

# GETTING THE MOST OUT OF YOUR FEED MONEY

## *How to Use the Cash Flow Simulator Spreadsheets*



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## 2 Introduction

This document explains how to use of the accompanying Cash Flow Simulator spreadsheets. The spreadsheets are built in Microsoft Excel. So, to use them, you will need to have Excel installed on your computer and have some basic understanding on how Excel spreadsheets operate.

There are two Excel files on the accompanying CD:

### 1. CashFlowSimulatorWithLimitedCapital.xls

This file is best used for a situation in which you have only a limited amount of operating capital available to purchase feed. Ideally, catfish should be fed daily to satiation, but farmers with substantial debt loads may have difficulty obtaining enough capital to feed all their fish to satiation. How should a farmer manage ponds if capital is lacking? If you simply distribute your limited amount of feed equally among all your ponds, only a minimal amount of fish will be able to reach market size. It is best to target feed towards ponds that have large biomass of fish close to market size to maximize your sales and improve your cash flow. This Excel spreadsheet may help you identify which ponds should be fed to satiation and which ponds may be cut back on feed.

### 2. CashFlowSimulator.xls

This file may be used to plan out feed requirements and fish sales by month. The value generated can then be copied and pasted into the business's overall cash flow budget.

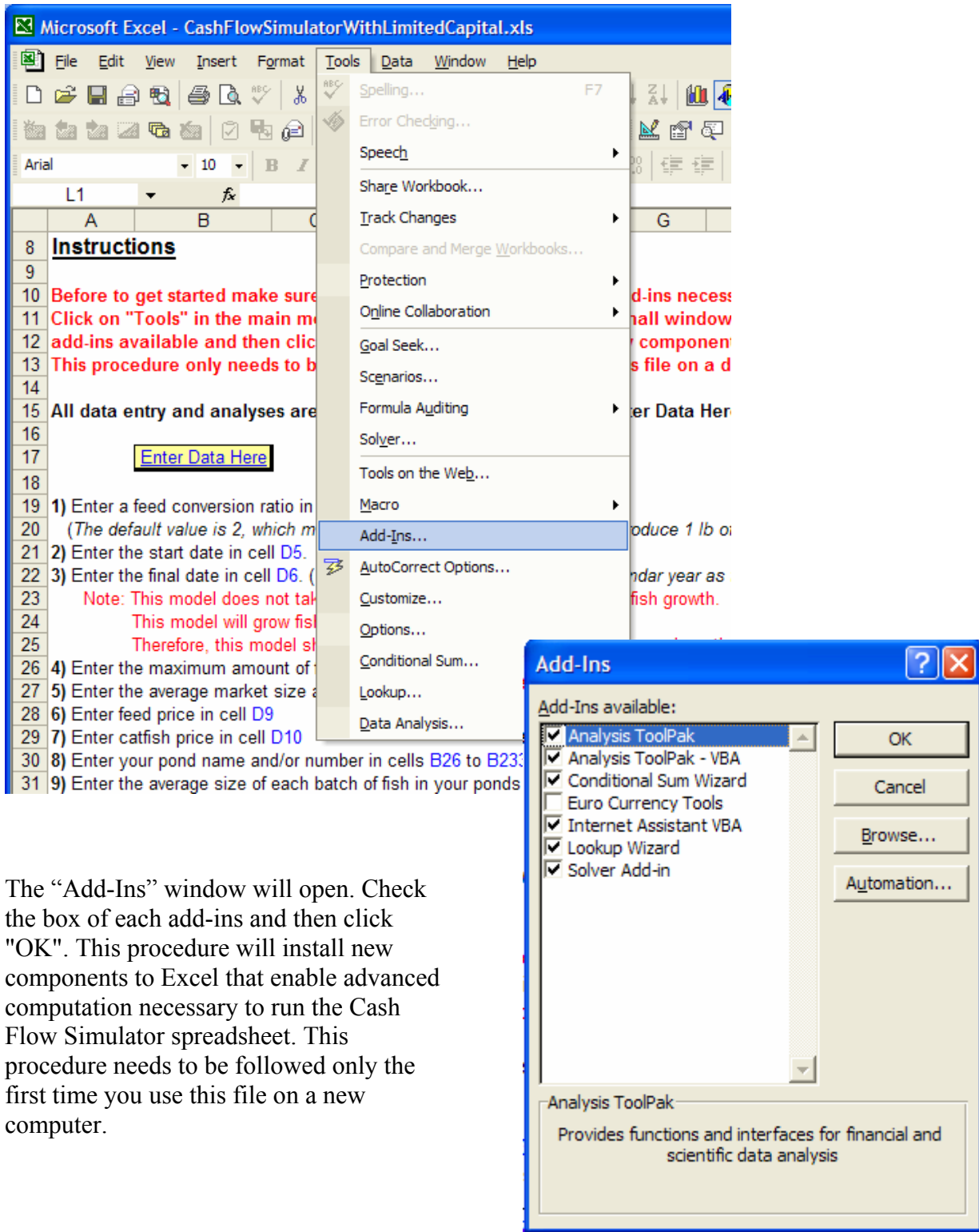
## 3 Cash Flow Simulator With Limited Capital

This file is best used for a situation in which you have only a limited amount of operating capital available to purchase feed. Ideally, catfish should be fed daily to satiation, but farmers with substantial debt loads may have difficulty obtaining enough capital to feed all their fish to satiation. How should a farmer manage ponds if capital is lacking? If you simply distribute your limited amount of feed equally among all your ponds, only a minimal amount of fish will be able to reach market size. It is best to target feed towards ponds that have large biomass of fish close to market size to maximize your sales and improve your cash flow. This Excel spreadsheet may help you identify which ponds should be fed to satiation and which ponds may be cut back on feed.

