## Ascribing Value Demands

Each problem statement was interpreted in terms of the demanded or claimed value.



"Not enough state control"	Power
"Not enough education"	Enlightenment
"Not enough biological info"	Enlightenment
"Not enough morality"	Rectitude

...

Overall value orientation of generic participants was calculated as a weighted mean.

# OVERALL FREQUENCY OF VALUE DEMANDS

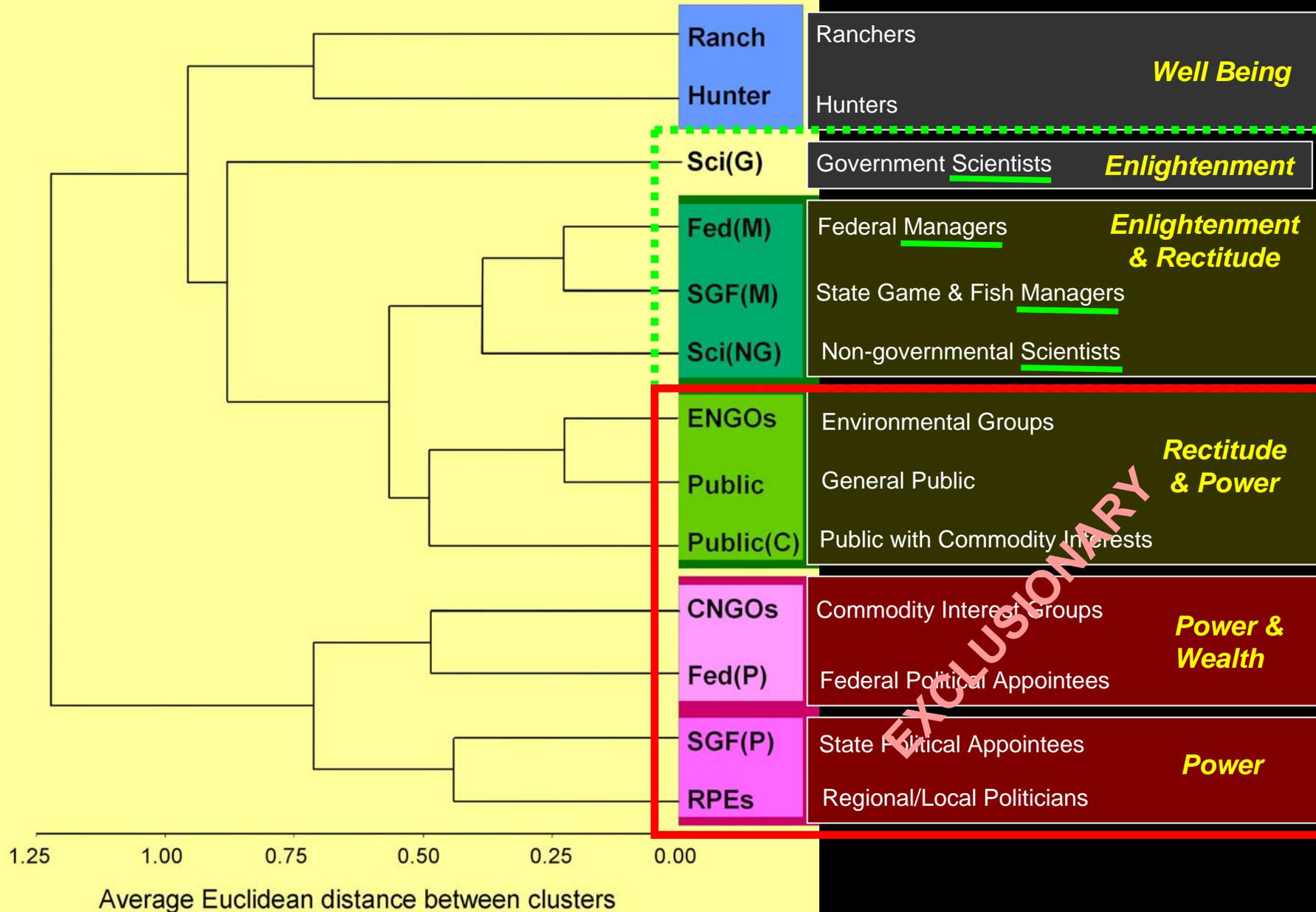
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Power	54%
Rectitude	39
Enlightenment	32
Well Being	16
Wealth	13
Skill	1
Respect	0
Affection	0

**EXCLUSIONARY**

**INCLUSIVE**

# Value orientations & demands in grizzly bear conservation



EXCLUSORY

Most participants are using the discourse to demand **power** and **rectitude**.

The value focus is not on civility or **respect**.

However, **enlightenment** is given priority by managers & scientists.

Most participants are using the discourse to demand **power** and **rectitude**.

The value focus is **not** **civility** or **respect**.

However, **enlightenment** is given priority by managers & scientists.

**Prioritized value demands are antithetical to finding common ground**

**The exacerbating effects of  
symbolic politics...**

## Grizzly bear conservation & political elites

One way to elucidate D/U and E/H perspectives among political elites is through **League of Conservation Voters (LCV) score cards & party affiliation.**

Nationally, the average LCV score for **Republican Congress people is 14%**; for **Democrats the average is 72%.**

## Grizzly bear conservation & political elites

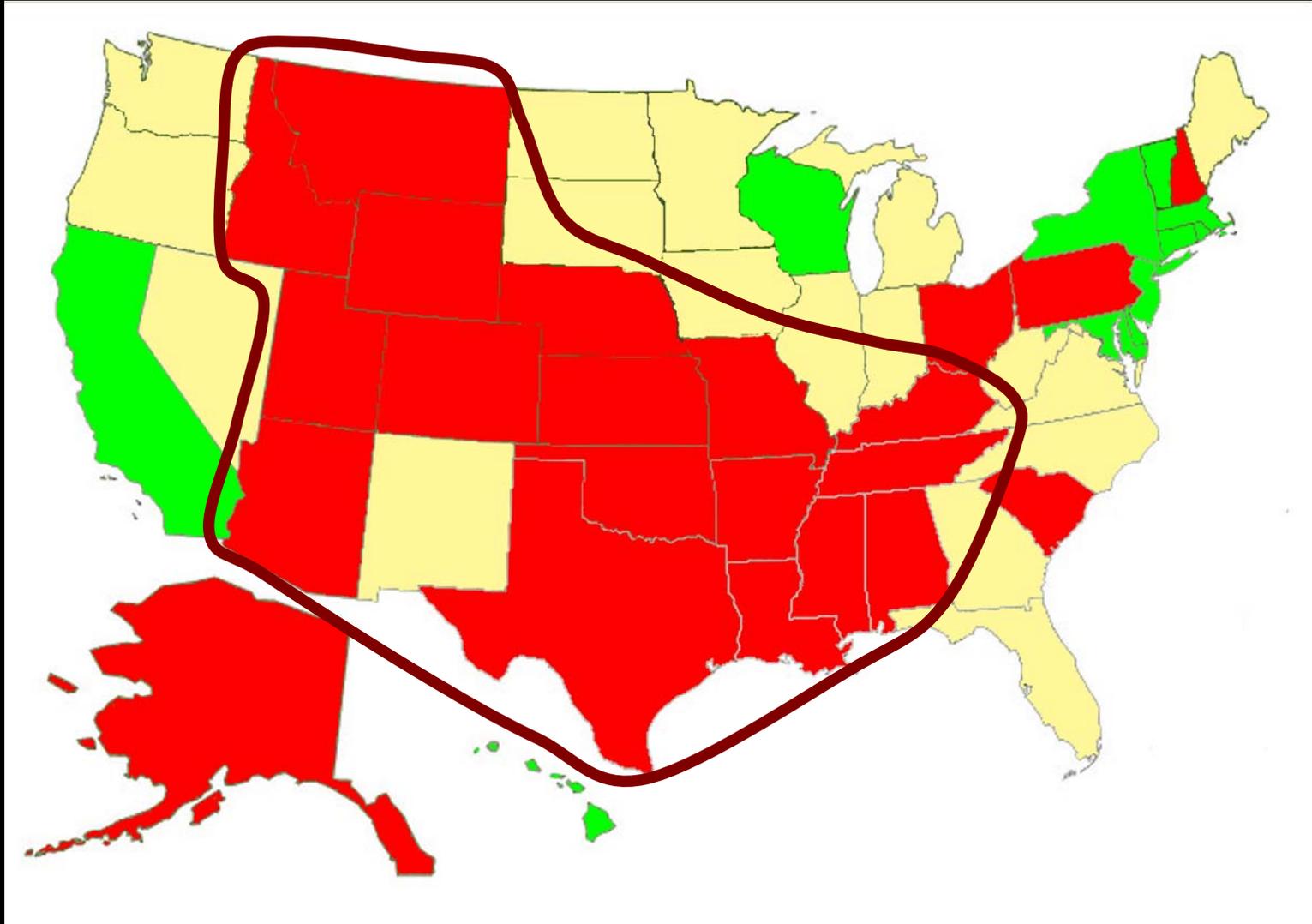
**D/U political elites dominate areas containing grizzly bear recovery areas (*Idaho, Montana, & Wyoming*).**

The average LCV score for ID, MT & WY Congressmen is: **8%** (out of a possible 100%)

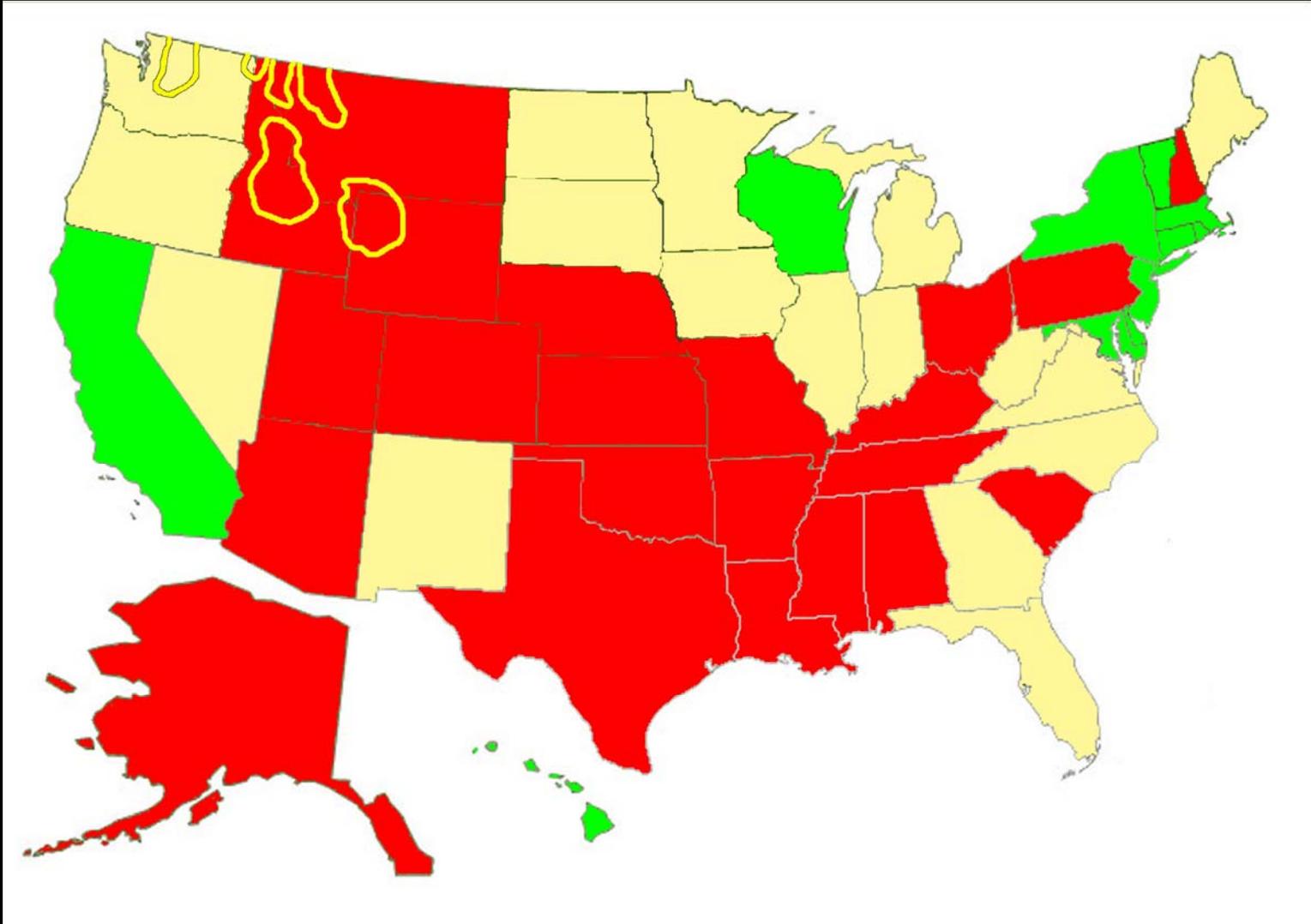
At the state government level, **67%** of all Senators & **66%** of all Representatives are Republicans; **2 of 3** governors are Republicans.

