Wildlife Teeming with Our Rangelands: Management Decisions for Deer and other Wildlife - Central Coast Rangeland Coalition Fall 2013 Meeting
But there’s a much longer history...

“Sport” Hunting
Negative connotation, but...
- Sportsmanlike
- Ethical Hunting - Fair Chase
- Don’t waste meat
- Conservation-oriented

Sport hunters led reforms, became conservationists

Markets
Wildlife Restoration
Ducks Unlimited

What’s the point of all this?
Today’s hunting has roots in conservation, and a new generation is interested in local organic and wild foods
Arguably more humane than our factory farmed meat industry
The public broadly supports hunting (74%) and the right to hunt (94%) (National Shooting Sports Foundation 2011).

Challenge conservation organizations to think differently about hunting

My background
Researching Hunting in California & Spain
Value of recreational hunting on private land
- ~ 60 Interviews
- Hunting Symposiums
- Hunter and hunting club member

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Needs
- Wildlife habitat
- Game animals
- Ability to recruit and manage hunters

Types of Hunters – What’s your market?
- Trophy
- Meat
- Nature

Organizational Setup
- Long term annual lease
- Day-use fees
- Outsource to Outfitter

What are the benefits?

Gross Revenue

<table>
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<tr>
<th>Tier</th>
<th>Combined Gross Revenue</th>
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<tbody>
<tr>
<td>1</td>
<td>$35.3</td>
</tr>
<tr>
<td>2</td>
<td>$24.2 - $29.2</td>
</tr>
<tr>
<td>3</td>
<td>$10 - $13.5</td>
</tr>
<tr>
<td>4</td>
<td>0 - $4.8</td>
</tr>
</tbody>
</table>

Cattle: $2.5 - $29/acre
Hunting: $0.23 - $13/acre

Conservation Benefits
- Data collection
- Invasive plant species
- Invasive game species
- Pigs & turkeys

Get paid instead of spending to eradicate pigs.
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Work Parties

Eyes on the ground

- Reduction of poaching
- Notify about problems
- Water developments
- fences
- Cattle
- Detect marijuana grows

Concerns

Liability

- Insurance
- Liability release forms

People who hunt for free

- Owning land is expensive
- Regulatory requirements increasing

- High hunting pressure and low success rates on many public hunting lands
- Many hunters are willing to pay for access to private land

Multiple use
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Best practices
Understanding carrying capacity of property
Know herd composition
Private Lands Management

Inventory
Camera traps
Spotlight surveys
Aging harvested deer

A vision for the future
Earn income to incentivize and fund conservation of wildlife habitat
Reduce the need to subdivide property for cash
Provide additional opportunities for people to experience and interact with nature

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Start up needs
Develop contract and rules
Recruit responsible hunters or outfitter

PR Bridge
Positive Public Relations – hunters speak well of the property, Dye Creek example. Instead of a polarized hunting / environmentalist community, can build bridges
Benefits
Revenue
Conservation
Eyes on the Ground
Good PR

Overview
My background
Needs
Types of hunters
Organizational setup
Benefits and Costs
Keys to running well – from conservation and economic standpoint. Get the most potential out of the property

Market Hunting

Access to land
Was oftentimes granted to friends and family or acquaintances on request

However situation is changing
Owning land is expensive
Regulatory requirements increasing
High hunting pressure and low deer quality and numbers on many public hunting lands
Many hunters are willing to pay for access to private land – myself included

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Private Lands
1) 60% of US private
2) High Biodiversity Value
3) Most Prone to Fragmentation and Degradation

Why recreational income?
Is there a land use effect?
Test conservation argument of hunting
National estimates lacking - Differential state/local estimates

Two national datasets
- USDA Agricultural Resource Management Survey (ARMS)
  13 years
  ~227,000 observations
  ~5,800 observations with recreational income
  What farmers are earning - Supply
- U.S. Fish & Wildlife Survey of Fishing, Hunting, and Wildlife-Associated Recreation
  ~58,000 observations
  What hunters/anglers/wildlife watchers are paying - Demand

Questions
1) How much money?
   Type
   Size Class
   Where
2) How much land area?
   Type
   Size Class
   Where
3) What are the conservation and land use implication of these funds?

Analysis Techniques
'survey' package
by Thomas Lumley of U. of Washington
Sampling weights to create estimates of entire US population

Questions
1) How much money?
   Type
   Size Class
   Where
2) How much land area?
   Type
   Size Class
   Where
3) What are the conservation and land use implication of these funds?
How much money are we talking?

Lot of money in wildlife watching ownership, but...

How does the money break down by region?

Look at Midwest ownership...

Questions

1) How much money?
   - Type
   - Size Class
   - Where

2) How much land area?
   - Type
   - Size Class
   - Where

3) What are the conservation and land use implication of these funds?

Total acres much higher for hunting
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Big property sizes for hunting

How do the acres break down by region?

In terms of acreage, hunting dominates

Why such variation?

Bigger operations do it more

Questions

1) How much money?
   - Type
   - Size Class
   - Where

2) How much land area?
   - Type
   - Size Class
   - Where

3) What are the conservation and land use implication of these funds?
Conservation Activities on these lands

Higher participation in government working lands conservation programs
4.7% vs. 1.5%
Significantly more likely to pay for private conservation practices
1.3% vs. 0.6%

Land Use Implications?

1) Hunting lease funds support really large properties
2) Ownership leads to smaller land sizes
3) Owning for wildlife watching may result in ranchette-type development
4) Geographic variation

Take Away

1) Recreation funds reduce the opportunity cost of converting land to other uses.
2) Hunting has a positive impact for habitat conservation beyond Pittman-Robertson taxes
3) Informative for national and state conservation policy

Future Research

\[ P_{ght} = \frac{\exp (\beta_h X_{ght})}{\sum_{i=1}^{x} \exp (\beta_i X_{ight})} \]

Acknowledgements

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Livestock earns the most by far (forests not included)

- Livestock: 79%
- Crops: 21%

Mean Annual Recreational Income

Livestock: 87%
Crops: 13%

Farms or ranches? (forests not included)