### 3.1 Getting started

Open Excel and open the file entitled "CashFlowSimulatorWithLimitedCapital.xls". If you are using this file for the first time, make sure your Excel program have all the add-ins necessary to run the calculations.

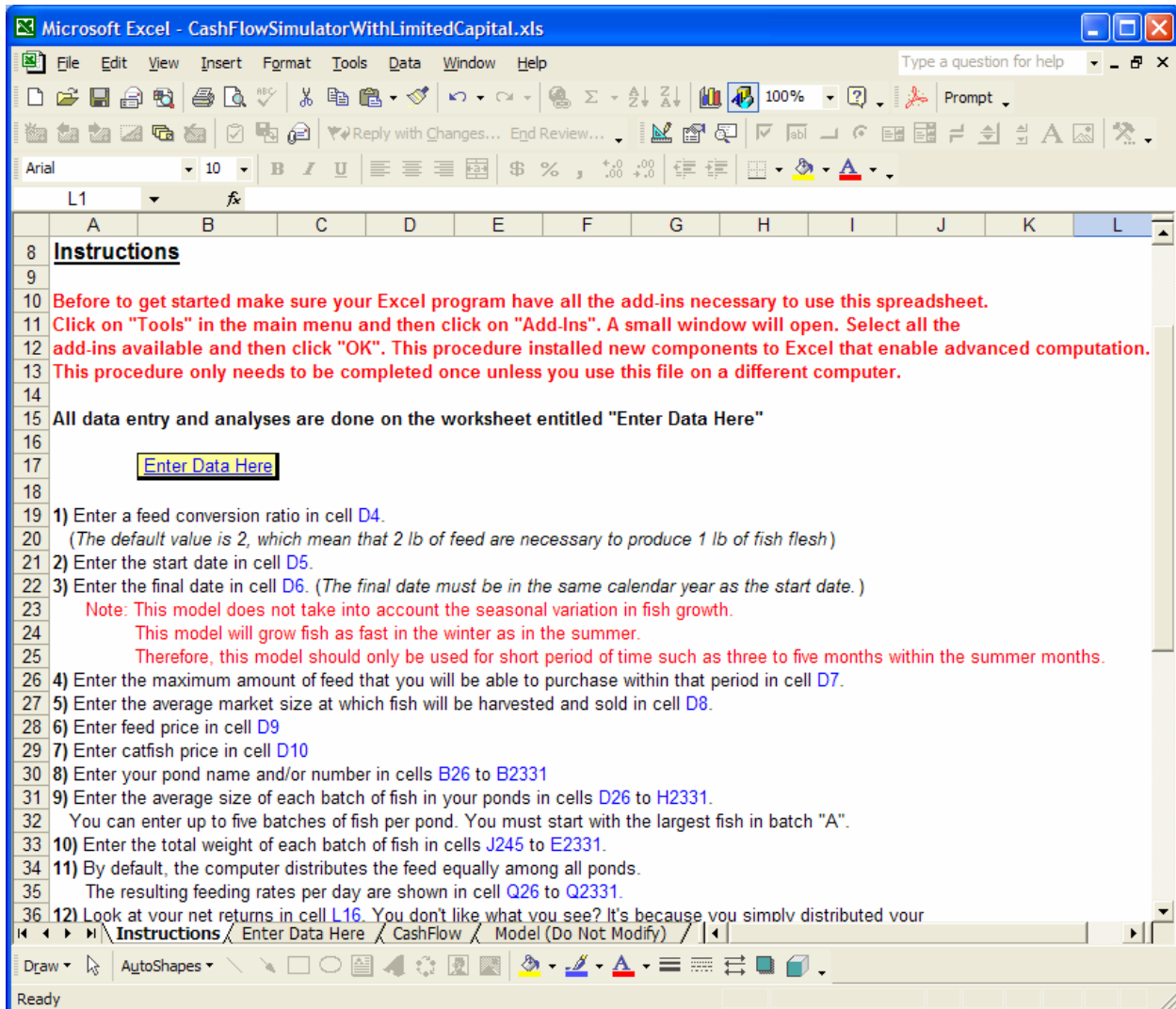
Click on "Tools" in the main menu and then click on "Add-Ins".



