Range / Livestock Economics

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Society for Range Management
Arizona Section

CLIMAS

ARIZONA COOPERATIVE EXTENSION
THE UNIVERSITY OF ARIZONA • COLLEGE OF AGRICULTURE AND LIFE SCIENCES

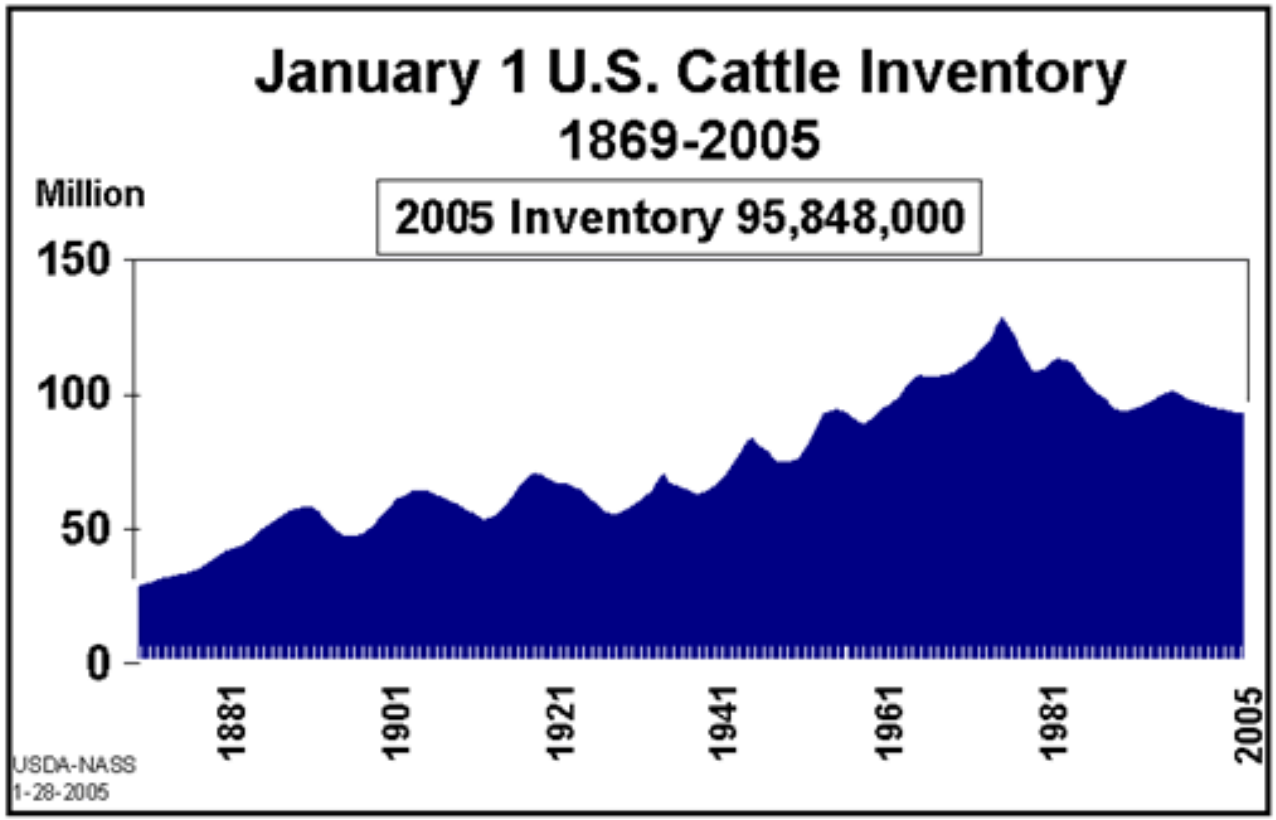
SOIL AND WATER CONSERVATION SOCIETY

Climate and Rangelands Workshop:

Beyond Boxes and Arrows –
Assessing Climate Change/Variability and
Ecosystem Impacts/Responses in Southwestern Rangelands