## ***National geopolitics***

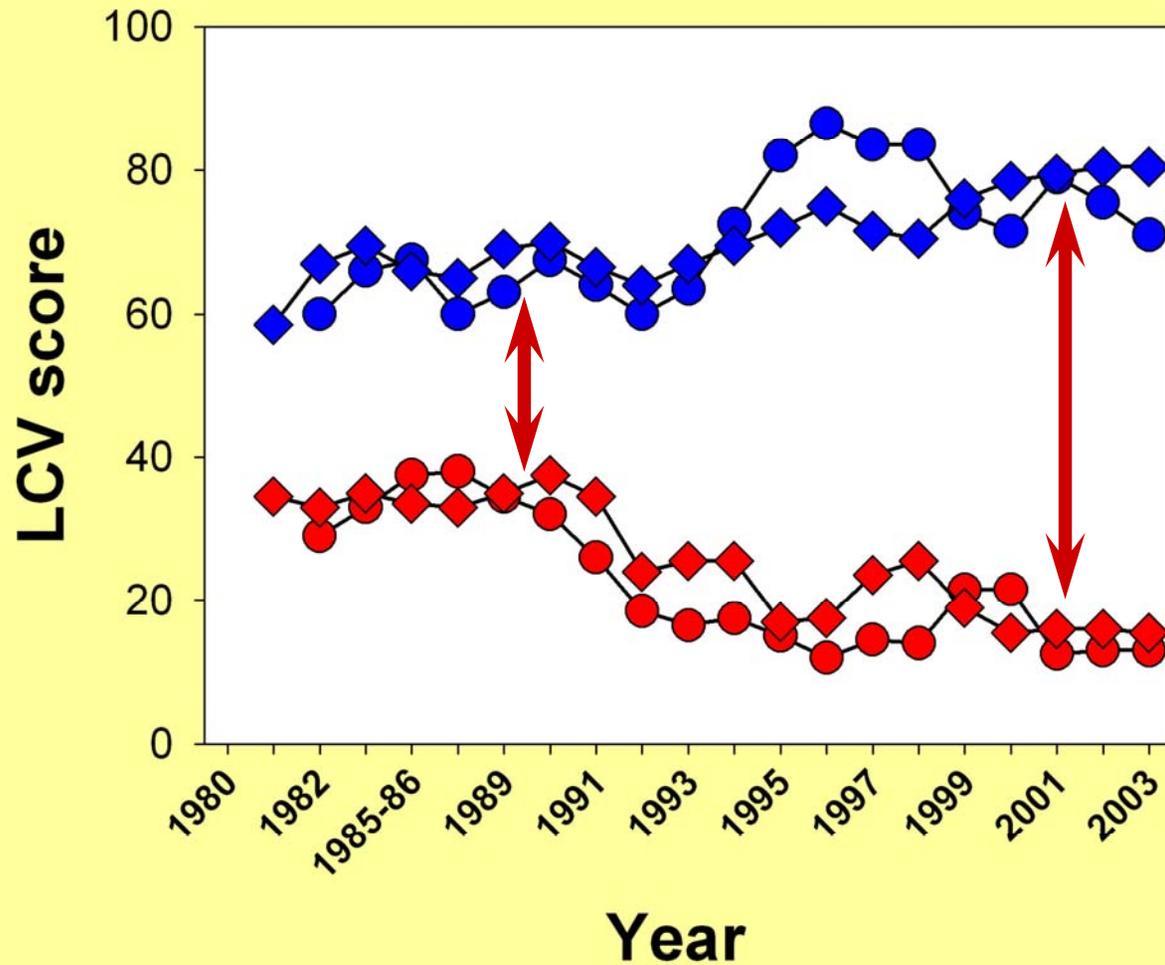
**League of Conservation Voters (LCV) scores**



# ***National geopolitics & grizzly bear recovery areas***



# Increased politicization of environmental issues



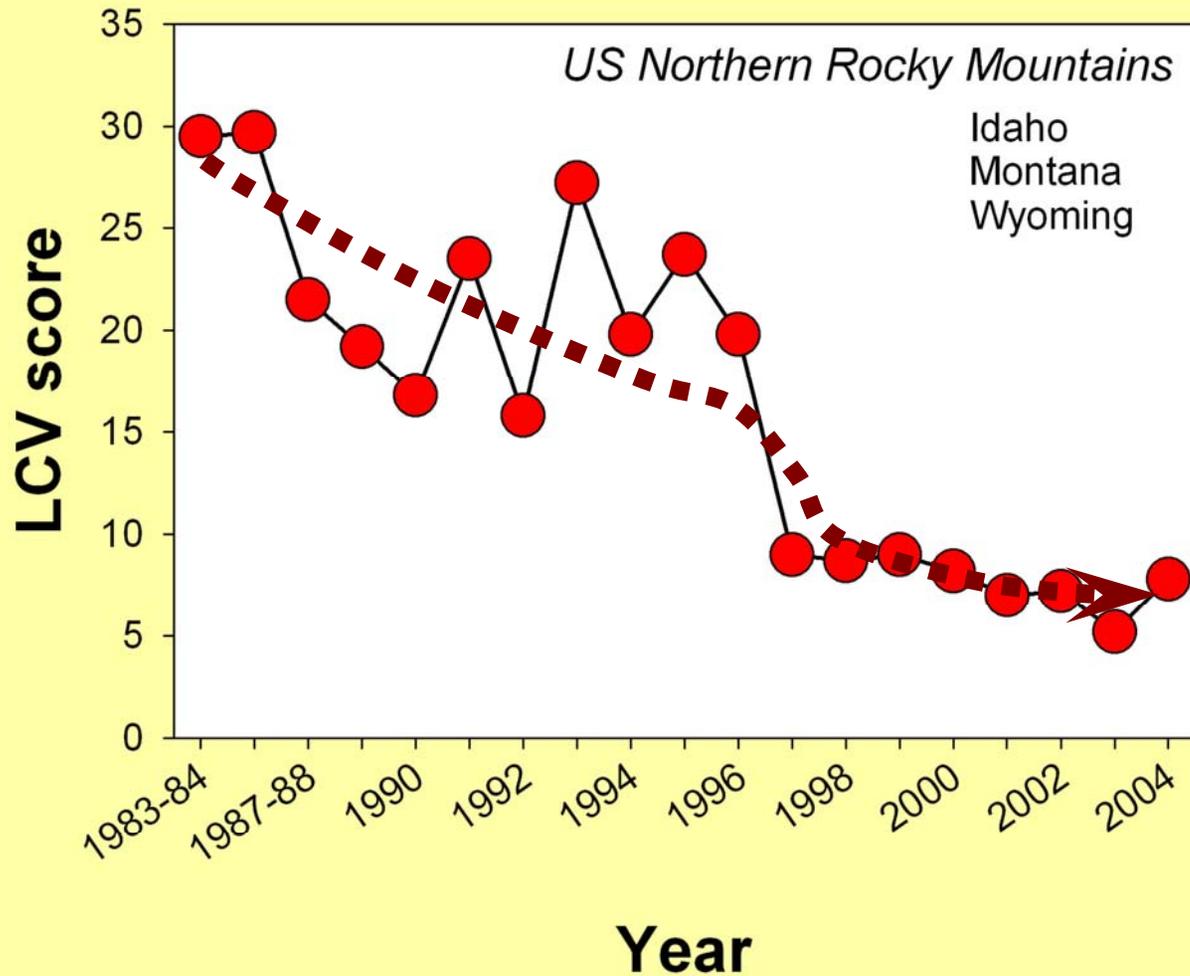
**Management is symbolically entangled with national geopolitics, federal vs. state control, and political party identification.**

Management is symbolically  
entangled with national  
geopolitics, general vs. state  
control, and political party  
identification.

