

Oyster Crop Budgets for Virginia

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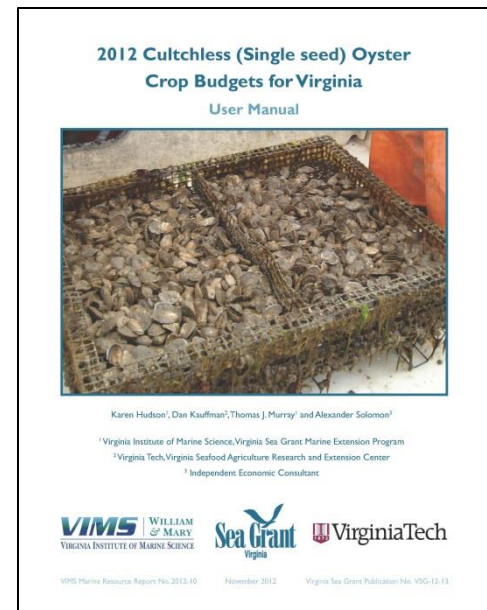
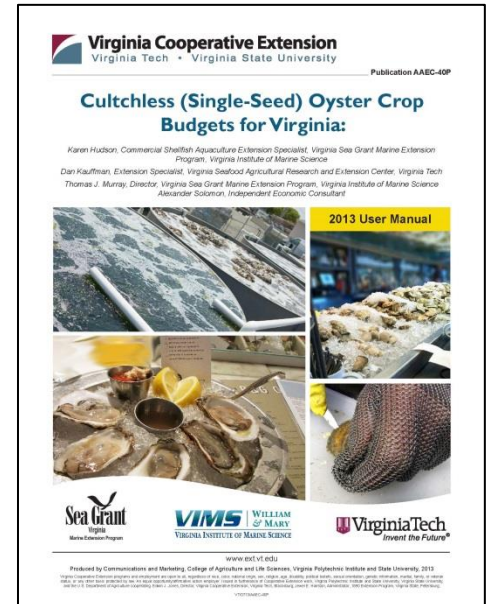
Virginia Tech

<http://pubs.ext.vt.edu/AAEC/AAEC-40/AAEC-40.html>

VIMS

www.vims.edu/map/aquaculture

2012 Oyster Budget User Manual
Spreadsheet (small-scale)
Spreadsheet (medium-scale)



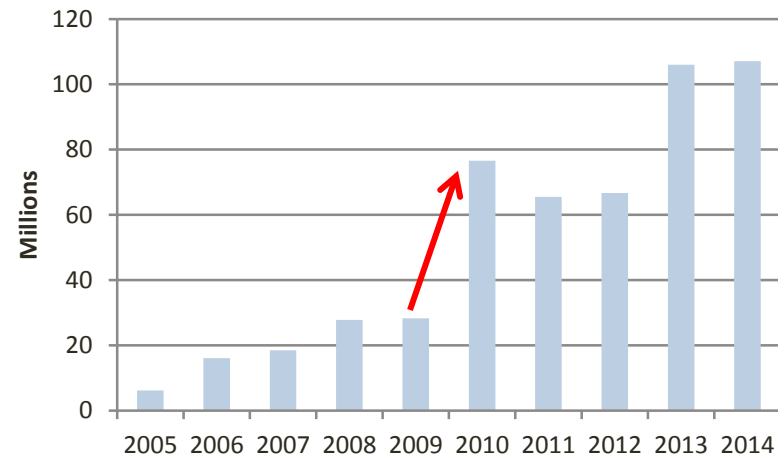
Initiated in response to lender requests

Industry growth in cultchless (single) oyster culture

Useful in seeking operating lines of credit



Number of Oysters Planted by Virginia Aquaculturists (millions)