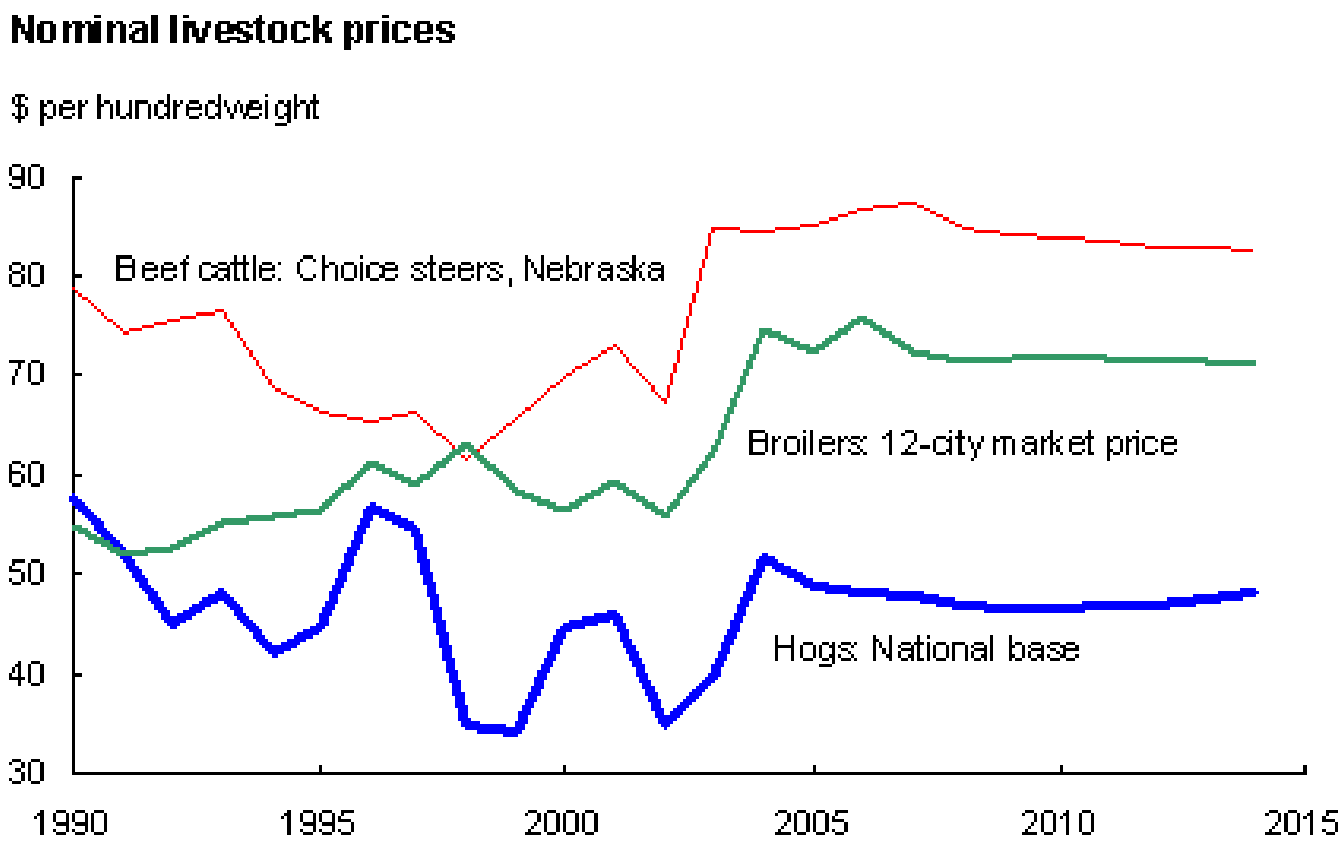
Apache Gold Casino, San Carlos, Arizona
(Five miles east of Globe on Hwy. 70)
Jan. 25-26, 2006

Cattle Cycle ...