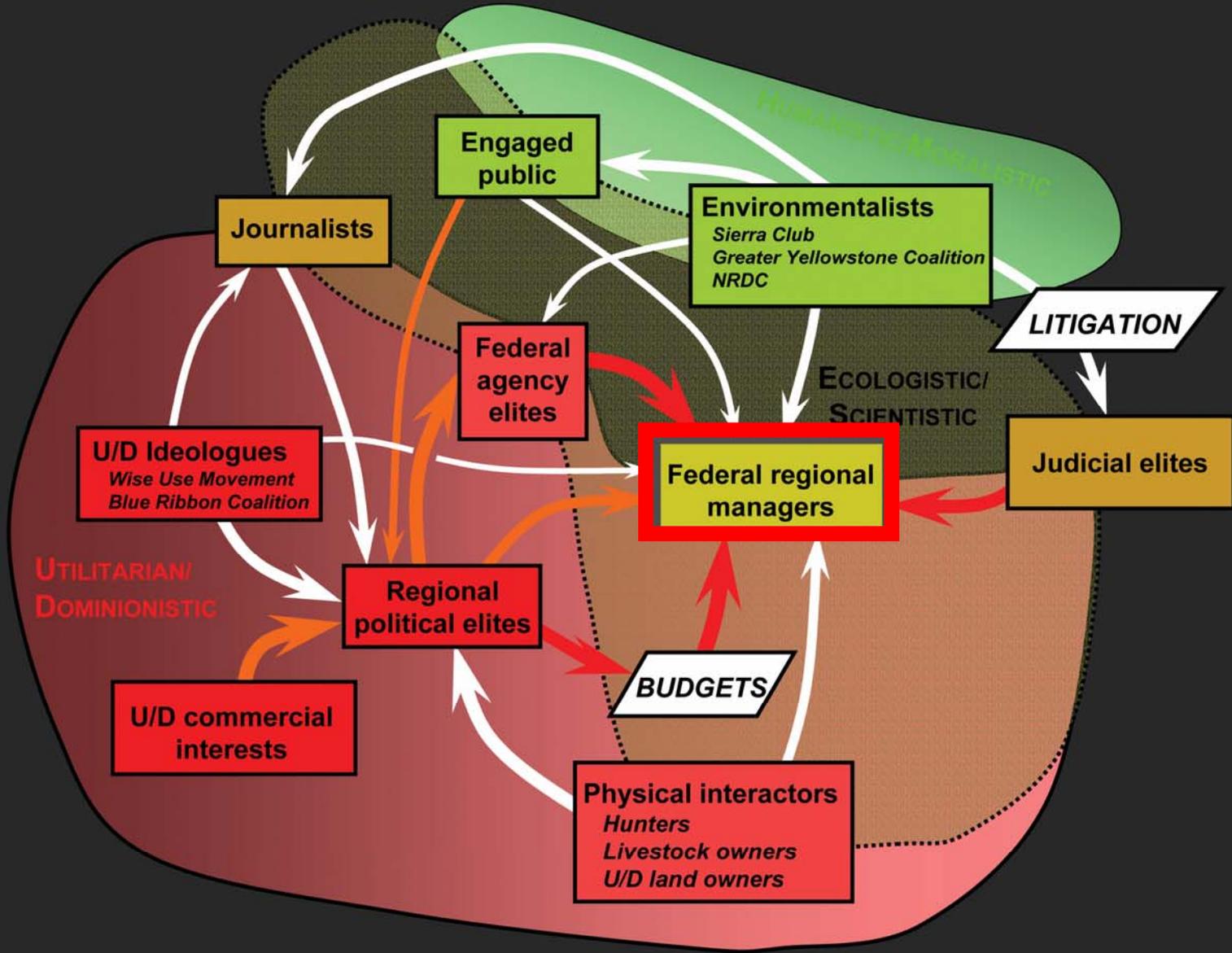
**COMMON GROUND**

# The nature of social process

## Diminishing regional political support



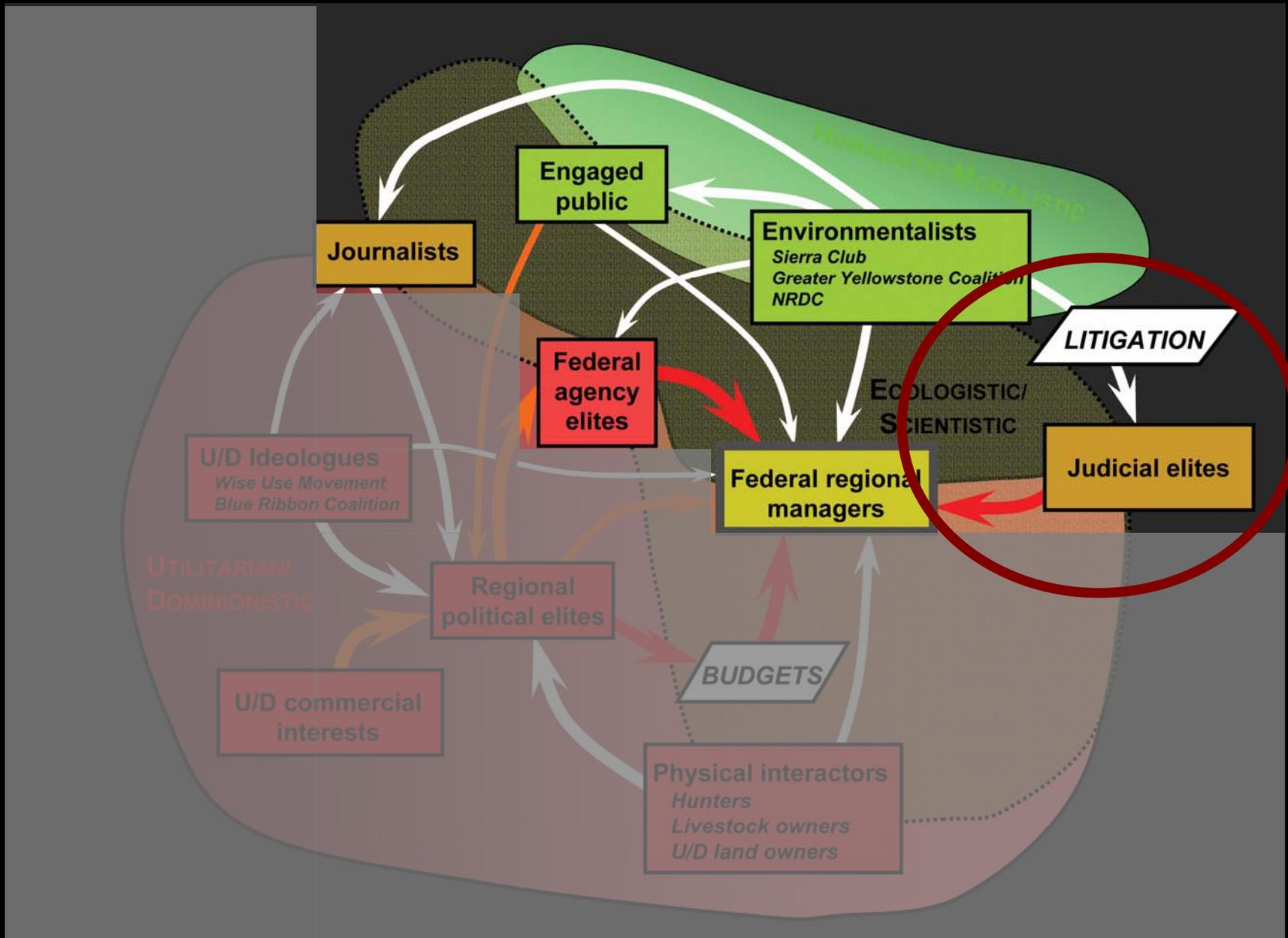
# Social Process





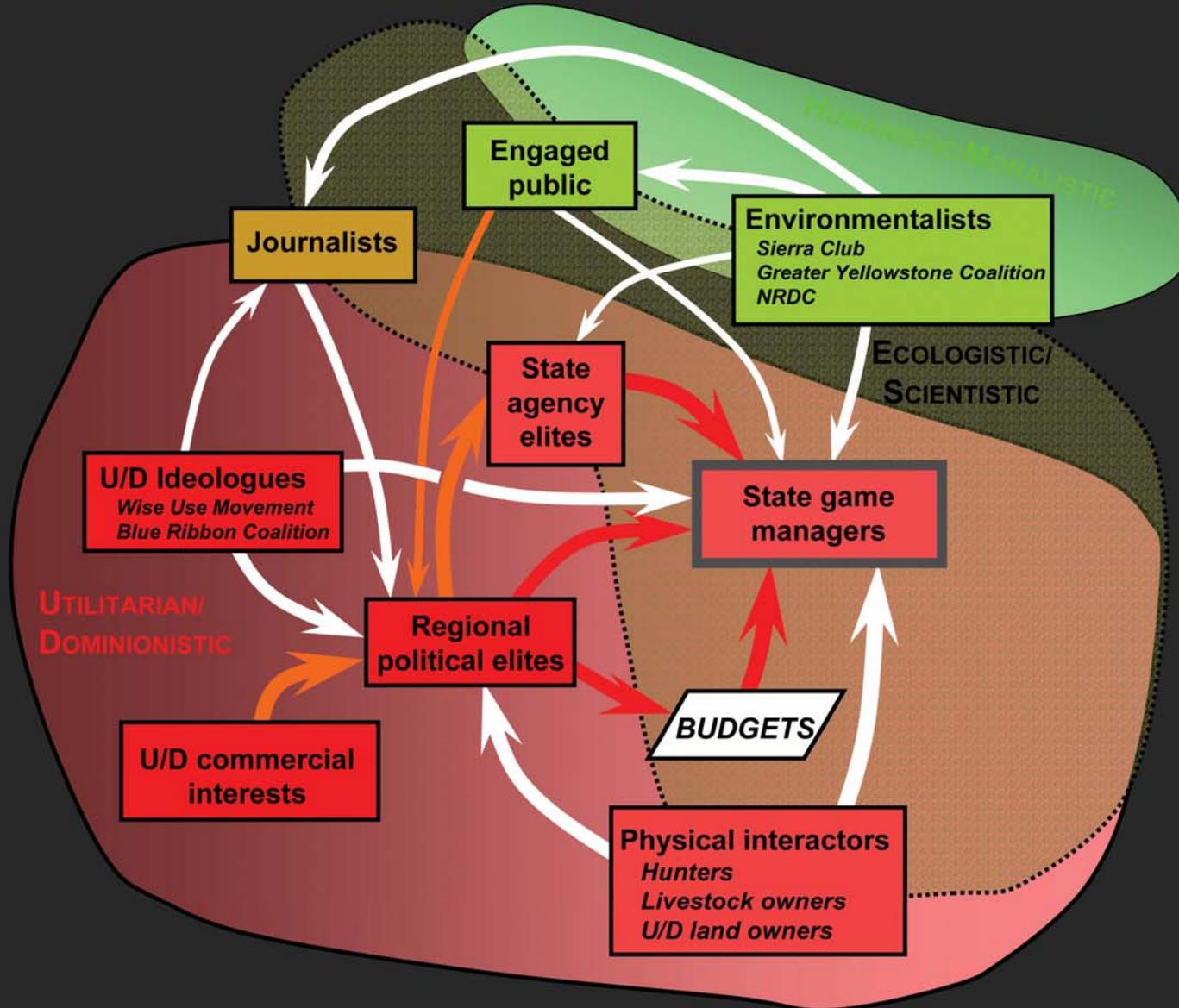
# Social Process

## The Environmentalist's coercive option



# Social Process

## The world with delisting



# Key features of social → decision process

- Intrinsic drift towards service of D/U **special interests** in regional decision processes
- Pervasive **coercion** or threat of coercion
- High levels of **conflict**, especially between agency decision-makers and certain environmentalists
- Pervasive **respect deprivation**

# Key features of social → decision process

- Intrinsic drift towards service of D/U special interests in regional decision processes
- Pervasive coercion or threat of coercion
- High levels of conflict, especially between agency decision-makers and certain environmentalists
- Pervasive respect deprivation

**Failure to find common ground  
& achieve common interest solutions**

## **Key features of social → decision process**

**We are failing to realize liberal  
democracy and civil society**

*Which naturally leads to...*

**The politicization of science**

**A basic point...**

**Information has no intrinsic value.**

**and another...**

**People value information (including scientific information) to the extent that they perceive it will facilitate attainment of desired indulgences or avoidance of undesired deprivations.**