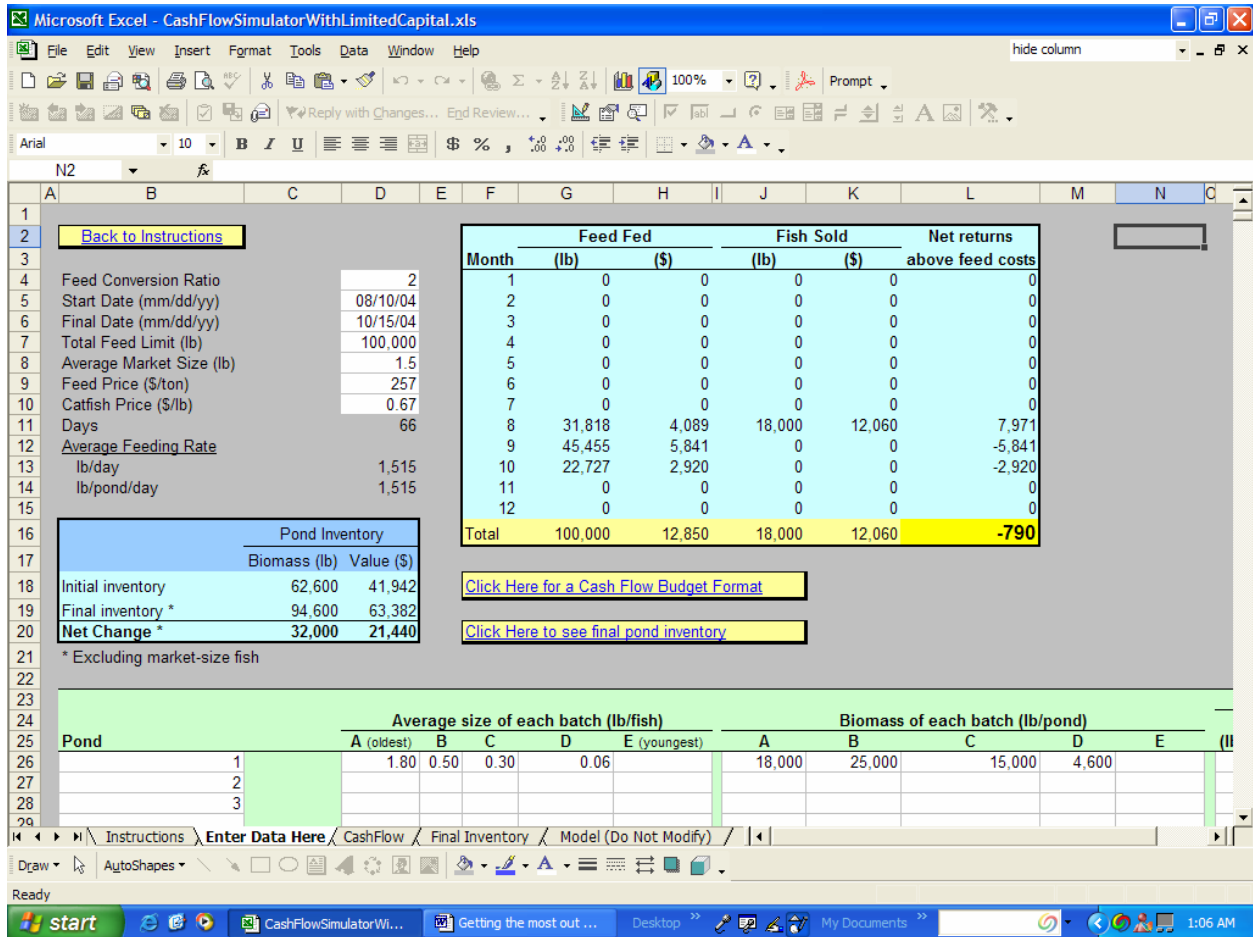
The "Add-Ins" window will open. Check the box of each add-ins and then click "OK". This procedure will install new components to Excel that enable advanced computation necessary to run the Cash Flow Simulator spreadsheet. This procedure needs to be followed only the first time you use this file on a new computer.

### 3.2 Data entry

Click on the tab labeled “Instructions” for detailed instructions.



Click on the tab or button labeled “Enter Data Here” to access the main worksheet where all data entry and analysis is done.



1) Enter a feed conversion ratio in cell D4. (The default value is 2, which mean that 2 lb of feed are necessary to produce 1 lb of fish flesh. However, you may enter the average historical feed conversion ratio based on your farm records.)

2) Enter the start date (mm/dd/yy) in cell D5 and the final date in cell D6. The final date must be in the same calendar year as the start date. Besides, note that the model does not take into account the seasonal variation in fish growth. This model will grow fish as fast in the winter as in the summer. Therefore, this model should only be used for short period of time such as three to five months within the summer months.

3) Enter the maximum amount of feed that you will be able to purchase within that period in cell D7.

4) Enter the average market size at which fish will be harvested and sold in cell D8.

5) Enter feed price in cell D9

6) Enter catfish price in cell D10

7) Enter your pond name and/or number in cells B26 to B2331.

8) Enter the average size of each batch of fish in your ponds in cells D26 to H2331. You can enter up to five batches of fish per pond. You must start with the largest fish in batch "A".

9) Enter the total weight of each batch of fish in cells J26 to E2331.

### ***3.3 Find the best feeding strategy***

By default, the computer distributes the feed equally among all ponds. The resulting feeding rates per day are shown in cell Q26 to Q2331. Look at your net returns in cell L16. You don't like what you see? It's because you simply distributed your limited amount of feed equally among all your ponds, and fish could not grow fast enough to reach market size. This Excel spreadsheet will help you identify which ponds need to be fed to satiation and which ponds can be cut back on feed in order to maximize your fish sales and cash flow.

Increase the daily feeding rates in the ponds of your choice (cells P26 to P2331). Note that when you increase the feeding rate of a pond (cells P26 to P2331), the feeding rate of the other ponds will decrease automatically (cell Q26 to Q2331) in order to respect your maximum feed limit entered in cell D7. Observe the effect on your net returns (cell L16) and cash flow (cell L4 to L15). By trials and errors, identify which ponds you need to allocate more feed to increase your net returns. **You may improve your cash flow and net returns by allocating more feed to ponds that have large biomass of fish close to market size.**

### ***3.4 Cash flow budget***

This model may help you plan out feed requirements and fish sales by month. The value generated can then be used into a business's overall cash flow budget. You may find an example of a cash flow budget by clicking on the tab labeled "CashFlow". The results from the model are automatically entered. However, you need to complete the estimates of other cash expenditure (green cells) to complete the budget.