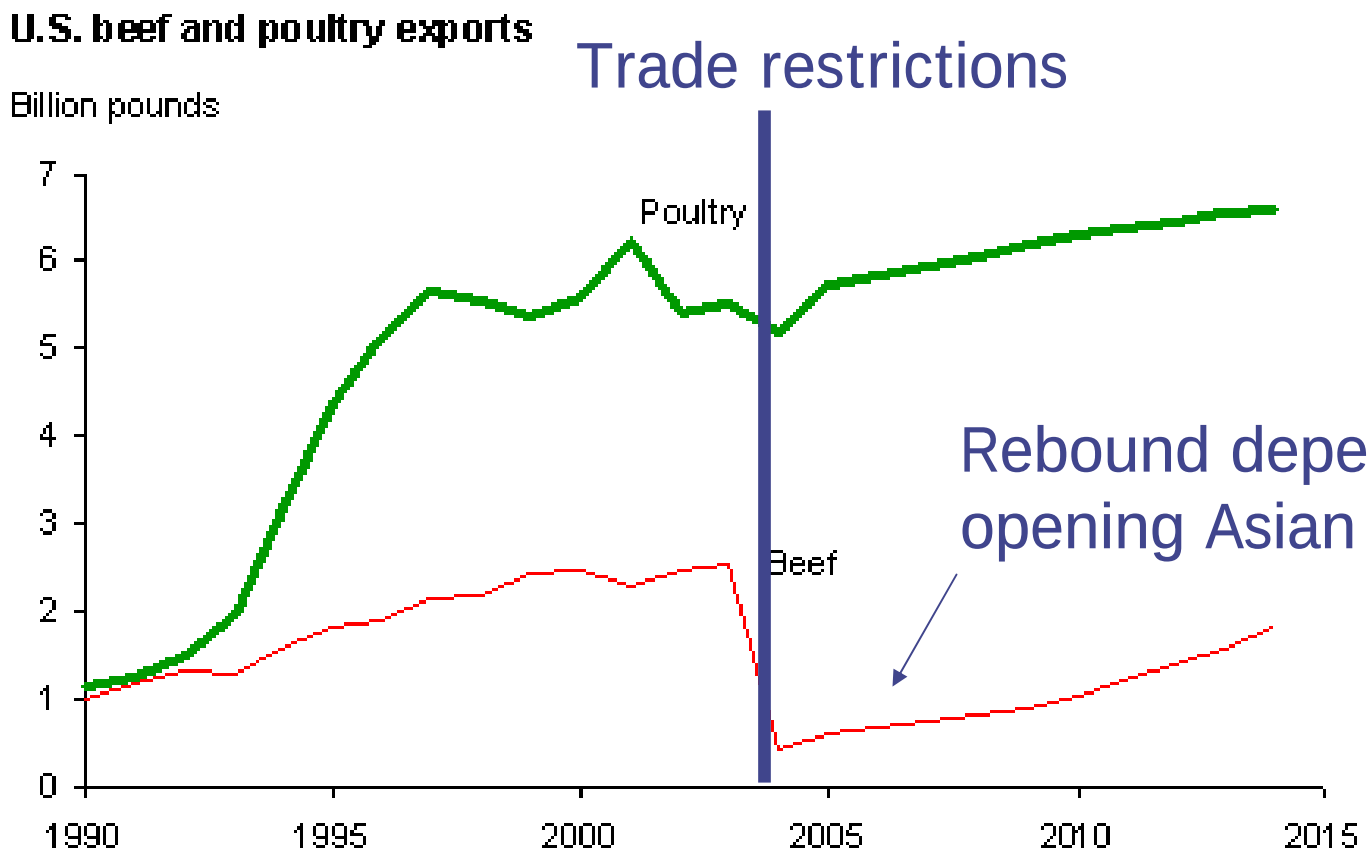
... shocks have long-lived impacts

USDA Baseline



Source: *USDA Agricultural Baseline Projections to 2014*, February 2005.
Economic Research Service, USDA.

Beef Export Picture



Source: *USDA Agricultural Baseline Projections to 2014*, February 2005. Economic Research Service, USDA.

Exports to Japan?

BBC NEWS

UK version | **International version** | About the versions | Low gr

Last Updated: Monday, 12 December 2005, 04:39 GMT

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Japan eases import ban on US beef

Japan has said it will resume imports of US beef, ending a ban imposed when BSE (mad cow disease) was found in US cattle in December 2003.

The government said beef from American cattle under 21 months old would be allowed back into the country.

