Of Bounties and Bubbles: Why Academics and Advocates Fail to Influence Predator Management





### A Utah Case Study





### **Utah Mule Deer Harvest**



### **Utah Mule Deer Harvest**



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### **Mule Deer Crisis!**

"Mule deer are vanishing. In Colorado, Wyoming and Utah, populations are half what they were in the 1970s." --NPR, Jan 4, 2013





## Who's preventing deer populations from growing?







### **Black Bear Predation on Fawns**

- LaSal Mtn (Smith 1983):
  - Bears accounted for 18% of the predation and 13% of the mortality
- Book Cliffs (Karpowitz 1984):
  - No mortalities attributed to bears



### **Cougar Predation on Fawns**

- LaSal Mtn
  - Cougars: 4% of predation, 3% mortality
- Book Cliffs
  - Cougars: 22% of predation, 13% mortality



### **Coyote Predation on Fawns**

- LaSal Mtn:
  - Coyotes: 50% of predation, 36% of mortality
- Book Cliffs Study:
  - Coyotes: 78% of predation, 44% of mortality



#### Conclusions

#### Coyotes are the primary predator on deer fawns



### Utah's Response: 2012

Mule Deer Protection Act (S.B. 245) DWR to contract with public to reduce coyote populations for the benefit of mule deer. General (bounty) or Targeted (contract)

Predator Control Funding (S.B. 87)
\$5 fee on big game hunting licenses to fund
the removal of predatory animals

### **The Funds**

#### Mule Deer Protection Act \$500,000 for payments to public

#### **Predator Control Funding**

\$600,000 to Wildlife Services for targeted control

**TOTAL:** \$1,100,000

#### Dollars Spent Annually on Predator Control in the Western U.S.



### **General Compensation Program**

- Register First
- Request they remove coyotes in deer habitat
- Request removal when coyote control is most likely to be effective
- Require lower jaw plus either scalp with ears
- Require location of kill
- Receive a check for \$50 per coyote



### **Targeted Compensation Program**

- Units with trophy, social pressure, or low fawn:doe
- Contracts for up to \$10,000



## Results

General Program:	<u>2013</u>	<u>2014</u>
Participants	1055	1096
Coyotes	7119	7041
Paid	\$355,950	\$352,050
Targeted Program:		
Contracts:	\$25,000	\$140,000
Coyotes	41	236
Wildlife Services	3349	2605

Source: UDWR

### **Effectiveness?**





















# **Effect on fawn:doe**





----Population estimate



----Population estimate



----Population estimate



-- Population estimate

#### **Did we make more deer?**



#### **Descriptive Statistics, Coyotes**

<u>2013</u> <u>2014</u>

Gender

52% M, 46% F 52% M, 46% F

Age	50% YoY	NA
	83% <2	

### **Timing of Public Take 2013**



### **Timing of Public Take 2014**


#### **Timing of Public Take 2014**



#### **Timing of Public Take 2014**



#### **General Coyote Removal 2012-2013**



#### **General Coyote Removal 2012-2013**

Deserts where coyotes are vulnerable



#### **Removal vs. Deer Summer Range**



#### **Removal vs. Deer Summer Range**



#### **Predator control is potentially useful when:**

- Habitat is not the limiting factor
- Predation is identified as a limiting factor
- Individual culprits targeted
- Ballard et al. 2003
- Bartmann et al. 1992
- Hurley et al. 2010



## **Predator control is potentially useful when:** Bounty

- Habitat is not the limiting factor
- Predation is identified as a limiting factor → address
- Individual culprits targeted
- Ballard et al. 2003
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does not

#### **Other factors limit deer?**



#### **Other factors limit deer?**



#### Habitat and precipitation limits deer



#### **Did we make more deer?**



#### Did we make more deer?

# No Within range of historic variation Two very mild winters



#### Why do these programs persist?

#### **Do Something Now!**



#### Habitat limiting?





#### Habitat takes time...

#### <u>Utah</u>

- 4.4% of 28.6 million acres treated
- Pinyon-Juniper expands at 100,000 acres/year



#### A complex message...



MEAN JUNE PRIMARY PRODUCTION

#### A simple message...



**MEAN JUNE PRIMARY PRODUCTION** 



#### A simple message...

## Killing predators makes participating people feel better



#### Life of Wildlife Managers

- Real problems, blunt tools
- Limited budgets
- Time immediacy
- Beaten by political winds
- Responsibility without capability or authority



#### What can managers do?

- We can't stop loss of habitat
- We can't control yearly weather
- We can't move fast enough
- Managers can't manage human expectations







#### Still, if the science says...

"I am for the death penalty. Who commits terrible acts must get a fitting punishment...

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**Brittany Spears** 

#### **Understand Biological Concepts?**

- Only 50% of Americans don't know that:
- Antibiotics don't kill viruses
- It takes one year for Earth to orbit the sun
- Lasers don't focus sound waves
- 45% of Americans consider the earth to be < 10,000 years old.

Shaefer and Beir 2013

## Are our schools and societies failing?





#### 85% complete High School



85% complete High School28% obtain Bachelors



85% complete High School28% obtain Bachelors9% obtain advanced degree



85% complete High School28% obtain Bachelors9% obtain advanced degree

Professors: YOU are the 1%



#### Academic Research

- Publish, publish, publish
- Have to be best in world
- Narrow, focused, existence
- Pride in "Pure Science"
- Question Driven



- Who is the audience for a scientific publication?
- The policy makers, public or just other researchers?

What is the mission of the University?

Grants and publications?

Or

Public participation, teaching and outreach?

![](_page_70_Picture_4.jpeg)

What is the mission of the University?

Grants and publications? Or

Public participation, teaching and outreach? Or Football?

![](_page_71_Picture_3.jpeg)
#### What is the roll of the advocate?

- Make social change?
- Judge?
- Objectively use science?
- Feel better?
- Make other people feel better?
- While making money?
- Or...Inform?



#### **Echo-chambers:**

- Who really attends public policy meetings?
- Academics rewarded by esoterica, not pragmatism
- Advocates rewarded by outrage, not pragmatism
- We are here, flocked together in a comfort zone
- Where was the outrage with the bounty?



## **Breaking the Bubbles**

#### Individuality in People

- Many people hunt, many not
- Many eat meat, many not
- Is sanctimonious proselytizing of morality effective?
- Individualistic people methods would be more efficient
- Who is our audience, what is our goal?

### Comfort Zone



## Comfort Zone













#### Comfort Zone



### Thank you...

# **Coyote Harvest**

#### 2007-2012

Mean Fur/incidental: 7304 Mean Wildlife Services: 4172 Range: 8740-14,076 Overall mean: 11,476

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#### 2007-2012

Mean Fur/incidental: 7304 Mean Wildlife Services: 4172 Range: 8740-14,076

During Program	<u>2013</u>	<u>2014</u>
Fur/incidental:	5749	5784
Wildlife Services:	3349	2605
Total:	13,383	12,769