Hudson & Murray, 2015

Tool Description

Modeled after traditional agriculture enterprise budgets

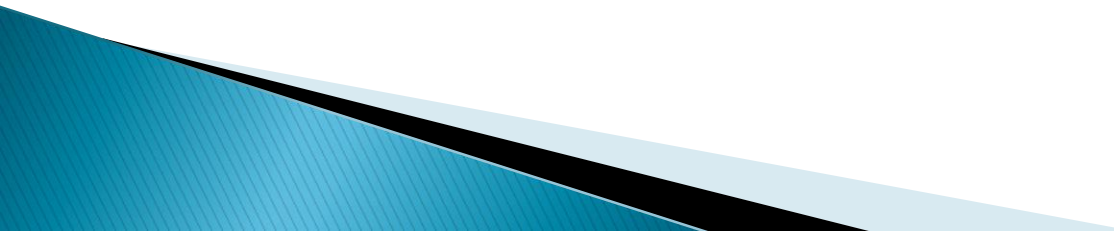
Projected costs and revenues

Assess investments and evaluate changes within existing operations

Financial Planning

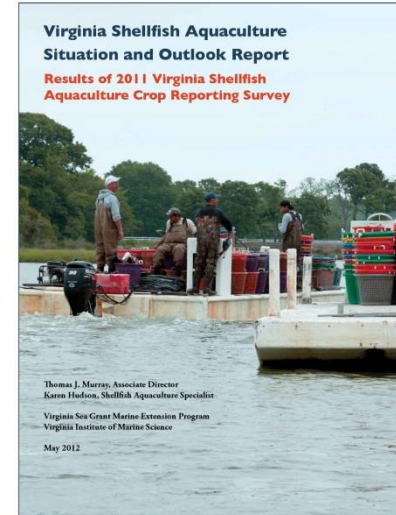


Budget Structure

- ▶ Revenue
 - ▶ Operating/Variable Costs (seed, labor, fuel..)
 - ▶ Gross Profit (return over operating expenses)
 - ▶ Fixed Costs & Depreciation Expenses (based on new equipment)
 - ▶ Estimated Return
- 

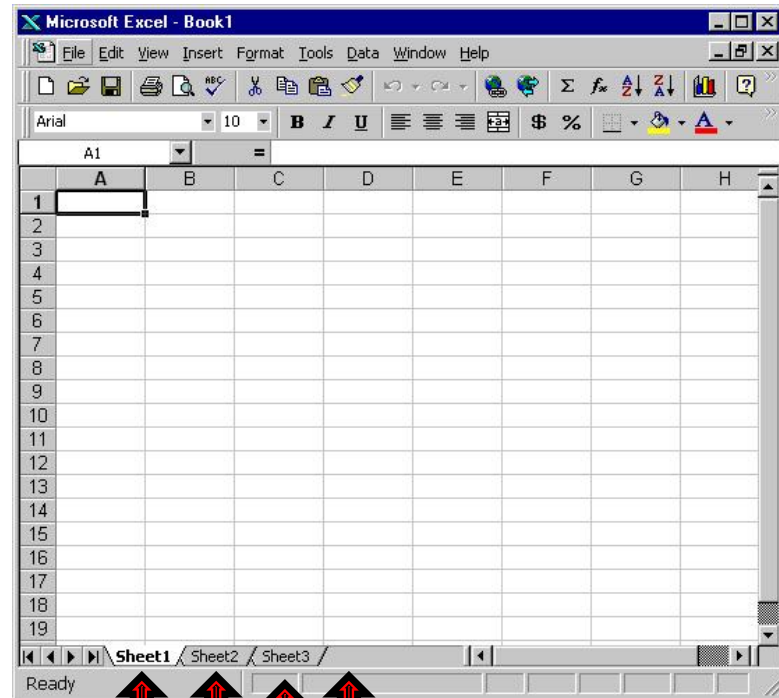
The Budget Spreadsheet

- Representative budgets for both scales are provided
- Data based on surveys & interviews w/ Virginia growers
- Changes are encouraged!
- Stops at farm gate – no marketing costs are included



The Budget Spreadsheet

- Multiple worksheet selections



Menu

Budget

Line Items

Evaluation

Step 1: Choose Scale

Small

- Marketing 50 K– 250 K /yr
- Buying large seed (6–12 mm)
- No Nursery



Medium

- Marketing 250 K – 1 M/yr
- Buying small seed (2 mm)
- Nursery



Steps 2 & 3

1		Marine Extension Program	
2		CULTCHLESS (SINGLE SEED) OYSTER CROP BUDGET	
3		MEDIUM SCALE - Marketing 250,000 to 1,000,000 oysters per year	
4		November 2012	VIMS Marine Resource Report No. 2012-10
<p>Instructions: Start by entering the target annual oyster sales. This sales number will be the basis to calculate expected costs and returns for years 1 and 2 for a representative farm based on variables chosen with industry guidance. If you choose, most other variables in this worksheet (columns C & D) can be changed however, those that have the most impact are identified by maroon-color w/ diagonal line hatch. Changes to the depreciation expenses must be made in the Line Item Notes worksheet by selecting that tab at the bottom of the screen. Many cells are locked to protect proper functioning of the spreadsheet. For a complete set of instructions please see the user manual.</p>			
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ESTIMATED COSTS AND RETURNS PER CROP OF OYSTERS