Before the ban, Japan was America's largest export ma

BBC NEWS

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Last Updated: Friday, 20 January 2006, 17:42 GMT

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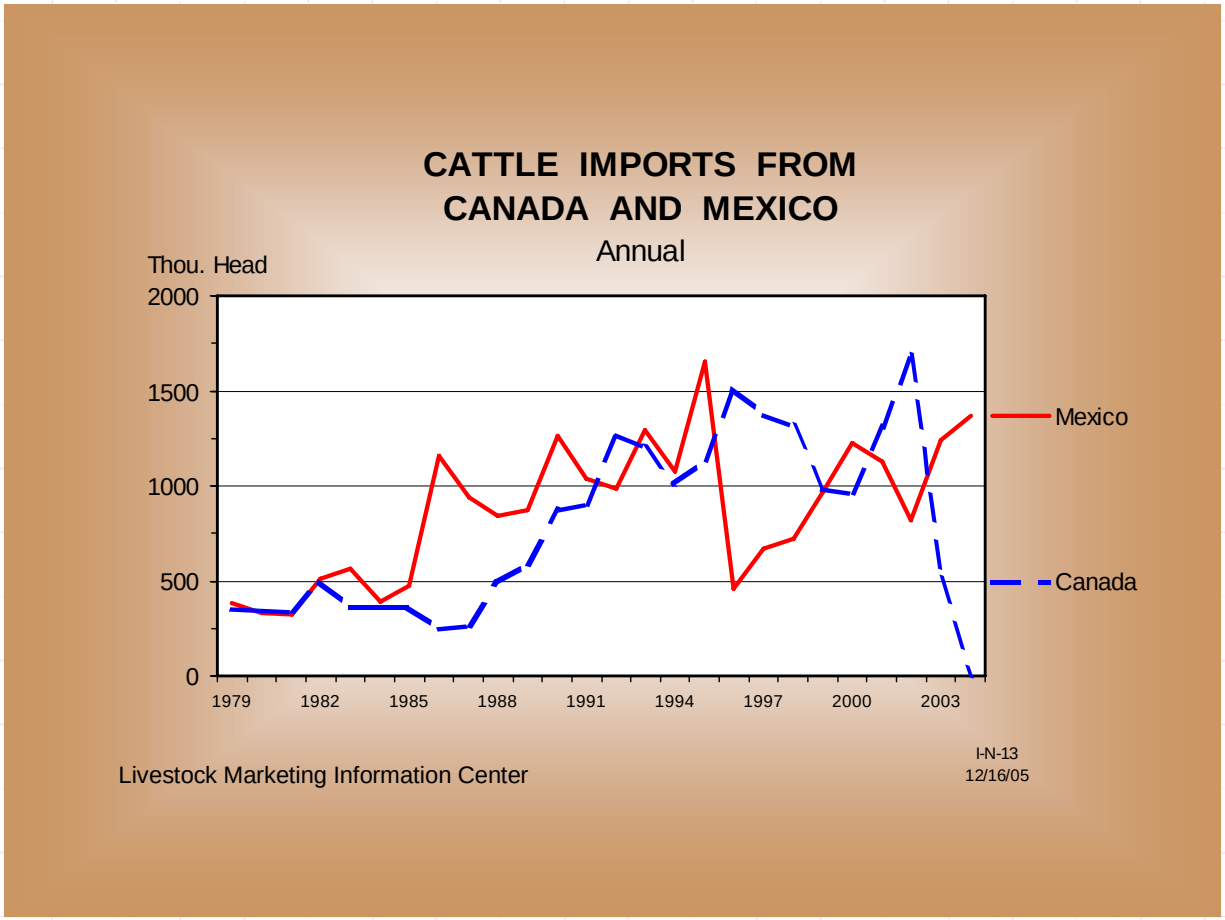
New US beef import ban in Japan

Japan says it will reimpose a total ban on US beef imports after a shipment contained carcass parts that could have posed a risk of BSE (mad cow disease).

BSE was found in US cattle at the end of 2003, and Japan agreed to partially lift the ban after intense lobbying.