**INDULGE**

**Power/Wealth Ingroup  
(Commerical interests)**



**DEPRIVE**



**INDULGE**

**Power/Wealth Outgroup  
(Environmental interests)**

# Values

*(Lasswell & McDougal 1992)*

Well-being

Skill

Respect

Enlightenment

Affection

Wealth

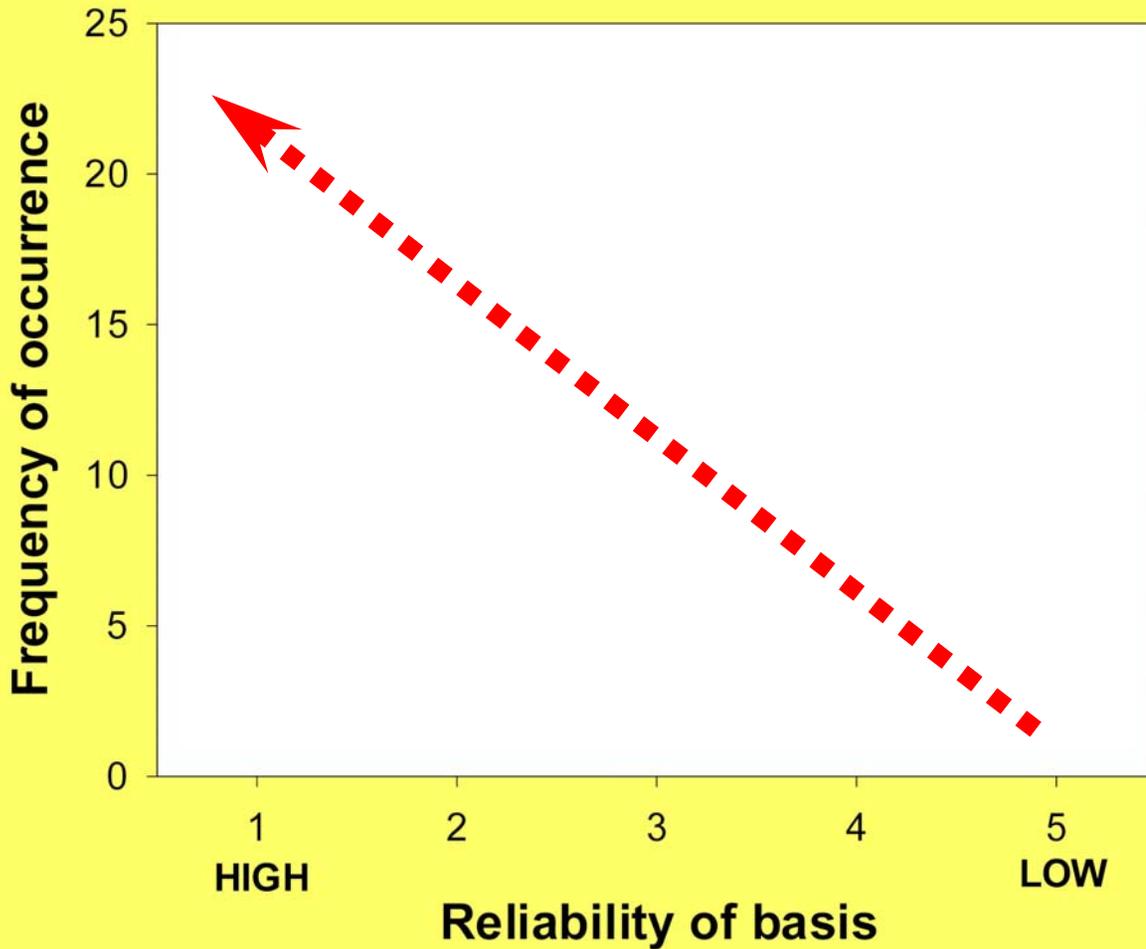
Rectitude

Power

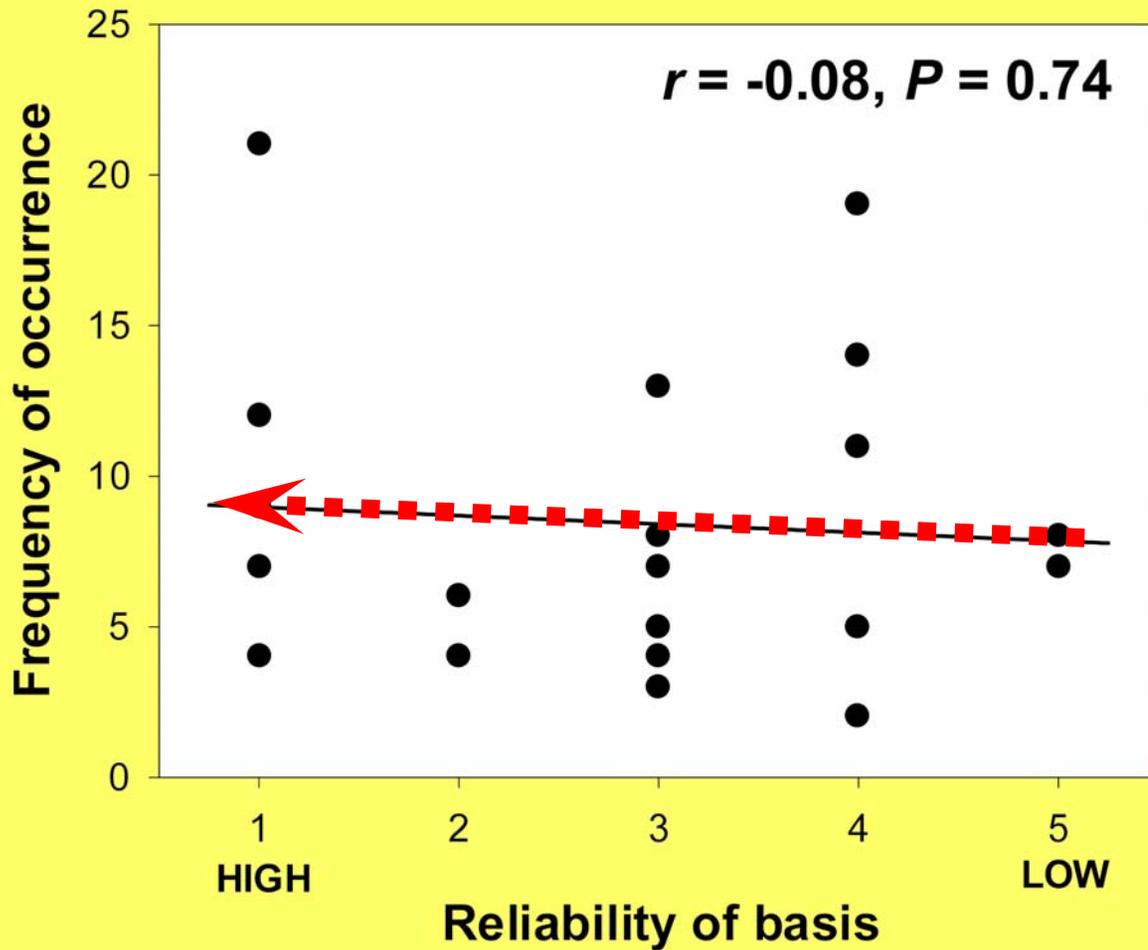
Strategic & political  
use of science



The diagram features a vertical list of values on the left. A red box highlights 'Enlightenment'. Three solid red arrows originate from the right side of the 'Enlightenment' box and point to 'Wealth', 'Rectitude', and 'Power'. A dashed red arrow also originates from the right side of the 'Enlightenment' box and points to 'Rectitude'.



- High 1** Directly supported by >1 peer-reviewed publications
- 2** Supported by unpublished studies or indirectly by published analysis
- 3** Inference from a corpus of knowledge
- 4** Speculation or assertion without known analytical basis
- Low 5** Contrary to peer-reviewed publications or other published analysis



High 1

Directly supported by >1 peer-reviewed publications

2

Supported by unpublished studies or indirectly by published analysis

3

Inference from a corpus of knowledge

4

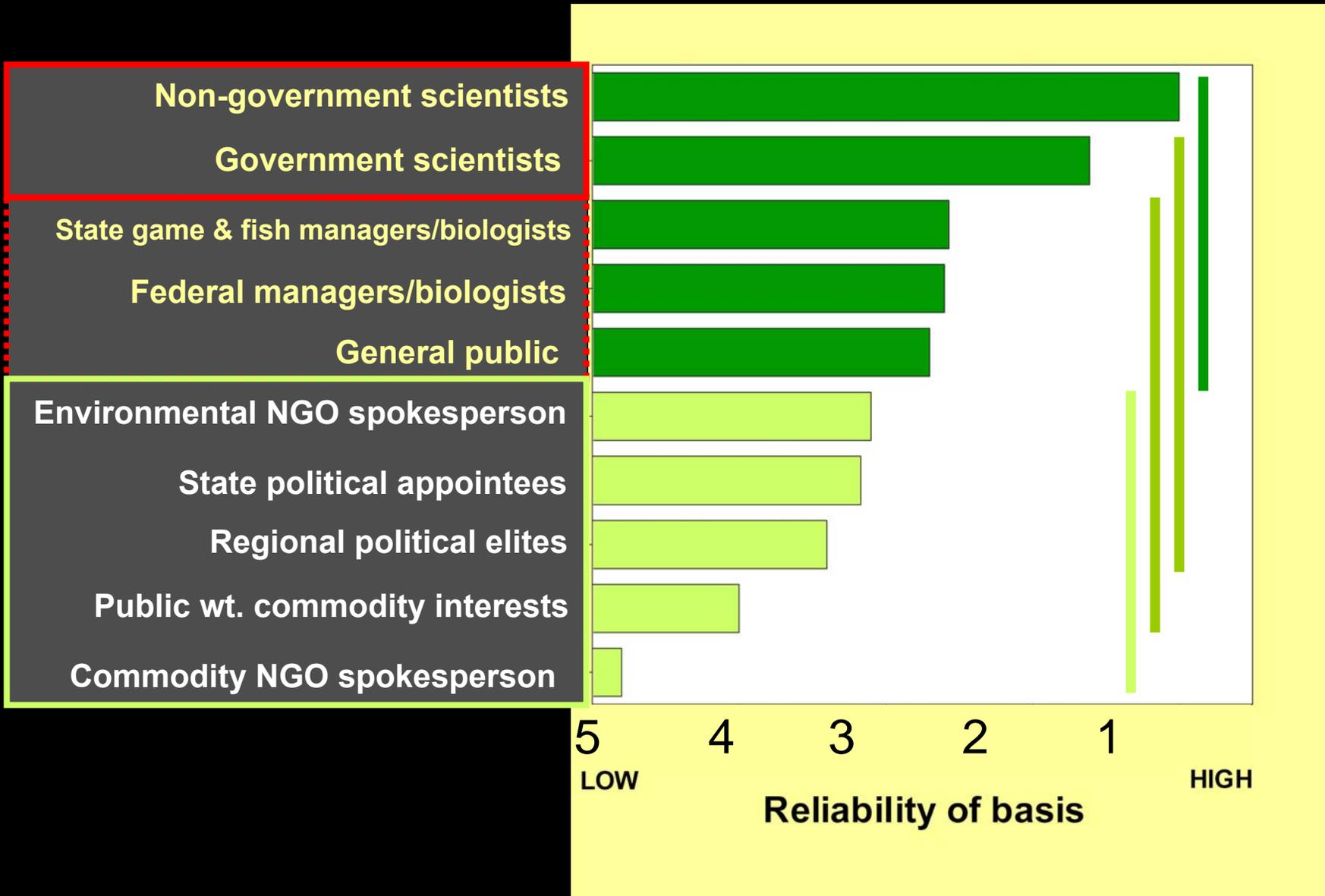
Speculation or assertion without known analytical basis