Microsoft Excel - CashFlowSimulatorWithLimitedCapital.xls

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1														
2	Back													
3														
4	<b>Pro Forma Monthly Cash Flow Budget</b>													
5														
6	<b>Item</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Total</b>
21	Utilities													-
22	Other Operating Costs													-
23	Total Operating Expenses	-	-	-	-	-	-	-	4,088.64	5,840.91	2,320.45	-	-	12,850.00
24	<b>Fixed Cash Expenses</b>													
25	Taxes and Insurance													-
26	Total Fixed cash Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
27	<b>Living Expenses</b>													-
28	<b>Other Expenses</b>													-
29	<b>Scheduled Debt Payments</b>													-
30	Real Estate Principal													-
31	Interest													-
32	Equipment Principal													-
33	Interest													-
34	Operating Principal													-
35	Interest													-
36	<b>Total Cash Outflow</b>	-	-	-	-	-	-	-	4,088.64	5,840.91	2,320.45	-	-	12,850.00
37	<b>Cash Available</b>	-	-	-	-	-	-	-	7,971.38	2,130.45	(790.00)	(790.00)	(790.00)	(790.00)
38	<b>New Borrowing</b>													
39	<b>Cash Balance</b>	-	-	-	-	-	-	-	7,971.38	2,130.45	(790.00)	(790.00)	(790.00)	(790.00)
40	<b>Debt Outstanding</b>													
41	Real Estate													-
42	Equipment													-
43	Operating													-
44	<b>Cash Flow Coverage Ratio</b>													#DIV/0!
45	<b>Debt-Servicing Ratio</b>													-
46	<b>Cash Flow Risk and Sensitivity Ratio</b>													
47	cash available / total cash inflow													(0.07)
48	cash available / cash operating expenses													(0.06)
49	cash available / total liabilities													#DIV/0!
50														

Instructions / Enter Data Here / CashFlow / Final Inventory / Model (Do Not Modify)

Ready

start

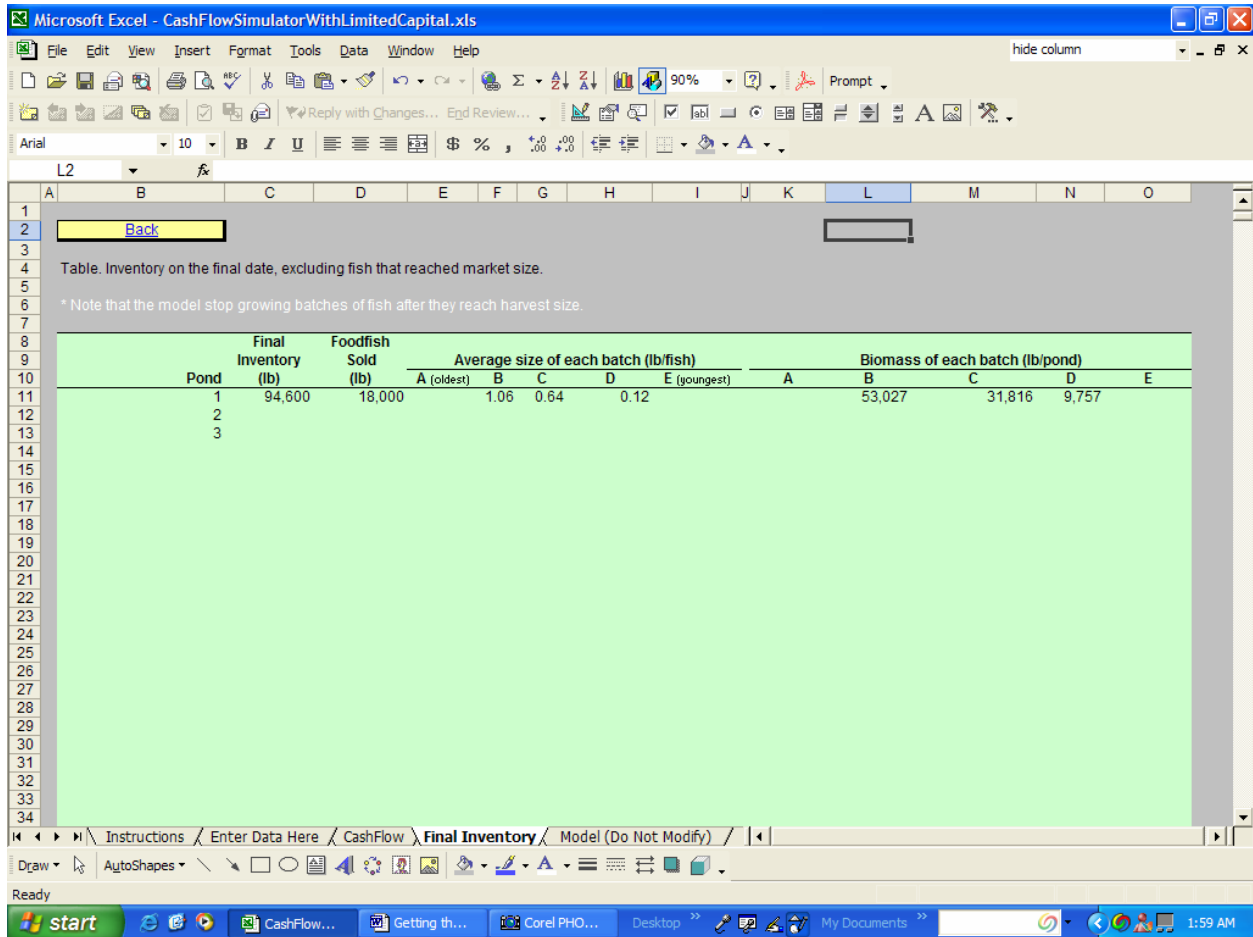
CashFlow... Getting th... Corel PHO... Desktop My Documents 1:57 AM

If you need assistance with financial analysis on your farm, contact Carole Engle at (870) 575-8523.

