
THE BUSINESS OF DEER
MANAGEMENT & BREEDING
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THE GREATEST DANGER?

- **Fragmentation of undeveloped lands.**
- **Loss of the farming & ranching lifestyle.**

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THE GREATEST ANSWER?

- **Diversified land management.**
- **Increasing profitability for these operations.**

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What does Texas land cost?*

Area	Per Ac. Cost	% Change
No. High Plains	185	1.7
So. High Plains	138	7.4
No. Low Plains	190	-0.5
So. Low Plains	262	-11.5
Cross Timbers	604	11.6
N.C. Texas	878	8.0
East Texas	740	-3.7
Central Texas	1049	1.6
South Texas	642	13.1
Trans-Pecos		
Ed. Plateau	528	27.4
Coastal	583	-2.9

*Federal Reserve 2001

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Fact: Undeveloped wildlife land worth more!

Whether you own or buy, you have at least,

Area	300	1,000	3,000
East Texas	$222,000	$740,000	$2,220,000
Central Texas	$314,700	$1,049,000	$3,147,000
South Texas	$192,600	$642,000	$1,926,000
Ed. Plateau	$158,400	$528,000	$1,584,000*

Invested!

*8% guaranteed annuity= $126,720

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How about cattle?

Profitability of a cow-calf operation in east and west Texas (Texas A&M, 1991-2000)

	East Texas	West Texas
Total investment/breeding cow	$2,003	$1,653
% Return on assets-marketable	-0.26%	1.58%
Net income after withdrawals per cow	-$77.98	-$40.25

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Let's talk hunting operations

- **Facts:**
  - Cost of land is increasing
  - Single use of land is out!
  - Multiple-use is in!
  - Land is fragmenting
    - Ownerships are smaller





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What is a whitetail lease worth?

	Lease Fee (per acre)				
Discount Rate	3.00	5.00	7.00	10.00	12.00
5%	$23.16	38.61	54.05	77.22	92.67
8%	20.13	33.55	46.97	67.10	80.52
10%	18.43	30.72	43.01	61.44	73.73
12%	16.95	28.25	39.55	56.50	67.80
15%	15.06	25.09	35.13	50.19	60.22

3,000 acres = $100,650 PW

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Breeder Operation Scenario

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You need to understand economics: NPV and PW

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What does it cost?

- Animals
- Pens
- Handling facility
- Labor
- Feed
- Medical

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Animals?

- The “Sky is the limit!” but…..
- Quality does, $5,000-$10,000 (Bred)
- Breeder Bucks,
  - Yearlings= $10,000-$20,000
  - 2-1/2 Year olds= $20,000+
  - Mature bucks= $???????
- Semen= $600-$5,000

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Pens?

- Depends on size, but…
- Basic unit is 8 pens= $15,000-$20,000

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What does it cost?

- Animals
- Pens
- Handling facility
- Labor
- Feed
- Medical

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Handling Facility?

- 40 ft. X 40 ft.= $40,000, includes:
  - Cradle
  - Rooms
  - Electrical
  - Plumbing
  - Laboratory

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What does it cost?

- Animals
- Pens
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- Feed
- Medical

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Labor?