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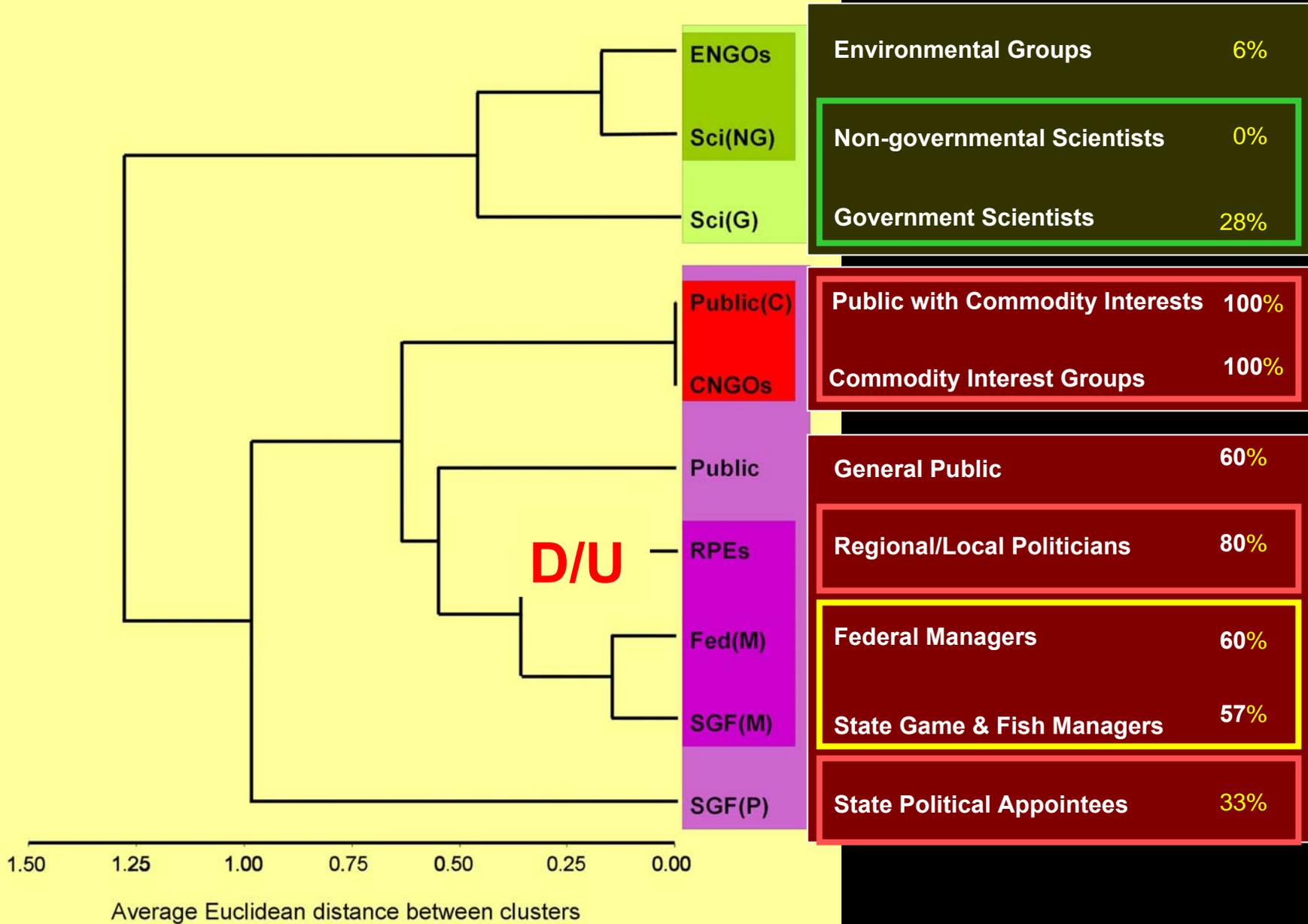
# Reliability of basis for publicly stated "Facts"

Differences among participants



# Selective use of "facts"

**% OF "FACTS" SUPPORTING DELISTING**



?

**Selective use of burden of proof...**

**Requiring proof that an effect does exist**

**Requiring proof that an effect does not exist**

**Invoking weight of evidence**

***Which is fundamentally about allocating risk.***

# The “scientific” issues...

To what extent has the population increased & spread?

*Bias, sample uncertainty, & allocation of risk*

To what extent has natural factors versus management intervention caused population increase?

*Model specification, bias, & allocation of risk*

How many bears & how much bear range is enough?

*Allocation of risk (varies disguised as science)*

How to conduct & interpret a PVA.

*Model specification & allocation of risk*

**Partisan allocation of risk is a key part of the politicization of “science”**



Science has been politicized to serve the *special interests* of government agents & agencies.

**Career advancement**

**Cultivation of budgetary allies**

**Defense of agency prerogatives**

**Defense of agency cultural norms**

Science has been politicized to serve the *special interests* of government agents & agencies.