### 3.5 Final inventory

The detailed final inventory estimates for each pond are presented on the worksheet labeled “Final Inventory”. You can perform more growth and cash flow analysis based on those new inventory values. Simply copy and paste that information in the initial inventory estimates (worksheet labeled “Enter Data Here”). However, remember that if batches of fish reached market size they were harvested out of the inventory. Therefore, you need to move the younger batches to the left to make sure you always have the oldest batches in batch “A”.





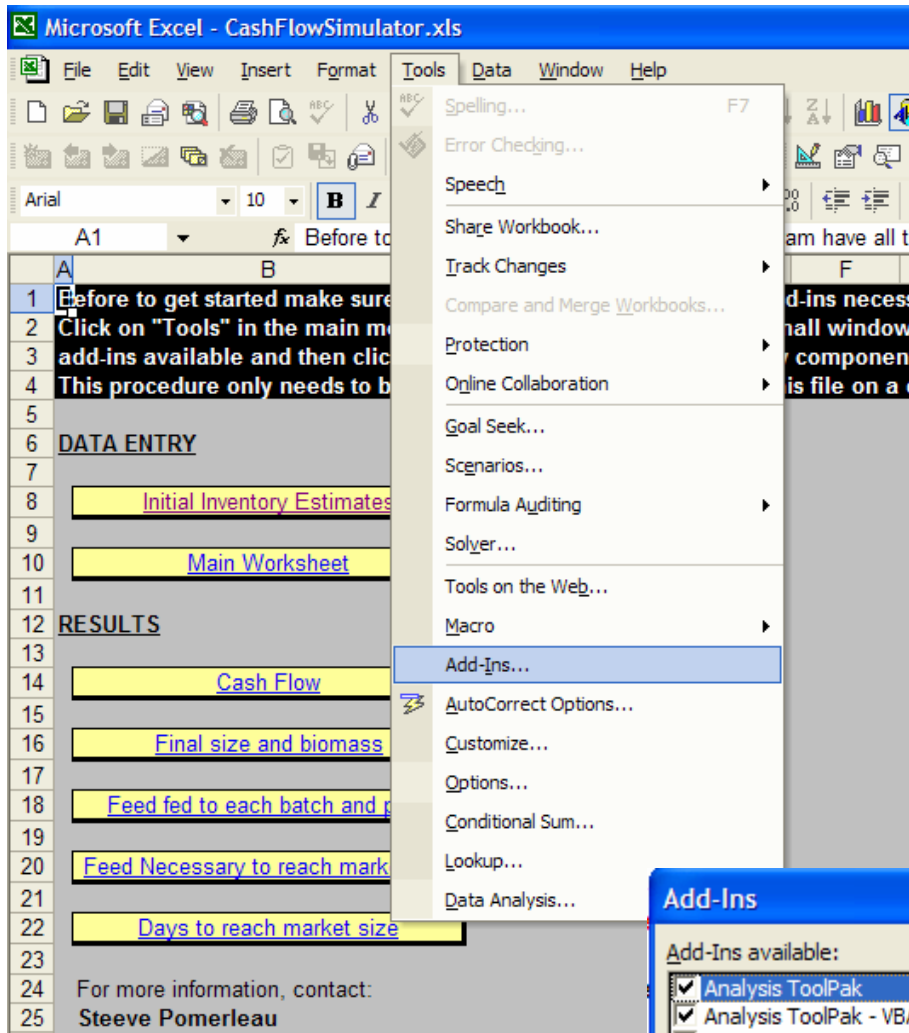
## 4 Cash Flow Simulator

This file may be used to plan out feed requirements and fish sales by month. The value generated can then be copied and pasted into the business’s overall cash flow budget. As opposed to the previous file, in this model you cannot specify a maximum feed limit. This model simply grow fish based on specified feeding rates.

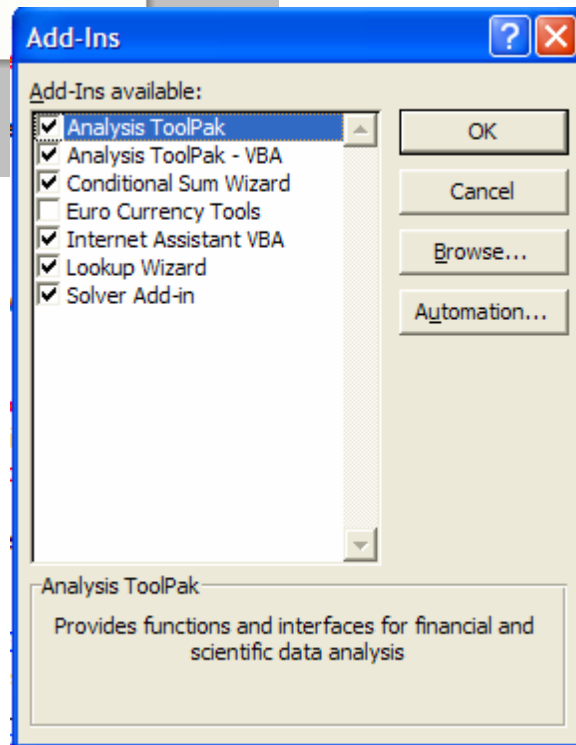
### 4.1 Getting started

Open Excel and open the file entitled “CashFlowSimulator.xls”. If you are using this file for the first time, make sure your Excel program have all the add-ins necessary to run the calculations.