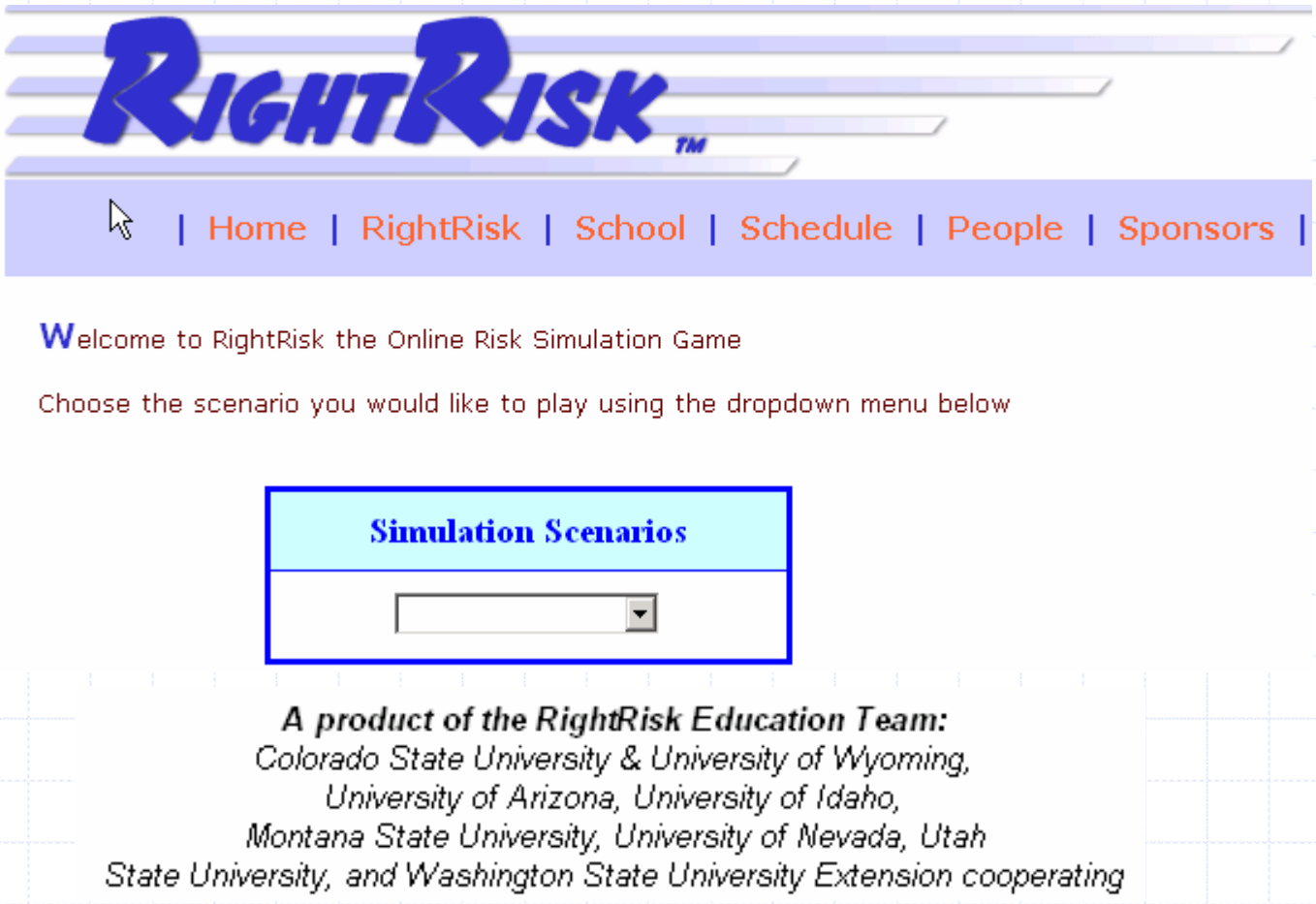
The size of the Japanese market makes a ban a very costly problem

NAFTA Markets More Integrated ...