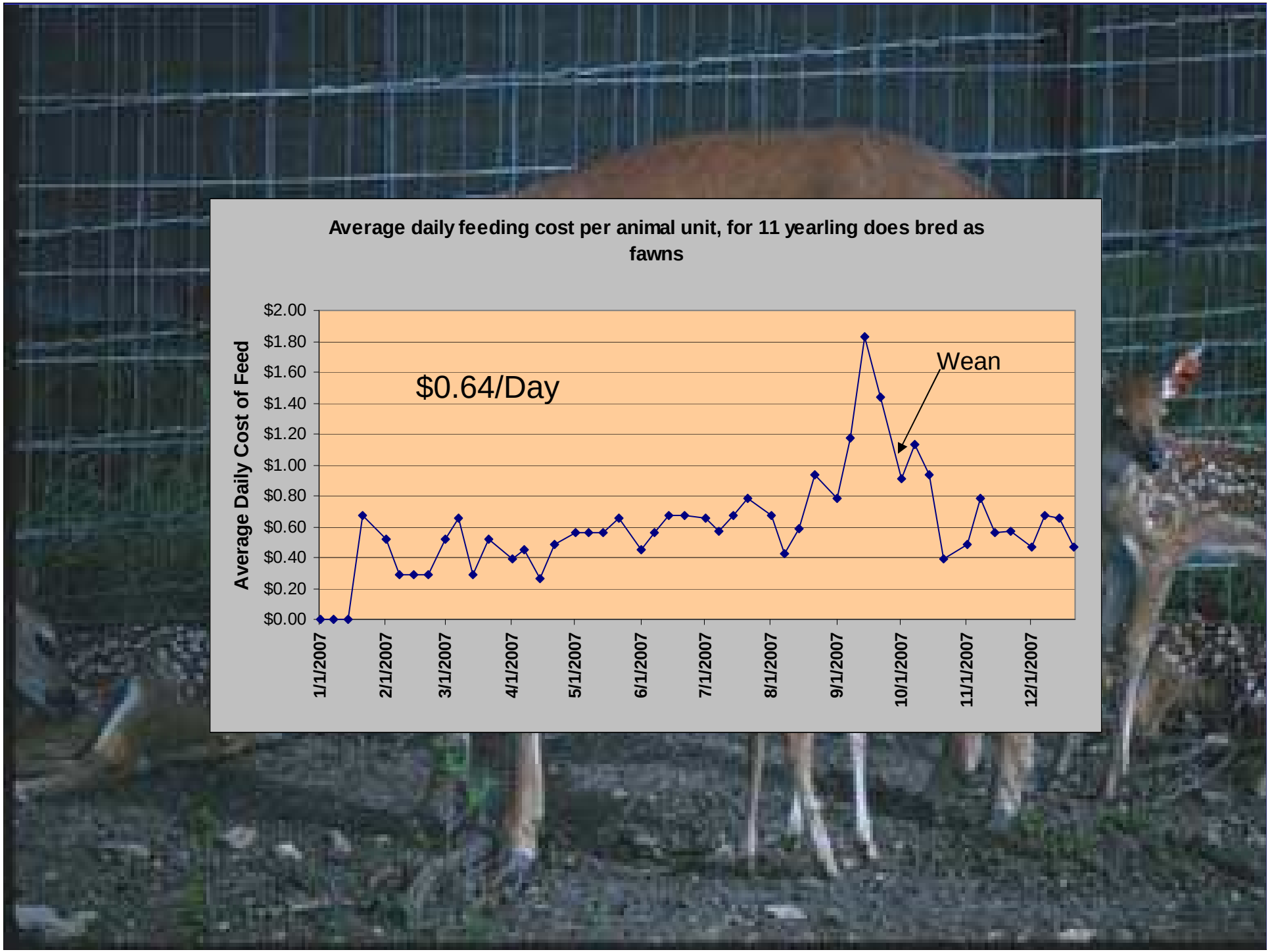
- "Sweat equity" vs. Hired Labor?
- Fact: To properly handle and husband a basic unit of 48 does, plus fawns and bucks (fawn-3.5 years), it will take one full-time person and two-three part-time or volunteers.
- Reasonable salary: $25,000-$35,000! (Includes benefits)
- Why so much?