Item	Key Assumptions	Target Annual Oyster Sales	1,000,000
Avg Market Price	\$0.25	Oyster Seed Planted	2,000,000
Oyster Mortality Rate	50%	Year 1 Harvest (crop 1)	200,000
% of Total Oysters Harvested in year 1	20%	Year 2 Harvest (crops 1 & 2)	1,000,000
% of Total Oysters Harvested in year 2	80%		

Modify key assumptions
(as needed)

Enter your target annual sales

Make changes on budget sheet

13					
14	ITEM	UNIT	QUANTITY of UNITS	PRICE/Cost per Unit	YEAR 1
15	1. Gross Receipts				
16	Market Oyster Revenue	Single Oyster	1,000,000	\$0.25	\$ 50,000
17					
18	2. Operating Expenses				
19	Triploid Oyster Seed		2,000	\$ 8.00	\$ 16,000
20	Full Time Labor	Hours	6,240	\$ 12.00	\$ 74,880
21	Part Time Labor	Hours	5,760	\$ 9.00	\$ 51,840
22	Employment Tax (FICA)	Taxable Total Wages (\$)	126,720	7.65%	\$ 9,699
		Annual Expense per \$100 of			
23	Workers Compensation	payroll	1,267	\$ 4.00	\$ 5,069
24	Boat Fuel	Gallons	416	\$ 3.50	\$ 1,456
25	Truck Fuel	Gallons	693	\$ 3.50	\$ 2,426
26	Boat Maintenance	1 lot	1	\$ 1,000.00	\$ 1,000
27	Truck Maintenance	1 lot	1	\$ 750.00	\$ 750
28	Misc. Equipment Maintenance (upweller, sorter, pumps, etc)	1 lot	1	\$ 1,000.00	\$ 1,000
29	Expendable Supplies (baskets or totes etc)	Start-Up Cost	1	\$ 5,550.00	\$ 5,550
30	Misc. Supplies	1 lot per cage	834	\$ 1.00	\$ 834

Change expense estimates in the cross-hatched areas

Ready

Oyster Crop Budget

Line Item Notes

Budget Evaluation

Make changes on line items sheet

D43		f _x	1			
	A	B	C	D	E	F
1	Line Item					
2	2. Operating Expenses					
3						
4	Labor Calculations					
5					960 hrs	
6		<u>No. Planted</u>			<u>total no. hrs used in budget</u>	
7		400,000 to 700,000			5120	
8		700,000 to 800,000			6160	
9		800,000 to 1,000,000			7200	
10		1,000,000 to 1,500,000	6240	5640	10080	1
11		1,500,000 to 2,000,000	6240	5760	12000	1
12						
13						
14	Fuel Calculations	<u>approx. miles per week</u>	<u>miles per gallon</u>	<u>no. gallons</u>	<u>cost per gallon</u>	<u>weeks per</u>
15	Boat Fuel	120	15	8	\$3.50	
16	Truck Fuel	200	15	13	\$3.50	
17						
18						
19	Expendable Supplies	<u>Item</u>	<u>approx cost</u>	<u>Number units</u>	<u>Total</u>	
20		Bushel Baskets	\$17	50	\$850	
21		Protective Gear: Gloves, foul weather, etc	\$200	7	\$1,400	