Career advancement

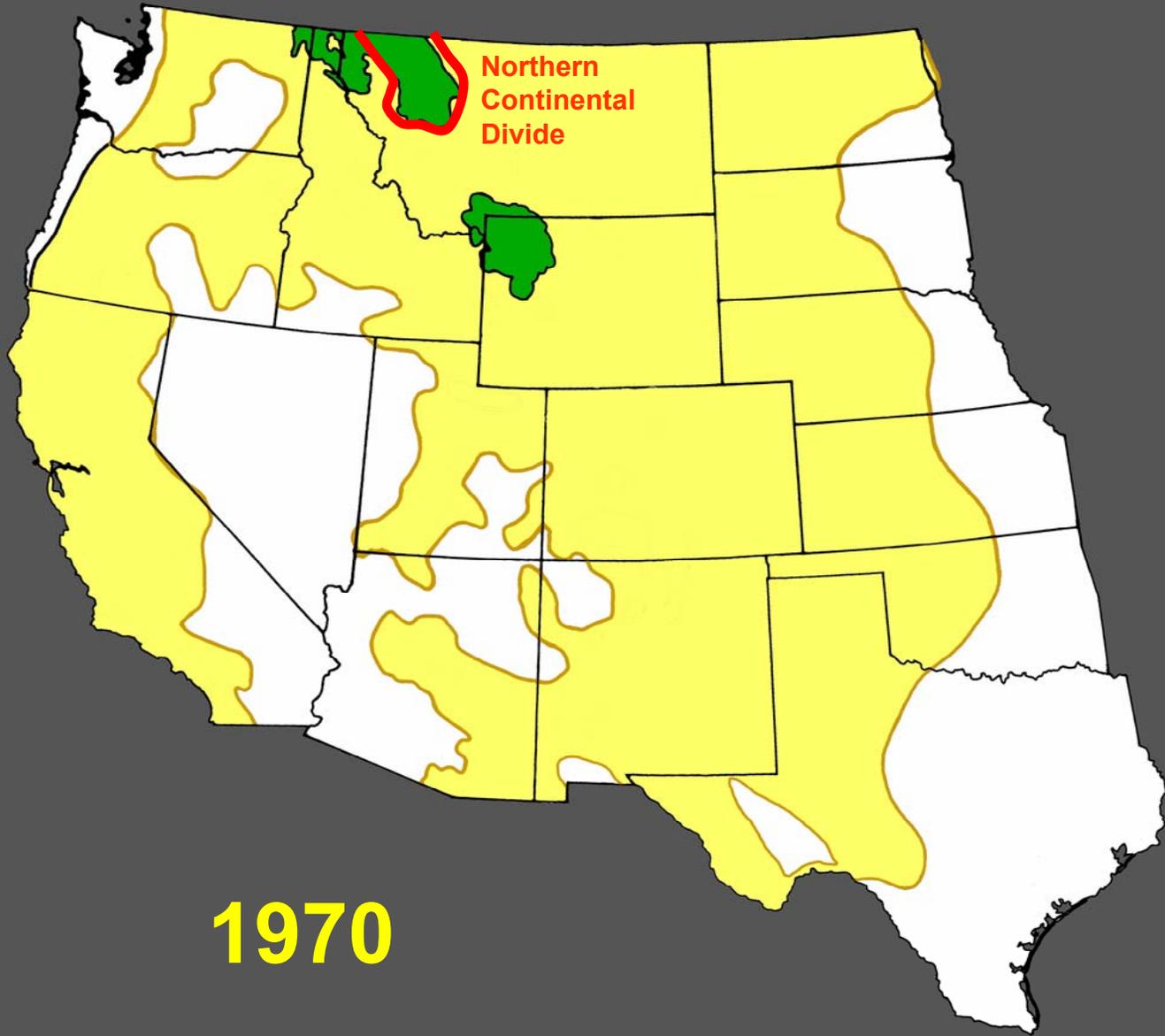
Cultivation of budgetary allies

Defense of agency prerogatives

Defense of agency cultural norms

**Betrayal of the public trust**

# The Bureaucratized (& *Politicized*) Practice of Science & Management

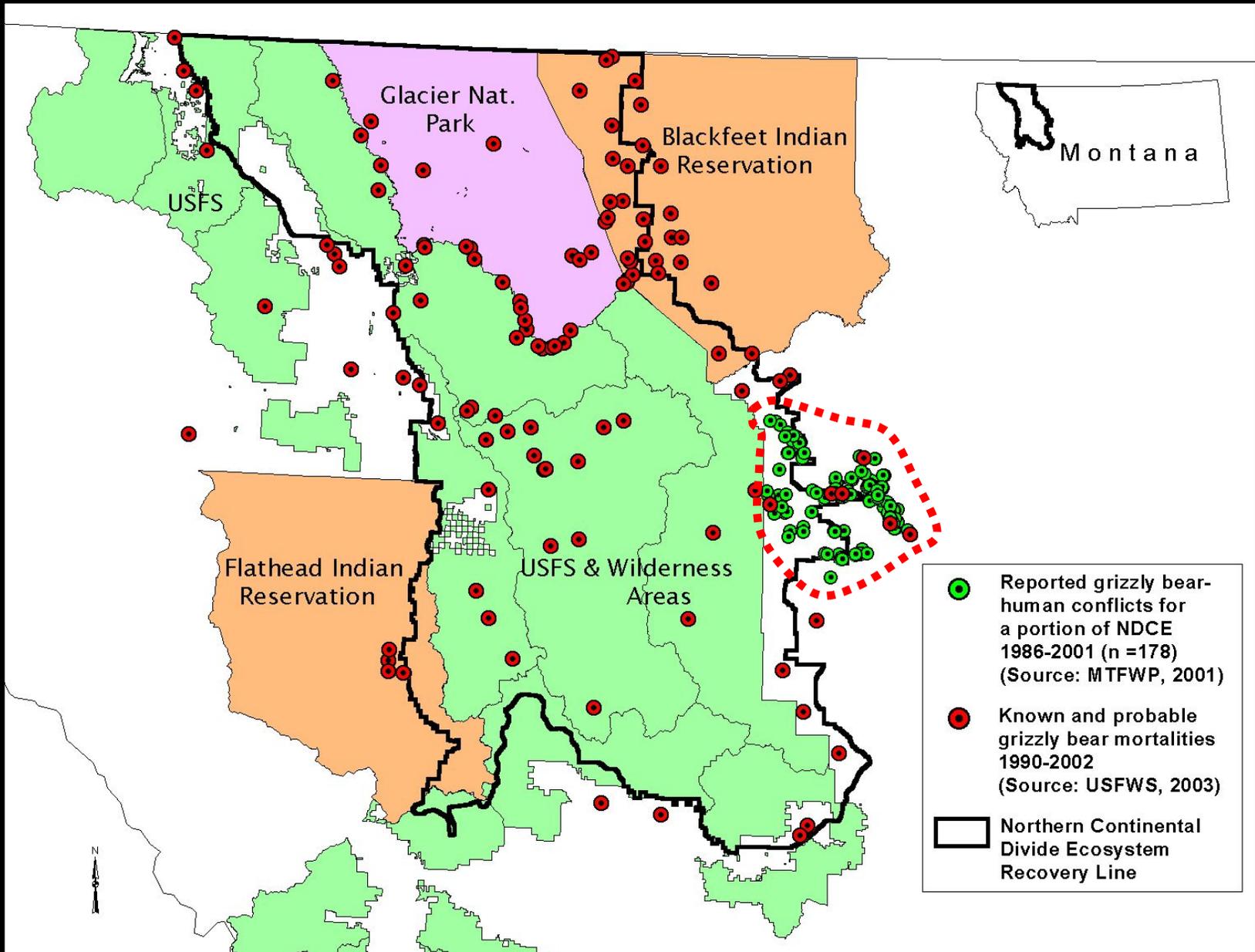


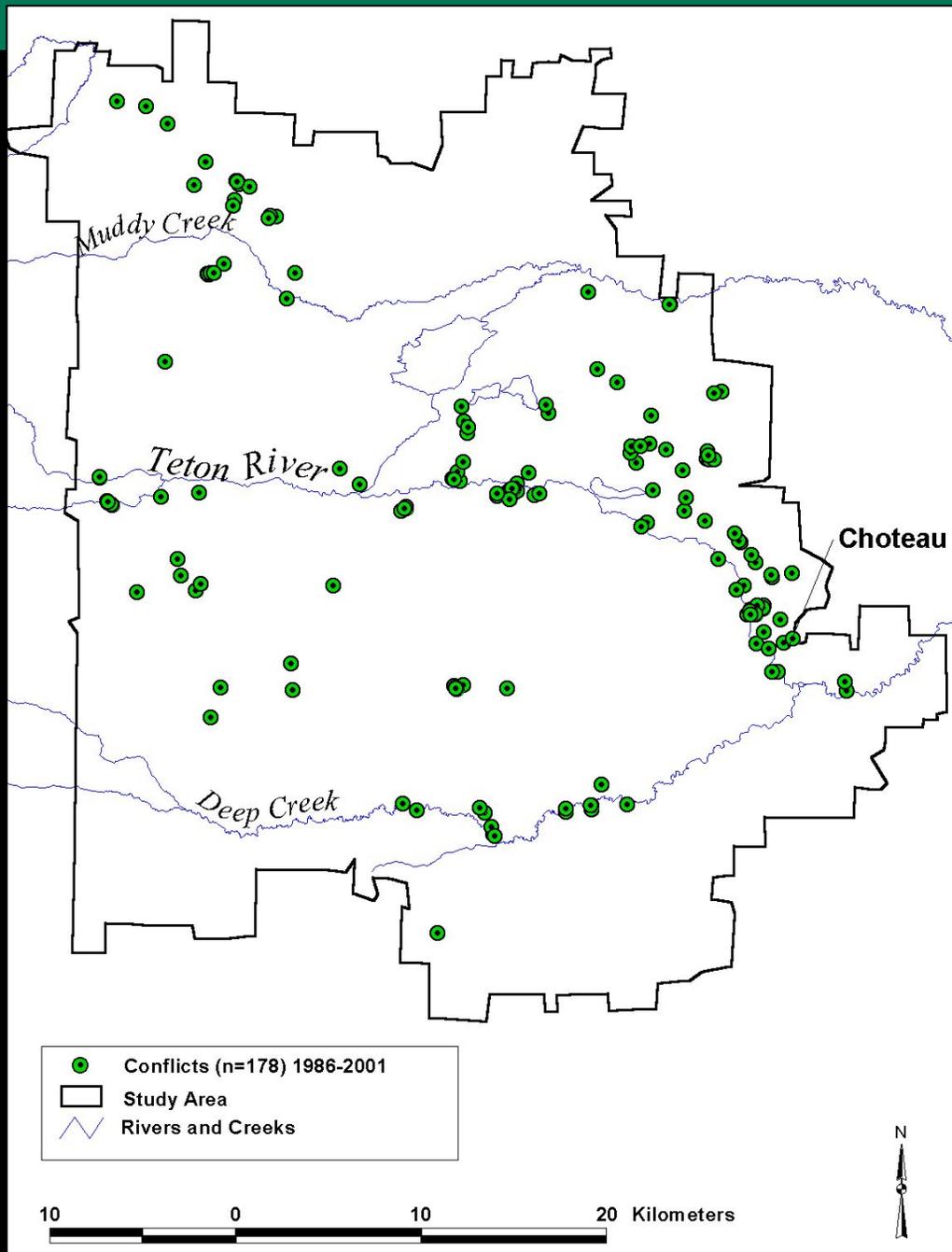
1970

# Humans are the primary cause of death for grizzly bears in the U.S. Rocky Mountains

Of over 200 bears that were radiomarked and died between 1974 and 2000, *80-95% were killed by a human.*

*(Mattson et al. 1996,  
McLellan et al. 1999)*





## Conflicts along the Teton River (East Front, MT)

# Goals

Engage in a way that fosters ***common ground*** & ***belief*** in relevant information

Minimize ***symbolic politics*** by pragmatically engaging with ***concrete issues***

# Goals

Engage in a way that fosters *common ground* & *belief* in relevant information

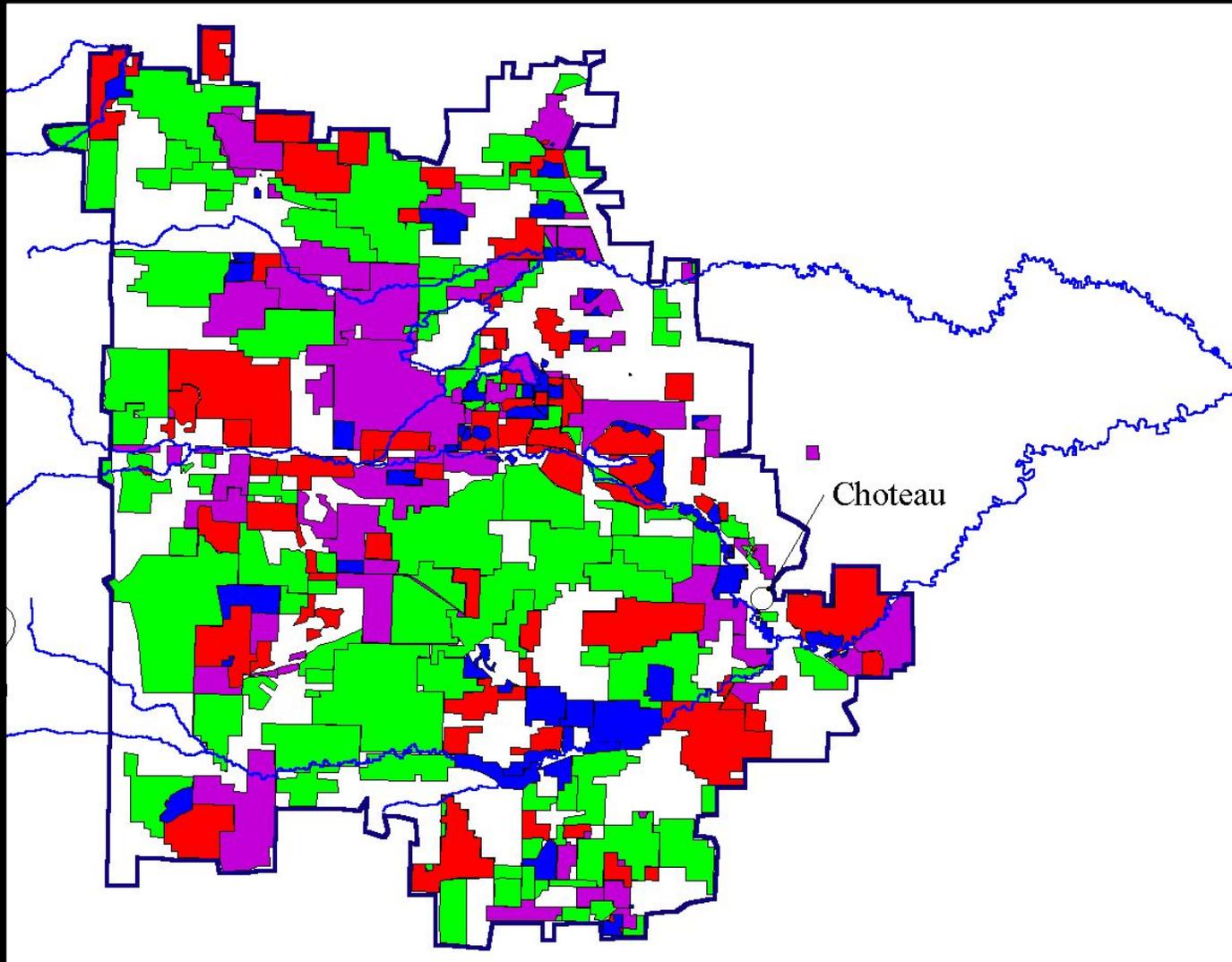
Minimize *symbolic politics* by pragmatically engaging with *concrete issues*