. . . But what about safety, inspection, and trade institutions?

www.RightRisk.org



Strategic Risk Management Process

RightRisk: Public Lands Scenario

Public Lands

The John Q. Public Ranch is a cow/calf/hay operation near the Arizona/Utah border. It is December 1st and they have 650 head of cows that have been preg checked and are assumed to be pregnant. The cows run predominantly on public grazing land. Calves a

General Information

Crop Enterprise:	Hay				
Crop acres:	50	acres	Normal annual yield per acre:	2.5	tons
Production costs per acre:	$60		Initial market price:	$80.00	per ton
Initial inventory:	125	tons	Annual government payment:	$0	

Livestock:	Background Feeder Steers			
Initial inventory:	150	head	Output unit:	Yearlings
Initial weight:	650	lbs.	Output date:	April 1
Percent death loss:	1.5%		Output weight:	850 lbs.
Production costs per head:	$140		Initial output market price:	$84.55 per cwt.

Livestock Enterprise:	Cows			
Quantity:	650	head	Output unit:	Weaned Calf
Nonfeed production costs per unit:	$230		Weaning percentage:	92%
Annual Hay Consumption per unit:	0.18	tons	Output weight per unit:	550 lbs.
Replacement percentage:	20%		Initial output market price:	$95.00 per cwt.
Sale weight per cull unit:	1100	lbs.	Cull market price:	$45.00 per cwt.
Public Grazing base:	4770	AUMs	Private Grazing base:	2725 AUMs

Expected Revenues:

Sales	Units	Revenue
Weaned Calf	468 head	$244,530
Cows	130 head	$64,350
Yearlings	148 head	$106,184
Government payment:		$0
Annual total:		$415,064

Expected Expenses:

	Units	Expense
Hay	50 acres	$3,000
Cows	650 head	$149,500
Background Feeder Steers	150 head	$21,000
Grazing expenses	7495 AUMs	$119,929
Annual total:		$293,429

EXPECTED ANNUAL RANCH CASH INCOME:	$121,635
EXPECTED 2-YEAR TOTAL NET INCOME:	$158,086

Exit

Start

Decision-making & uncertainty

“ When we want something, we always have to reckon with probabilities.”

- Jean – Paul Sartre, *Existentialism*, 1947

Probabilities enter into decisions

Period 1 **Year 1: Dec. 1 - Apr. 1** **Scenario: Public Lands**

Decisions

Decision 1:
Buy(+) or Sell(-) Hay
Decide

Decision 2:
Forward Price (800-900 lb.) Yearlings
Decide

Commodity	Cash Price	Contract Price	Current Inventory	Expected Harvest	Expected Feed Use	Contracted Quantity	Average Contract	*The Books*	
Weaned Calf	$95.00			468				Bank balance:	-$293,429
Hay	$80.00		125		117				
Yearlings	$84.55	$88.11		148					
Public Grazing			4,770						
Private Grazing			2,725		2,600				

Risk 1		Hay Impacts		Weaned Calf Impacts			Feed Impacts		
Winter precip conditions	Probability	Price	Yield	Price	Weaning %	Weight	Hay Use	Public AUMs	Private AUMs
Extremely Dry Winter	5%	+$20.00	-50	-$15.00		View	+182	-477	-125
Dry winter	15%	+$10.00	-25	-$5.00			+65	-239	-125
Normal winter	65%	-$5.00							
Wet winter	15%	-$20.00	+50	+$5.00	-1.0%	+25	-117	+477	+273

Risk 2		Hay Impacts		Weaned Calf Impacts			Feed Impacts		
Corn planting intentions	Probability	Price	Yield	Price	Weaning %	Weight	Hay Use	Public AUMs	Private AUMs
> 80 million acres	20%	-$5.00		+$15.00					
70-80 million acres	65%	+$5.00		+$5.00					
< 70 million acres	15%	+$10.00		-$10.00					

Period 1 Dec. 1 - Apr. 1 **Results** Scenario: Public Lands

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70-80 million acres	65%	+$5.00		+$5.00					
< 70 million acres	15%	+$10.00		-$10.00					

Commodity	Cash Price	Contract Price	Current Inventory	Harvest	Feed Use	Contracted Quantity	Average Contract	*The Books*	
Weaned Calf	$85.00			468				Bank balance:	-$311,699
Hay	$105.00				299				
Yearlings	$75.65		148	148					
Public Grazing			4,293						
Private Grazing					2,600				