Modify as needed



Make changes on line items sheet

	A	Change the font size.	C	D	E	F	G	H
34	Includes boat, motor, hoist, trailer	\$ 25,900.00	20%	\$ 20,720.00	4.75%	7	\$929.03	
35								
36	Capital Items to be Depreciated	Unit	Cost/Price	Volume	Total Capital Investment	Cost Basis	Recovery Period (years)	Dep
37	Boat, Motor, Hoist, Trailer	24' Carolina Skiff with small console, stainless steel steering wheel & 12 gal tank, 150 hp Yamaha, davit crane with mechanized hoist, trailer	\$ 25,900.00	1	\$ 25,900.00	\$ 25,900.00	7	\$
38	Truck		\$ 40,000.00	1	\$ 40,000.00	\$ 40,000.00	5	\$
39	Cages -seed (3' x 4' LowPro double stack, 1/2" mesh, bridled)	Each	\$ 148.00	1	\$ 148.00	\$ 148.00	7	\$
40	Cages - grow out (3' x 4' LowPro doublestack, 1" mesh, bridled)	1,200	\$ 135.00	1	\$ 135.00	\$ 135.00	7	\$
41	Bags -seed (3/16")	1,000	\$ 4.50	1	\$ 4.50	\$ 4.50	5	\$
42	Bags -grow out (3/8")	500	\$ 4.50	1	\$ 4.50	\$ 4.50	5	\$
43	Refrigeration Unit for 8ft Truck Bed	Hercules brand 8' slip in box/body (\$6,500) and refrigeration unit (\$6,200)	\$ 12,700.00	1	\$ 12,700.00	\$ 12,700.00	7	\$
	Walk-in cooler - modular, self	Basic model: 7'x6" H, 9'-8" W, 23'-1" L, w/ floor, 1hp. medium temp top mounted unit (+38F), 26 gauge embossed galvanized interior & exterior, .100 smooth aluminum floor, 2-1/2" dial						


Modify capital structure (as needed)

Modify depreciation schedules (as needed)



Output

- ▶ Range of returns in year 2 based on mortality and market price

SENSITIVITY TABLE:		The following table uses the information in the spreadsheet to provide a range of returns in year two based on mortality and market price. Red numbers in parenthesis refer to negative returns. Keep in mind costs associated with mortality are not included.			
Year 2 Pre-tax Return Sensitivity: Mortality and Market Price		% Mortality 			
Mkt Price	Mortality Rate	30%	35%	40%	45%
\$	0.10	(68,949)	(91,314)	(94,914)	(99,187)
\$	0.11	(58,989)	(81,354)	(84,954)	(89,227)
\$	0.12	(49,029)	(71,394)	(74,994)	(79,267)
\$	0.13	(39,069)	(61,434)	(65,034)	(69,307)
\$	0.14	(29,109)	(51,474)	(55,074)	(59,347)
\$	0.15	(19,149)	(41,514)	(45,114)	(49,387)
\$	0.16	(9,189)	(31,554)	(35,154)	(39,427)
\$	0.17	771	(21,594)	(25,194)	(29,467)
\$	0.18	10,731	(11,634)	(15,234)	(19,507)
\$	0.19	20,691	(1,674)	(5,274)	(9,547)
\$	0.20	30,651	8,286	4,686	413
\$	0.21	40,611	18,246	14,646	10,373
\$	0.22	50,571	28,206	24,606	20,333
\$	0.23	60,531	38,166	34,566	30,293
\$	0.24	70,491	48,126	44,526	40,253
\$	0.25	80,451	58,086	54,486	50,213
\$	0.26	90,411	68,046	64,446	60,173
\$	0.27	100,371	78,006	74,406	70,133

Price/oyster 

Evaluation Sheet

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A	B	C	D
1	Table 1. Evaluating the Line items based on		
2	Percentage of Total Cost of the budget		
3	<i>*Shows that Labor (including workers comp) and Gear are the two biggest expenses</i>		
4		Percentage of	
5		Total Annual	
6		Expenses	
7		YEAR 2	
8	2. Operating Expenses		
9	Triploid Oyster Seed	7.7%	
10	Labor (FT &PT, FICA, workers comp)	68.1%	
11	Fuel (boat and truck)	1.9%	
12	Manitenance (vehicle and equipment)	1.3%	
13	Misc. Supplies	0.4%	
14	TOTAL	79.4%	
15			
16	4. Fixed Costs		
17	Debt Servicing (Barge, Motor, Hoist)	0.4%	
18	Insurance (boat,truck,business)	1.0%	
19	Legal Fees (structuring, LLC, accounting)	0.5%	
20	Business Property Tax (Boat)	0.2%	
21	Depreciation Expense (Non - Cash)		
22	Barge, Motor, Hoist	1.8%	
23	Truck	3.8%	
24	Gear (cages and bags)	10.8%	
25	Refrigeration Unit - truck		
26	Walk-In Cold Room (10'x24')	0.8%	
27	Nursery Equip (flupsy, sorter)	1.1%	
28	TOTAL	20.5%	
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30	5. Permitting & Ground Leasing Costs (start-up costs)	0.4%	
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Challenges

- ▶ Diversity of industry gear and farm management
- ▶ Labor costs hard to determine



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Virginia Tech

<http://pubs.ext.vt.edu/AAEC/AAEC-40/AAEC-40.html>

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