CIVILITY  
RESPECT  
AFFECTION

# The Scientist as a Social Agent

**TRUST**  **LEGITIMACY**

# Participatory mapping



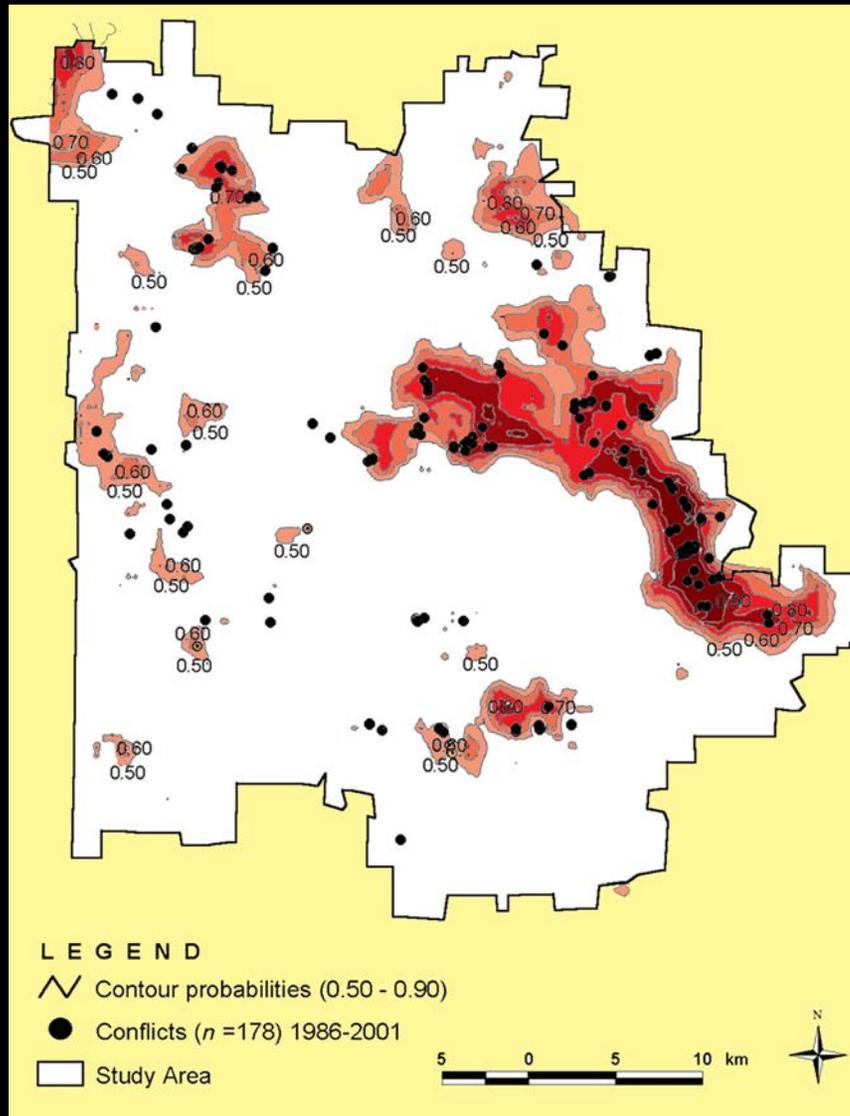
Calving Areas

Spring Pastures

Summer Pastures

Fall Pastures

## Outcomes



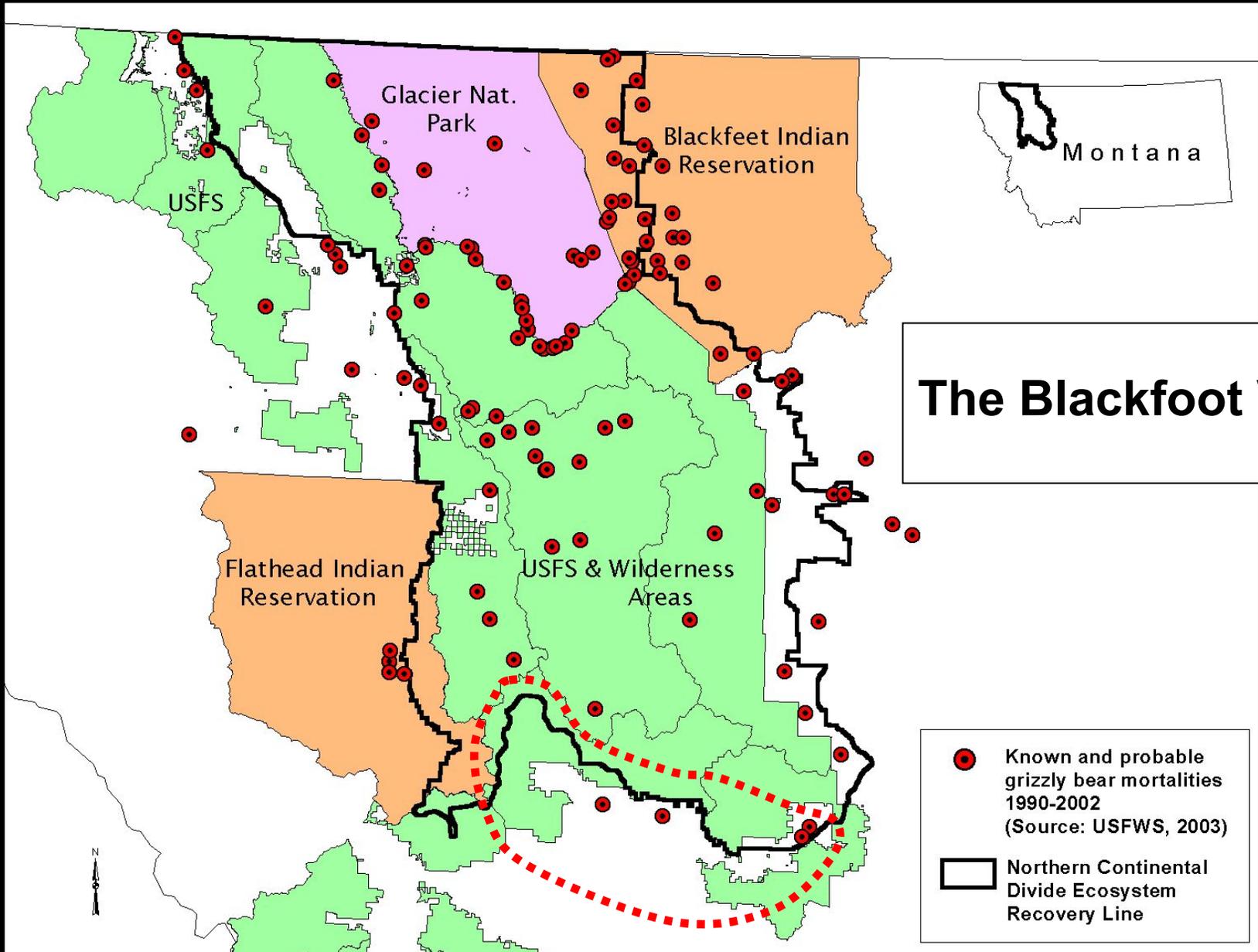
**Explanatory & predictive models**

# Outcomes

**But...**

***Lack of institutional capacity,  
formal or otherwise***

# Blackfoot Valley, MT



## The Blackfoot Challenge

***A landowner driven group...***

**9 committees**

**400 landowners**

**20 federal and state agencies**

**18 local and private collaborators**

**25 contractors**

# The Blackfoot Challenge

## Assets of the Blackfoot Challenge

---

- **Trust**
- **Long term relations**
- **Comfort with agencies**
- **Communication forum**
- **History of success**
  - Weed management*
  - Water quality etc...*
  - Conservation easements*
- **Local Leadership**

*An opportunity to  
apply the lessons  
of the East Front*

# The Blackfoot Challenge

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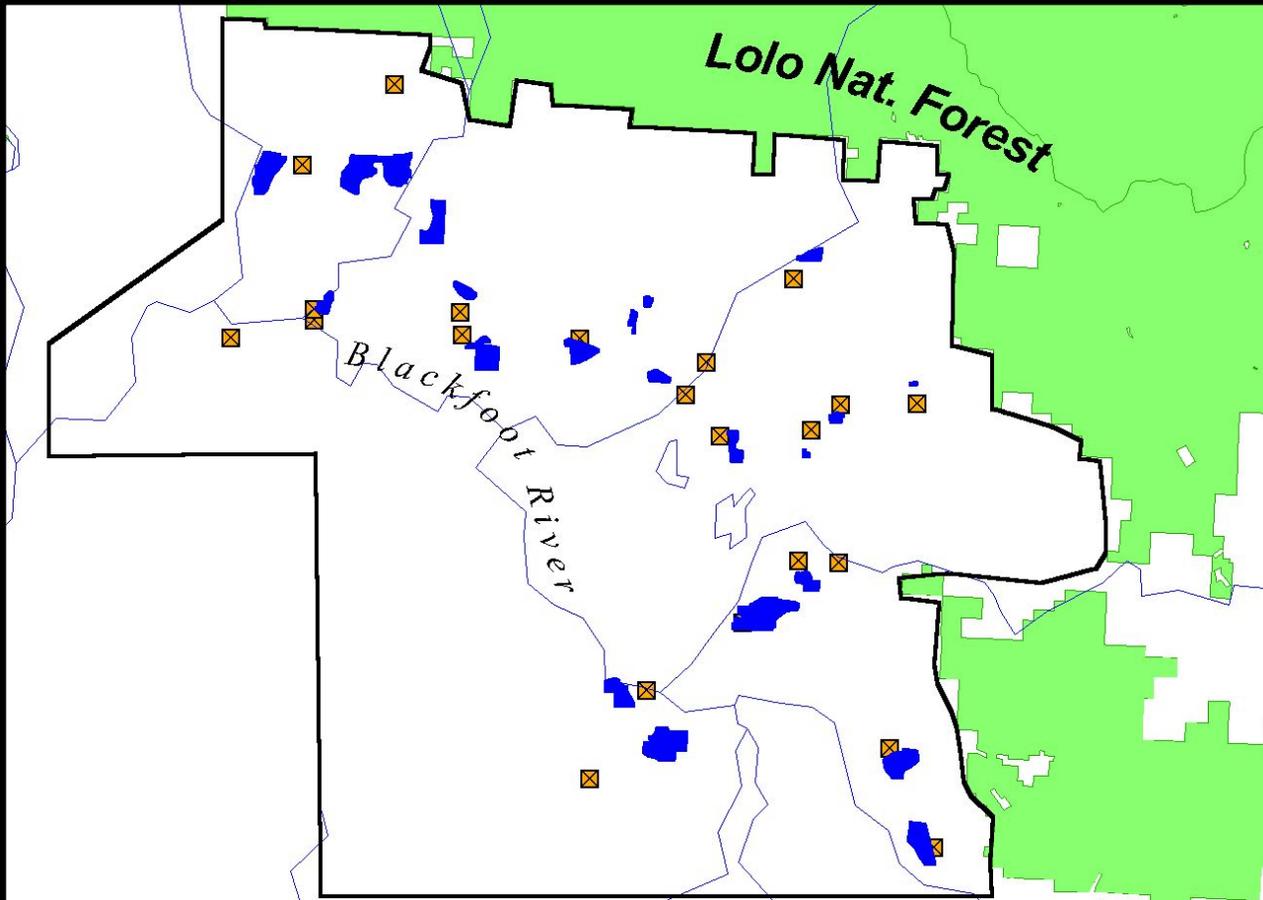
**SOCIAL CAPITAL  
CAPACITY FOR CIVILITY**

***An opportunity to  
apply the lessons  
of the East Front***

# The Blackfoot Challenge

## The Wildlife Committee

*To improve human-wildlife interactions in the Blackfoot watershed*



**Participatory  
mapping of  
attractants**

# The Blackfoot Challenge

## The Wildlife Committee

*To improve human-wildlife interactions in the Blackfoot watershed*

**Participatory projects: *electric fencing***

# The Blackfoot Challenge

## The Wildlife Committee

*To improve human-wildlife interactions in the Blackfoot watershed*

Participatory projects: *electric fencing*

**90% of beehives electrified**  
**9 largest calving areas electrified**

# The Blackfoot Challenge

## The Wildlife Committee

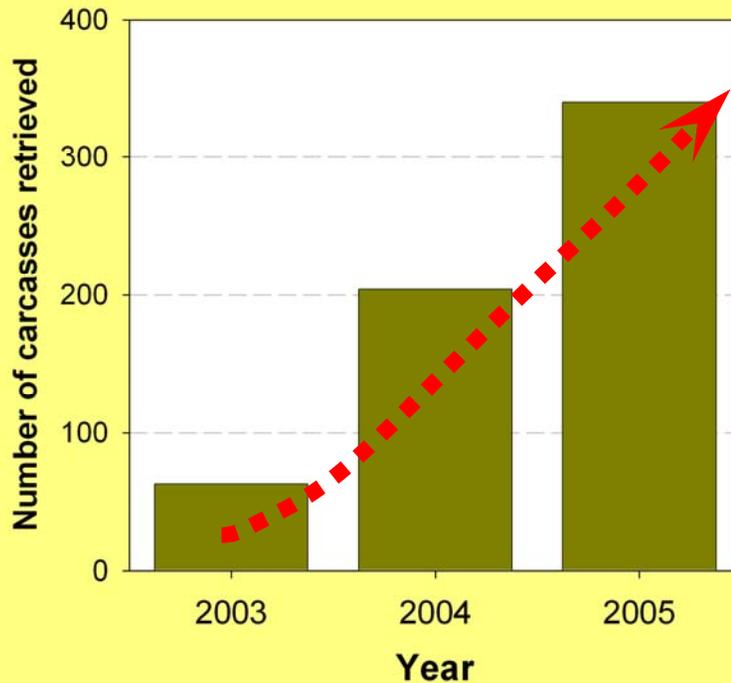
*To improve human-wildlife interactions in the Blackfoot watershed*