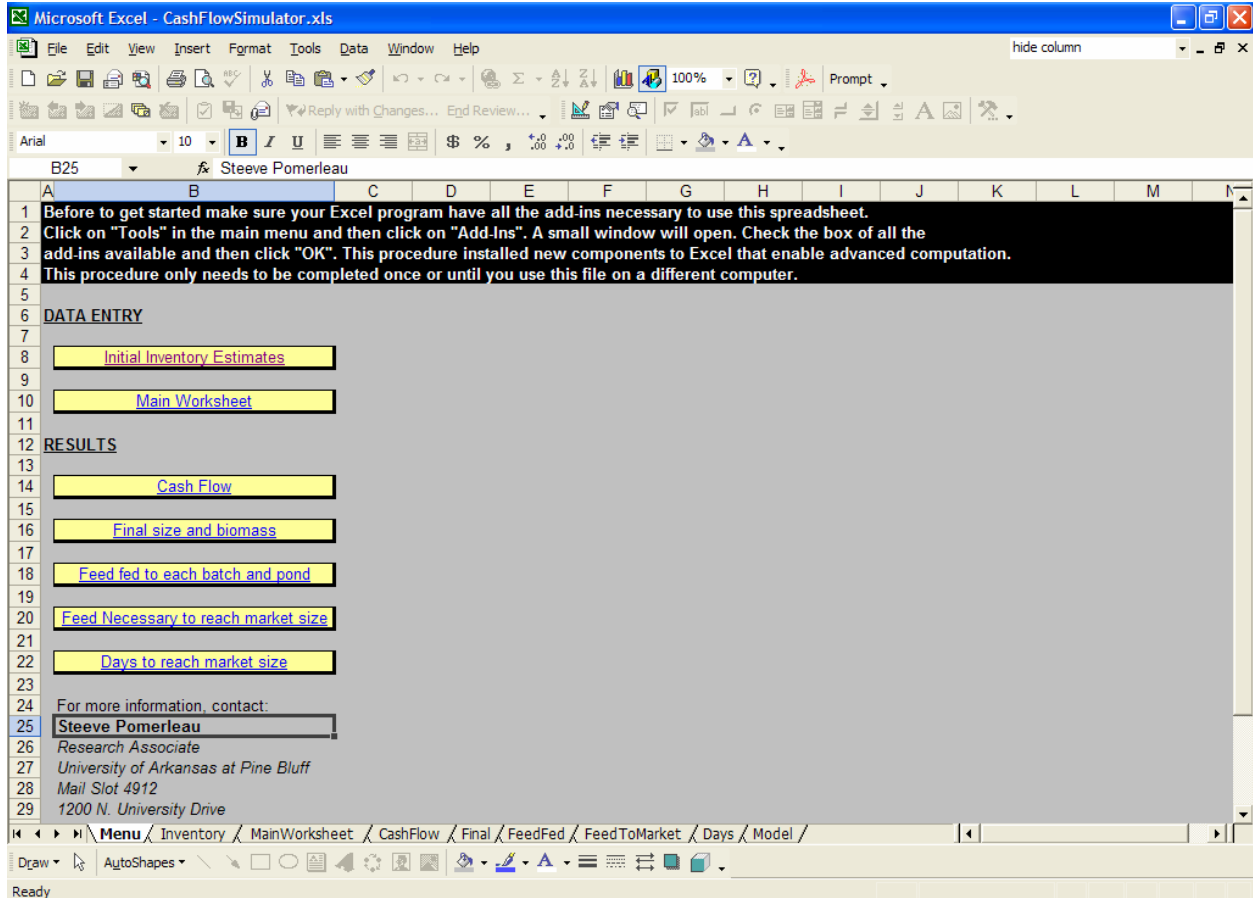
Click on “Tools” in the main menu and then click on “Add-Ins”.



The "Add-Ins" window will open. Check the box of each add-ins and then click "OK". This procedure will install new components to Excel that enable advanced computation necessary to run the Cash Flow Simulator spreadsheet. This procedure needs to be followed only the first time you use this file on a new computer.