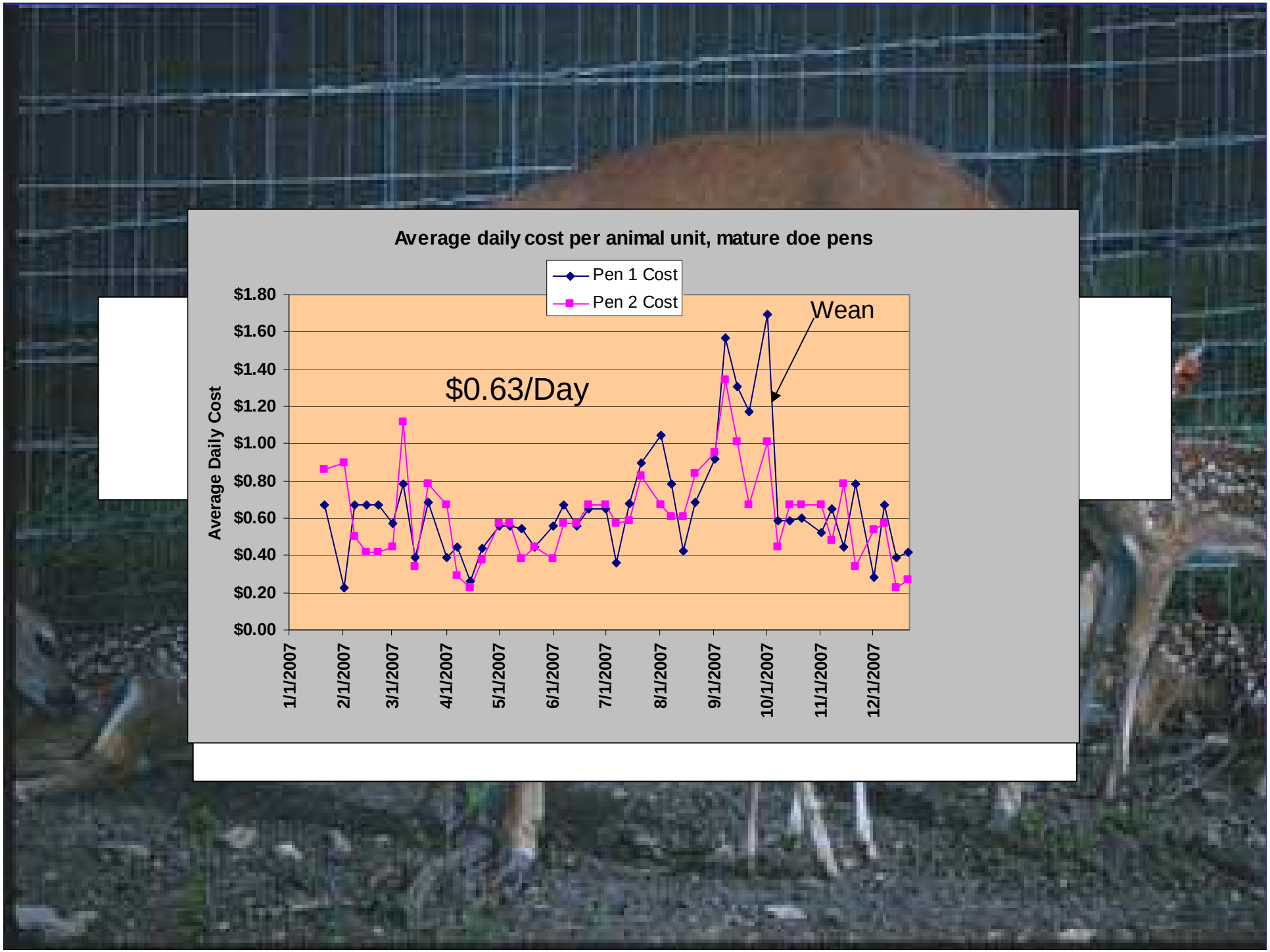
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What does it cost?

- Animals
- Pens
- Handling facility
- Labor
- Feed
- Medical

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Average daily feeding cost per animal unit, for 11 yearling does bred as fawns
Average Daily Cost of Feed
$2.00
$1.80
$1.60
$1.40
$1.20
$1.00
$0.80
$0.60
$0.40
$0.20
$0.00
$0.64/Day
Wean
1/1/2007
2/1/2007
3/1/2007
4/1/2007
5/1/2007
6/1/2007
7/1/2007
8/1/2007
9/1/2007
10/1/2007
11/1/2007
12/1/2007


Average daily cost per animal unit, mature doe pens
Pen 1 Cost
Pen 2 Cost
Wean
$0.63/Day
Average Daily Cost
$1.80
$1.60
$1.40
$1.20
$1.00
$0.80
$0.60
$0.40
$0.20
$0.00
1/1/2007
2/1/2007
3/1/2007
4/1/2007
5/1/2007
6/1/2007
7/1/2007
8/1/2007
9/1/2007
10/1/2007
11/1/2007
12/1/2007

What does it cost?

- Animals
- Pens
- Handling facility
- Labor
- Feed
- Medical

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Medical?

- Testing
  - Assumption of 5% reportable mortalities=$370
- Antibiotics & wormers= $500
- Direct Veterinary Visits= $1,500
- Budgeted per animal= $23.70

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The “Rules”

- ✓ Mature does sell for $3,500
- ✓ Doe fawns sell for $2,000
- ✓ Buck fawns sell for $3,000
- ✓ Yearling bucks sell for $7,500
- ✓ Two year old bucks sell for $10,000

Note: Prices certainly will vary, but these are current averages for “good” genetics

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Breeder Operation Scenario

Goal: To produce 90-100 fawns annually

Capital Outlay: Year 0

Land	10 acs.	$15,000
Pens	15 paddocks	30,000
Barn	40X40	35,000
Computer		3,000
Well		7,000
Electrical		5,000
Vehicle	Truck	20,000
Trailer	Mod. Cattle	3,500

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Breeder Operation Scenario

Capital Outlay: Year 0

Deer	Value	Total
60 Does	$3,500	$210,000
6 Breeder Bucks	$15,000	$ 90,000

Total Capital Outlay: $418,500

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Breeder Operation Scenario

Annual Operation Costs:

Labor/Feed	$36,865
Fuel, Oil, etc.	6,000
Advertising	5,000
Internet	2,000
Veterinarian/supplies	5,000
Semen (60 str./800)	48,000
Insurance	6,000
Misc.	10,000
Total	$118,865
Depreciation	$42,300
Total Annual:	**$161,165**

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Breeder Operation Scenario

Present Value of Costs:

$418,500 +

$1,244,473.40 =

$1,662,973.40

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The Goal, Scenario 1

Sell,

- **10 mature does**
- **35 doe fawns**
  - ➢ **sell half of <u>all</u> bucks annually***
- **22 buck fawns**
- **11 yearling bucks**
- **10 two year old bucks**

*Keep replacement top bucks

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The Goal, Scenario 2

Sell,

- 10 mature does
- 35 doe fawns

➢ half your antlered bucks annually by age

- 23 yearling bucks
- 21 two year old bucks

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Income Streams, Scenarios 1&2

Year 0	Year 1		Years 2-10
$0	35 doe fawns	$70,000	Goal Attained
	22 buck fawns	$66,000	$353,500

NPV= 1,890,321.10 - $1,662,973.40 = $239,347.71

Year 0	Year 1	Years 2		Years 3-10
$0	35 doe fawns	35 doe fawns	$70,000	Goal Attained
	$70,000	10 does	$35,000	$487,500
		23 yearling bucks	$172,500	

NPV= $2,623,933.00 - $1,662,973.40 = $972,959.59

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Bottomline?

- It's better economically to wait an additional year (year 2) to sell deer.
  - But…you may need the money!
- It's also better to sell yearling bucks than buck fawns.
- The difference is some $700,000 NPV.
- In any case, you have to average $1,834 per deer in this scenario to break even!

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Basic Financials: Bucks



✓<100 B&C	$ 500
✓100-125	1,500
✓125-140	2,500
✓140-150	3,500
✓150-160	5,000
✓160-170	7,500
✓170+	15,000

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Extensive Management: Trophy distribution

➢ Trophies	150+	25%
➢ Quality Bucks	125-150	50%
➢ Culls	<125	25%

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Hunting operation scenario #1

Conditions:

- ✓ 300 acres
- ✓ Owned with no debt
- ✓ No high fence
- ✓ "Official" K= 1 adult deer/15 acres
- ✓ Recruitment is 60%
- ✓ Buck:doe ratio 1:2
- ✓ Yearling buck mortality is 15%
- ✓ Adult mortality is 5%
- ✓ Harvest 3 bucks annually, mean B&C = 100
- ✓ 10 year operation
- ✓ 5% discount rate

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Hunting operation scenario #1

Demographics

- ✓13 does
- ✓ 7 bucks
- ✓ 8 fawns

Buck Demographics Before Harvest, Beginning Year 2

fawns	4
yearlings	3
2-1/2	3
3-1/2	2

Harvest 3

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Hunting operation scenario #1

Demographics

- ✓13 does
- ✓ 7 bucks
- ✓ 8 fawns

Buck Demographics After Harvest

fawns	4
yearlings	3
2-1/2	2
3-1/2	0

Harvest 3

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Economic Analysis of Scenario #1

- ✓ Costs,
  - Taxes $900.00
  - Land Mgmt $500.00
  - Advertising $500.00
    - ➢ Total $1,900.00

➢ PVC = $14,671.30

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Economic Analysis of Scenario #1

- ✓ Annual Income,
  - ➢ 3 Bucks $1,500
  - ➢ Total $4,500
    - ➢ PVI = $34,747.81
    - ➢ PVC = $14,671.30
    - ➢ NPV = $20,076.51
    - ➢ NPV/Ac = $66.92

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Hunting operation scenario #2

Conditions:

- ✓ 300 acres
- ✓ Owned with no debt
- ✓ No high fence, intensive management
- ✓ K= 1 adult deer/7.5 acres
- ✓ Recruitment is 80%
- ✓ Buck:doe ratio 1:2
- ✓ Yearling buck mortality is 15%
- ✓ Adult mortality is 5%
- ✓ Harvest 8 bucks annually, mean B&C = 127
- ✓ 10 year operation
- ✓ 5% discount rate

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Hunting operation scenario #2

Demographics

- ✓ 27 does
- ✓ 13 bucks
- ✓ 22 fawns

Buck Demographics Before Harvest, Beginning Year 2

fawns	11
yearlings	9
2-1/2	9
3-1/2	8

Harvest 8

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Economic Analysis of Scenario #2