**Participatory projects: *carcass pick-up & disposal***

# The Blackfoot Challenge

## The Wildlife Committee

*To improve human-wildlife interactions in the Blackfoot watershed*



Pa

*pick-up & disposal*

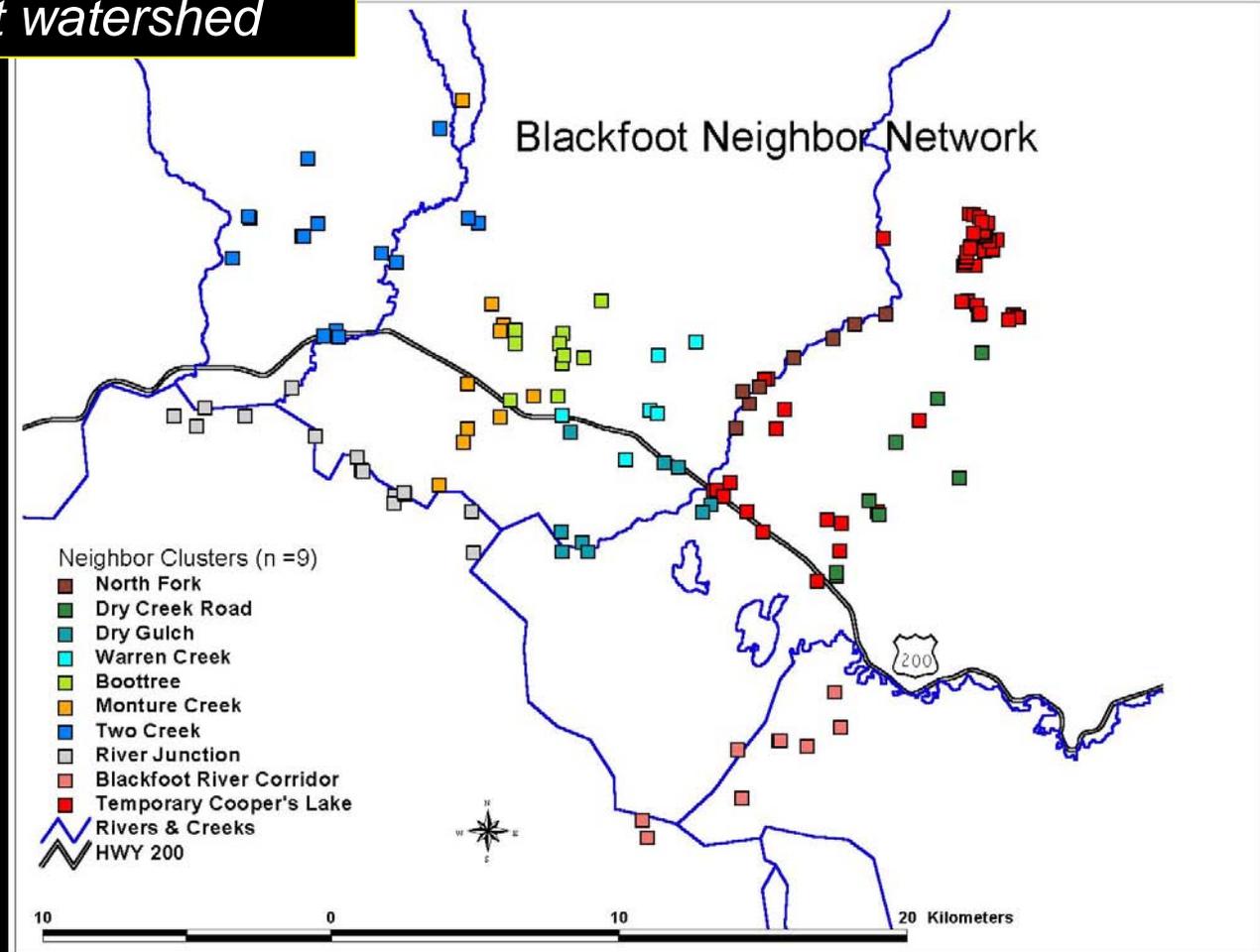
**60% participation**

# The Blackfoot Challenge

## The Wildlife Committee

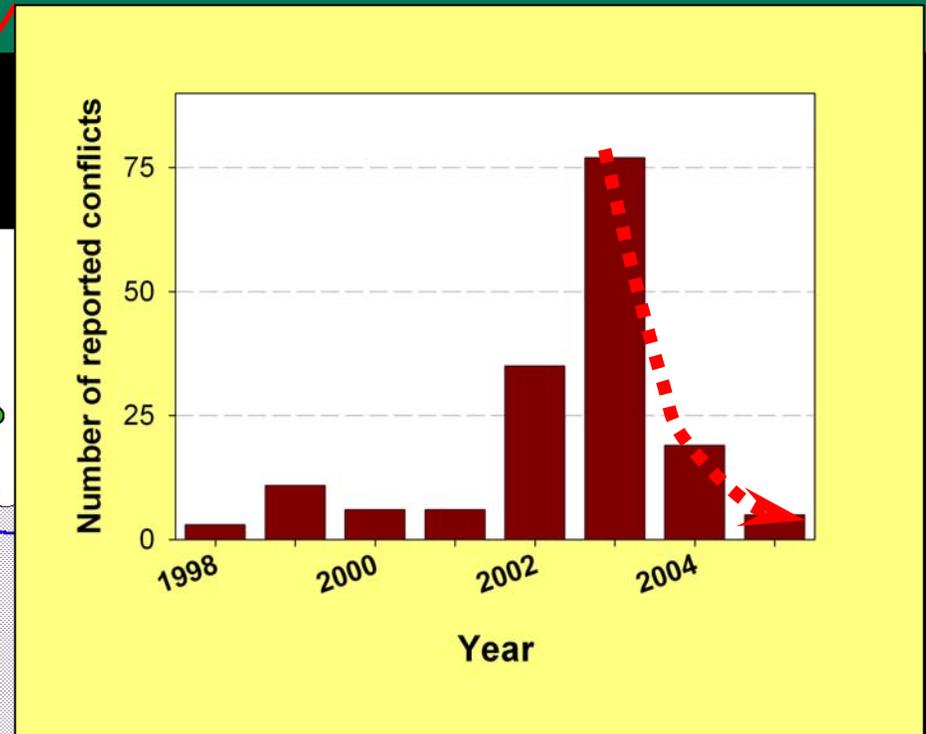
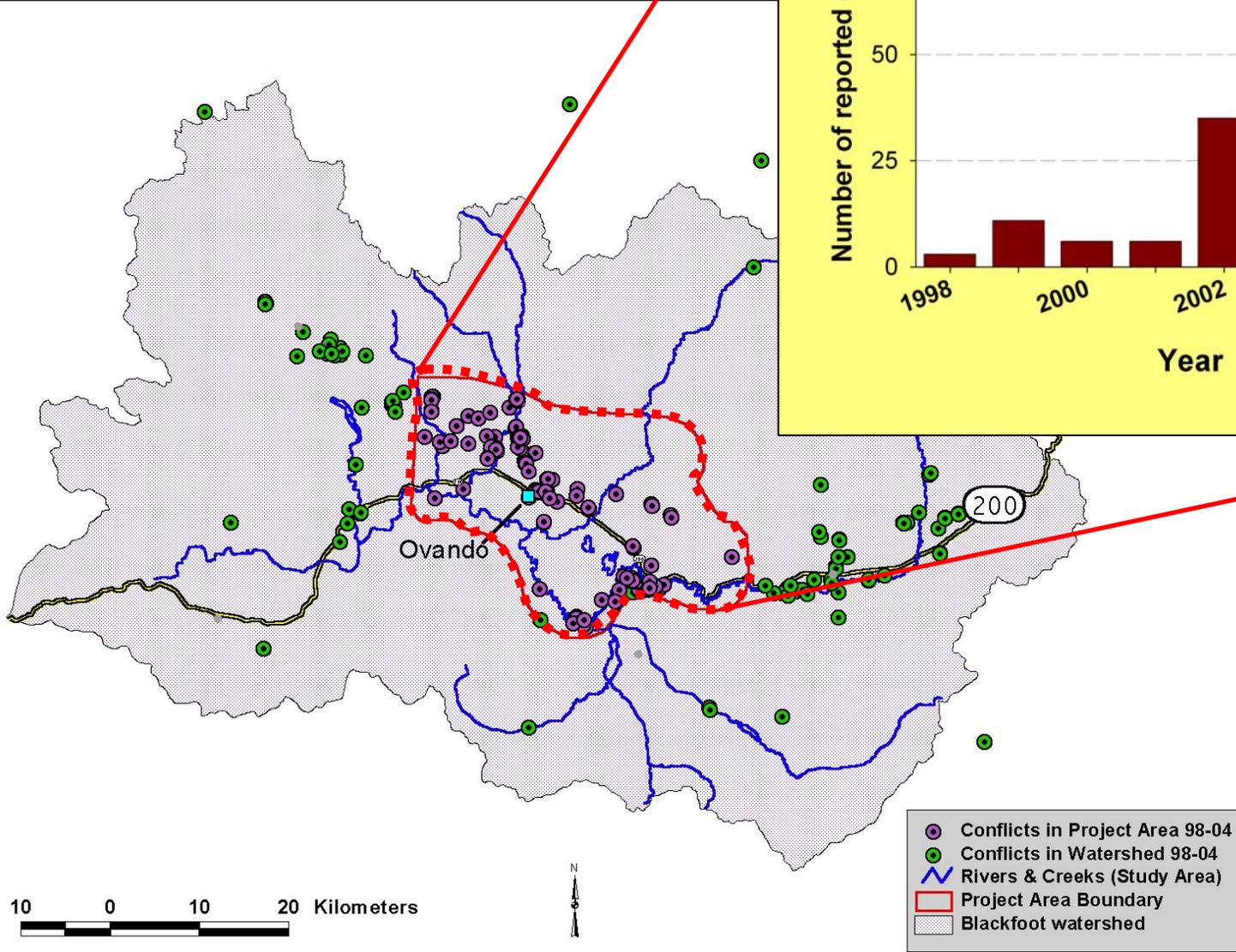
*To improve human-wildlife interactions in the Blackfoot watershed*

Participatory projects:



# Blackfoot Valley, MT

## Human-grizzly bear conflicts



## Key features

**Civil & respectful**

**Participatory**

**Focused on pragmatics**  
*(rather than symbolic politics)*

**Empowered**