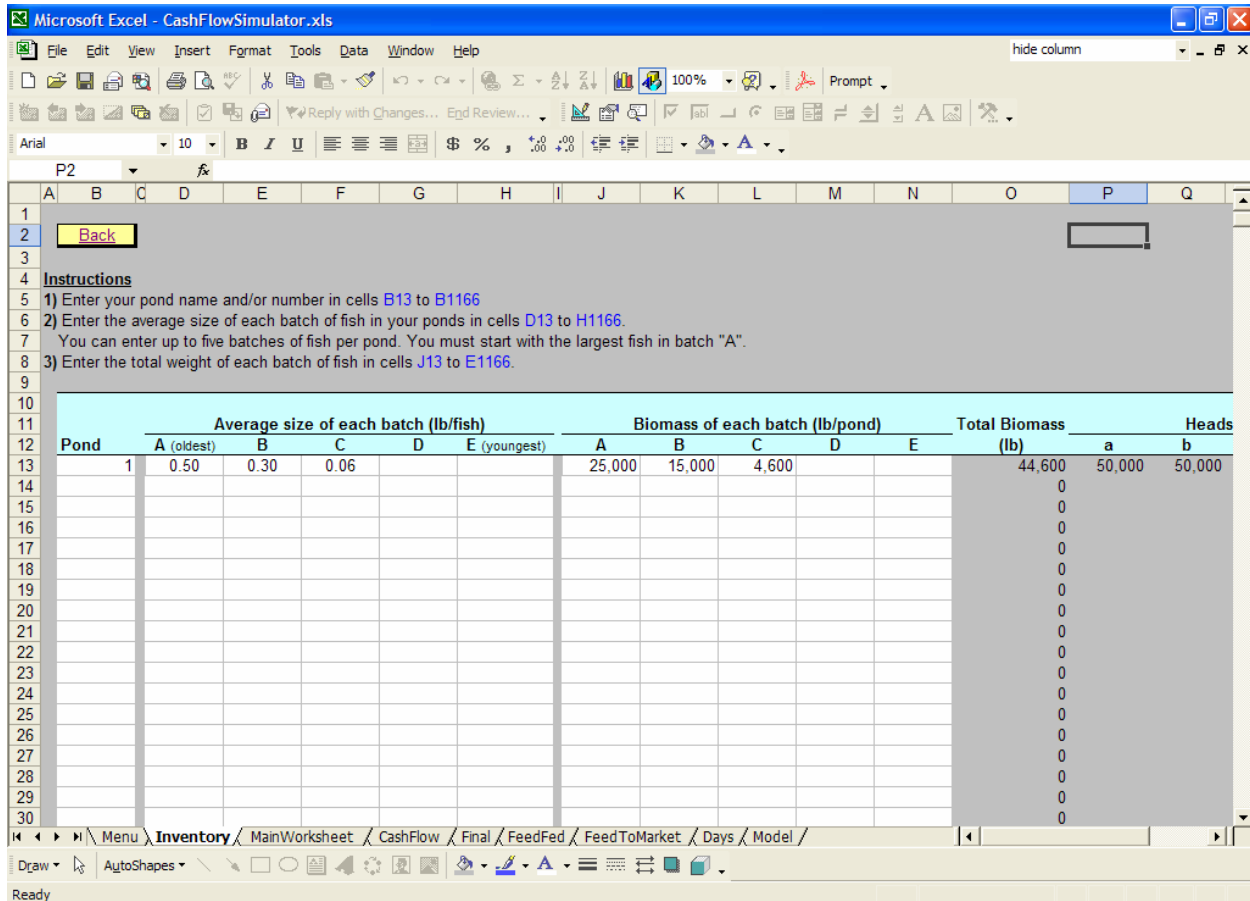


The worksheet labeled “Menu” should be the one displayed when the file is opened. Clicking on the different buttons will take you to the corresponding worksheets in the file.



## 4.2 Entry of inventory estimates

The first step to make this spreadsheet work for your farm is to click on the button labeled “Initial Inventory Estimates” to enter your estimated inventory by ponds.



- 1) Enter your pond name and/or number in cells B13 to B1166
- 2) Enter the average size of each batch of fish in your ponds in cells D13 to H1166. You can enter up to five batches of fish per pond. You must start with the largest fish in batch "A". It is important because leaving the batch "A" empty will cancel growth computation for that pond.
- 3) Enter the total weight of each batch of fish in cells J13 to E1166.

If you do not feel confident in your pond inventory estimates, then you should consult Extension people about developing pond inventory estimates. A number of lenders have required farms to provide pond-by-pond inventory estimates and these farms have reasonable estimates to enter into the spreadsheet.

Click the back button to return to the main menu.

**4.3 More data entry**

Click on the button labeled "Main Worksheet".

Microsoft Excel - CashFlowSimulator.xls

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13 (The default value is 2, which mean that 2 lb of feed are necessary to produce 1 lb of fish flesh)

14 6) What is the feeding rate in % body-weight of fish fed to satiation? Enter it in cell B32.

15 7) Will you feed fish to satiation (100%) or will you restrict feed (less than 100%)? Enter it in cell B33.

16 8) Enter the average market size at which fish will be harvested and sold in cell B34.

17 9) Look at the resulting net return in cell N34.

18

19

20

21 **Growing Period**

22 08/01/04 Start Date (mm/dd/yy)

23 11/01/04 Final Date (mm/dd/yy)

24 92 Days

25

26 **Prices**

27 267 Feed Price (\$/ton)

28 0.67 Catfish Price (\$/lb)

29

30 **Feeding Assumptions**

31 2 Feed Conversion Ratio

32 2.5% Satiation Feeding Rate (% body-weight/day)

33 100% Restricted Feeding (% of satiation rate)

34 1.6 Average Market Size (lb/fish)

35

36 **Average Feeding Rate**

37 2.093 lb/day

38 2.093 lb/pond/day

39

40

41

42

Month	Feed Fed		Fish Sold		Net returns above feed costs	
	(lb)	(\$)	(lb)	(\$)	(\$)	(\$)
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	40,585	5,418	0	0	0	-5,418
9	59,051	7,883	0	0	0	-7,883
10	89,375	11,932	0	0	0	-11,932
11	3,499	467	0	0	0	-467
12	0	0	0	0	0	0
<b>Total</b>	<b>192,511</b>	<b>25,700</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-25,700</b>

Pond Inventory		
	Biomass (lb)	Value (\$)
Initial inventory	44,600	29,882
Final inventory *	140,855	94,373
<b>Net Change *</b>	<b>96,255</b>	<b>64,491</b>

\* Excluding market-size fish

Menu / Inventory / MainWorksheet / CashFlow / Final / FeedFed / FeedToMarket / Days / Model /

Draw AutoShapes

Ready

1) Enter the start date in cell B22. and the final date in cell B23. (The final date must be in the same calendar year as the start date.) Note: This model does not take into account the seasonal variation in fish growth. This model will grow fish as fast in the winter as in the summer. Therefore, this model should only be used for short period of time such as two or three months within the summer months.