	Bank Balance	Hay Inventory	Yearlings Inventory	Private Grazing Inventory
Feed Usage		-182		-2,600
Harvest			+148	
Contract Delivery	+$37,446.75		-50	
Required purchase	-$595.00	+7		

Weaned Calf Information	
Expected Weaning Pct.	92%
Expected Weaning Wt.	500
Yearling Weight	850

Hay Information	
Expected Hay Harvest	75

Next

Period 2 **Year 1: Apr. 1 - Jul. 1** **Scenario: Public Lands**

Decisions

Decision 1:	Decision 2:	Decision 3:
Buy(+) or Sell(-) Cow/Calf pairs	Leasing additional private range	Forward Price (900-1000 lb.) Yearlings
Decide	Decide	Decide

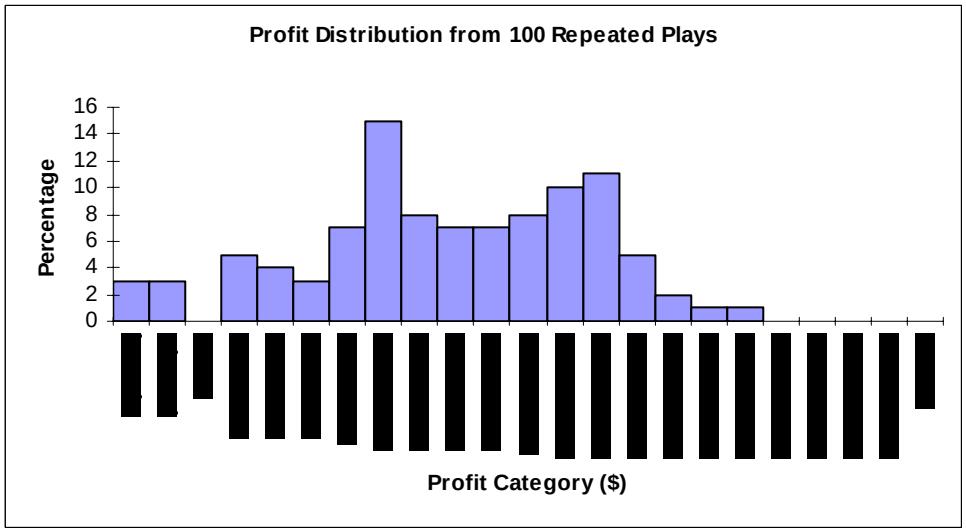
Commodity	Cash Price	Contract Price	Current Inventory	Expected Harvest	Expected Feed Use	Contracted Quantity	Average Contract	The Books	
Weaned Calf	$85.00			468				Bank balance:	-$216,531
Hay	$105.00								
Yearlings	$73.95	$73.21							
Public Grazing			4,293		1,950				
Private Grazing									

Risk 1		Hay Impacts		Weaned Calf Impacts		Yearling	Feed Impacts		
Corn crop condition report	Probability	Price	Yield	Price	Weight	Wt. Gain	Hay Use	Public AUMs	Private AUMS
Excellent crop conditions	20%	-$10.00		+$5.00					
Normal crop conditions	65%	-$2.00							
Poor crop conditions	15%	+$5.00		-$10.00					

Risk 2		Hay Impacts		Weaned Calf Impacts		Yearling	Feed Impacts		
Spring precipitation conditions	Probability	Price	Yield	Price	Weight	Wt. Gain	Hay Use	Public AUMs	Private AUMS
Excellent	20%	-$7.00	+25	+$5.00	+5	+140		+477	
Normal	50%	-$2.00		+$1.00		+130			
Poor	23%	+$5.00	-10	-$5.00	-5	+125		-239	
Very poor	7%	+$10.00	-25	-$10.00	-10	+120		-477	

Climate change as draws from a different distribution

Distribution Analysis



Maximum	313567.76	Median	143912.55
Mean	145174.12	Standard deviation	76947.31
Minimum	-33655.10	10th percentile	35072.09

Compare Second Option

New Game