- ✓ Costs,
  - Food Plots $3,000
  - Feed $1,642
  - Labor $1,200
  - Taxes $ 900
  - Land Mgmt $1,500
  - Advertising $ 500
    - ➢ Total $8,742.50
    - ➢ PVC = $67,507.27

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Economic Analysis of Scenario #2

- ✓ Annual Income,
  - ➢ 8 Bucks $2,500
  - ➢ Total $20,000
  - ➢ PVI = $154,434.70
  - ➢ PVC = $ 67,507.27

- ➢ NPV = $86,927.43
- ➢ NPV/Ac = $289.76

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Hunting operation scenario #3

Conditions:

- ✓ 300 acres
- ✓ Owned with no debt
- ✓ High fence, intensive management
- ✓ K= 1 adult deer/3 acres
- ✓ Recruitment is 90%
- ✓ Buck:doe ratio 1:1
- ✓ Yearling buck mortality is 15%
- ✓ Adult mortality is 5%
- ✓ Harvest 20 bucks annually, mean B&C = 145
- ✓ 10 year operation
- ✓ 5% discount rate

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Economic Analysis of Scenario #3

- ✓ Costs,
  - Food Plots $6,000
  - Feed $8,212
  - Fence $41,079(non-annual)
  - Labor $6,000
  - Taxes $ 900
  - Land Mgmt $3,000
  - Advertising $2,000
    - ➢ Total $26,112 annual
    - ➢ PVC = $242,709.13

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Economic Analysis of Scenario #3

- ✓ Annual Income,
  - ➢ 20 Bucks

5 Trophies	$25,000
10 Quality	25,000
5 Culls	7,500
Total	$57,500

  - ➢ PVI = $443,999.76
  - ➢ PVC = $242,709.13
  - ➢ NPV = $201,290.63
  - ➢ NPV/Ac = $670.97

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Hunting operation scenario #4

Conditions:

- ✓ 300 acres
- ✓ Owned with no debt
- ✓ High fence, intensive management
- ✓ Same as Scenario #3, except
  - Release 40 bucks annually from breeding operation (yearlings)
  - Mortality will be 10% per annum
  - Harvest at age 4-1/2+
  - 40% Trophies; 50% Quality; 10% Culls
  - Harvest 29 bucks annually over Scenario #3

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Economic Analysis of Scenario #4

- ✓ Costs,
  - Food Plots $6,000
  - Feed $8,212
  - Fence $41,079(non-annual)
  - Labor $6,000
  - Taxes $ 900
  - Land Mgmt $3,000
  - Advertising $2,000
    - ➢ Total $26,112 annual
    - ➢ PVC = $242,709.13 (not including breeding

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Economic Analysis of Scenario #4

- ✓ Annual Income,
  - ➢ Same 20 Bucks +
  - ➢ 29 stocked
  - ➢ PVI= $2,123,477
  - ➢ PVC=$ 566,594 (labor, stockers)
  - ➢ NPV=$1,556,883
  - ➢ NPV/Ac= $5,189.61

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Ranch "B"
Bottomline: Economics
(6 Years)

- **Average annual per acre return:**
  - **Bucks= $66.80 per acre**
  - **Does= $4.07 per acre**
- **Total return potential:**
  - **Bucks= $1,007,500 ($403 per acre)**
  - **Does= $81,400 ($32.56 per acre)**

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Our Research Facility?

- **5 Year Gross (Deer): $1,500/ac.!**

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Table 1. Net present values of various types and sizes of commercial whitetail hunting operations.

		NPV by Acreage		
Type of Mgmt	"K"	300	1,000	3,000
Extensive	1X	$ 20,076	$ 66,920	$200,760
Intensive	2X	86,927	289,757	869,270
Intensive + Fence	5X	201,291	272,815*	2,293,796*
Intensive + Fence +Breeding	5X+152	$1,556,883	$1,829,698*	$3,343,361*

*reflects increased labor due to economy of scale

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Table 2. Comparison of income potential for various types of operations based on 300 acre extensive management multiples.

	Acres in Operation		
Type of Mgmt	300	1,000	3,000
Extensive	1X	3.3X	10X
Intensive	4.3X	14.4X	43.3X
Intensive + Fence	10X	13.5X	89X
Intensive + Fence + Breeding	77.5X	91.1X	166.5X

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Fact: You can't pay for it if you do what the "professionals" want you to do!

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