2) Enter feed price in cell B27

3) Enter catfish price in cell B28

4) Enter a feed conversion ratio in cell B31. (The default value is 2, which mean that 2 lb of feed are necessary to produce 1 lb of fish flesh. However, you may enter the average historical feed conversion ratio based on your farm records.)

5) Enter the feeding rate in % body-weight per day when fish are fed to satiation in cell B32. This value should be somewhere between 2.5 and 3.5 %.

6) Will you feed fish to satiation (100%) or will you restrict feed (less than 100%)? Enter it in cell B33. For example, if you decide to feed every other day, you may enter 80% in that cell considering that fish fed every other day would eat the equivalent of 80% of fish fed to satiation.

7) Enter the average market size at which fish will be harvested and sold in cell B34.

## 4.4 Main results

With the data entered, the model will automatically calculate the average overall lb/day of feed required (cell B37 and B38). The overall net returns over only feed costs is presented in cell N34.

You can now go back and change the basic assumptions to see what impact that will have on feed requirements, fish sales, cash flow above feed costs, time for fish in various size groups to reach market size, etc.

## 4.5 Cash flow budget

This model may help you plan out feed requirements and fish sales by month. The value generated can then be used into a business's overall cash flow budget. You may find an example of a cash flow budget by clicking on the tab labeled "CashFlow". The results from the model are automatically entered. However, you need to complete the estimates of other cash expenditure (green cells) to complete the budget.

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Beginning Cash	-	-	-	-	-	-	-	-	(5,418.13)	(13,201.46)	(25,233.01)	(25,700.19)	-
Receipts from catfish sale	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Inflow</b>	-	-	-	-	-	-	-	-	(5,418.13)	(13,201.46)	(25,233.01)	(25,700.19)	-
<b>Operating Cash Expenses</b>													
Fuel	-	-	-	-	-	-	-	5,418.13	7,883.33	11,931.55	467.18	-	25,700.19
Gas, Fuel, and Oil	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-
Labor	-	-	-	-	-	-	-	-	-	-	-	-	-
Harvesting & Handling	-	-	-	-	-	-	-	-	-	-	-	-	-
Hauling Misc	-	-	-	-	-	-	-	-	-	-	-	-	-
Office Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent	-	-	-	-	-	-	-	-	-	-	-	-	-
Repair and Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Operating Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Operating Expenses</b>	-	-	-	-	-	-	-	5,418.13	7,883.33	11,931.55	467.18	-	25,700.19
<b>Fixed Cash Expenses</b>													
Taxes and Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Fixed Cash Expenses</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Living Expenses</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Other Expenses</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Scheduled Debt Payments</b>													
Real Estate Principal	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment Principal	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Principal	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Cash Outflow</b>	-	-	-	-	-	-	-	5,418.13	7,883.33	11,931.55	467.18	-	25,700.19
<b>Cash Available</b>	-	-	-	-	-	-	-	(5,418.13)	(13,201.46)	(25,233.01)	(25,700.19)	(25,700.19)	(25,700.19)
<b>New Borrowing</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Balance</b>	-	-	-	-	-	-	-	(5,418.13)	(13,201.46)	(25,233.01)	(25,700.19)	(25,700.19)	(25,700.19)
<b>Debt Outstanding</b>													
Real Estate	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cash Flow Coverage Ratio</b>													RDY/RF
<b>Debt-Servicing Ratio</b>													RDY/RF
<b>Cash Flow Risk and Sensitivity Ratio</b>													

If you need assistance with financial analysis on your farm, contact Carole Engle at (870) 575-8523.

## 4.6 Final inventory

The detailed final inventory estimates for each pond are presented on the worksheet labeled “Final”. You can perform more growth and cash flow analysis based on those new inventory values. Simply copy and paste that information in the initial inventory estimates. However, remember that if batches of fish reached market size they were harvested out of the inventory. Therefore, you need to move the younger batches to the left to make sure you always have the oldest batches in batch “A”.

Pond	Final Inventory (lb)	Foodfish Sold (lb)	Final size for each batch (lb/fish)					Final biomass of each batch (lb)				
			a	b	c	d	e	a	b	c	d	e
1	140,855		1.58	0.95	0.18			78,955	47,373	14,528		

## 4.7 Additional results

The other tabs and worksheets in the model provide some additional information but are not necessary unless you just want to study the results in additional detail.

## 5 Help

For assistance, please contact:

Steeve Pomerleau  
Extension Aquaculture Specialist  
Aquaculture/Fisheries Center  
Mail Stop 4912  
University of Arkansas at Pine Bluff  
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Pine Bluff, AR 71601  
TEL: (870) 575-8139  
FAX: (870) 575-4638  
EMAIL: [spomerleau@uaex.edu](mailto:spomerleau@uaex.edu)