

Fish Banks

- You will play the role of a fishing company
 - Competing against other companies
 - Dealing with variations in fish populations and catch
- Let's go over:
 - The number of teams operating in the ocean
 - Rules for buying, selling and ordering ships
 - Operating costs, fish prices, fishing effectiveness and parameters governing fish reproduction

Your Goal

**Maximize your Net Worth
at the end of the game.**

Net Worth =

Bank Balance



+ Value of Fleet



**The winner is the team with the
highest Net Worth at game end**

Annual Profit

$$\text{Profit} = \text{Turnover} - \text{Expenses}$$

(\$/year)

- Fish Sales
- Ship Sales
- Interest Earnings

- Operating Costs
- Ship Purchases
- New Ship Orders
- Interest Charges

Turnover

- **Fish Sales** = **Catch** * **Fish Price**
(\$/Year) (Fish/Year) (\$/Fish)

Fish Price = \$20/fish

- **Ship Sales** = **Ships Sold** * **Ship Price**
(\$/Year) (Ships/Year) (\$/Ship)

Ship Price set by auction

- **Interest Earnings** = **Minimum Bank Balance** * **Interest Rate**
(\$/Year) (\$) (%/Year)

*Interest earned only if Minimum Balance is positive.
Interest Rate = 5%/year*

Expenses

- **Operating Costs** = **Annual cost for ships deployed to:**
(\$/Year) **Harbor, Coast, and Deep Sea**

*Harbor: \$50, Coast: \$150, Deep: \$250
per ship per year*

- **Ship Purchases** = **Ships Bought** * **Ship Price**
(\$/Year) **(Ships/Year)** * **(\$/Ship)**

Ship Price set by auction

- **Interest Charges** = **Minimum** * **Interest**
(\$/Year) **Bank Balance** **Rate**
(\$) * **(%/Year)**

*Interest charged whenever Minimum Balance is negative.
Interest Rate 10%/year.*

Expenses (continued)

- Each year you may order the construction of new ships.
- You pay for these ships this year and take delivery at the start of next year.
- **New Ship Purchases** = **Ships Ordered** * **New Ship Price**
(\$/Year) (Ships/Year) * (\$/Ship)

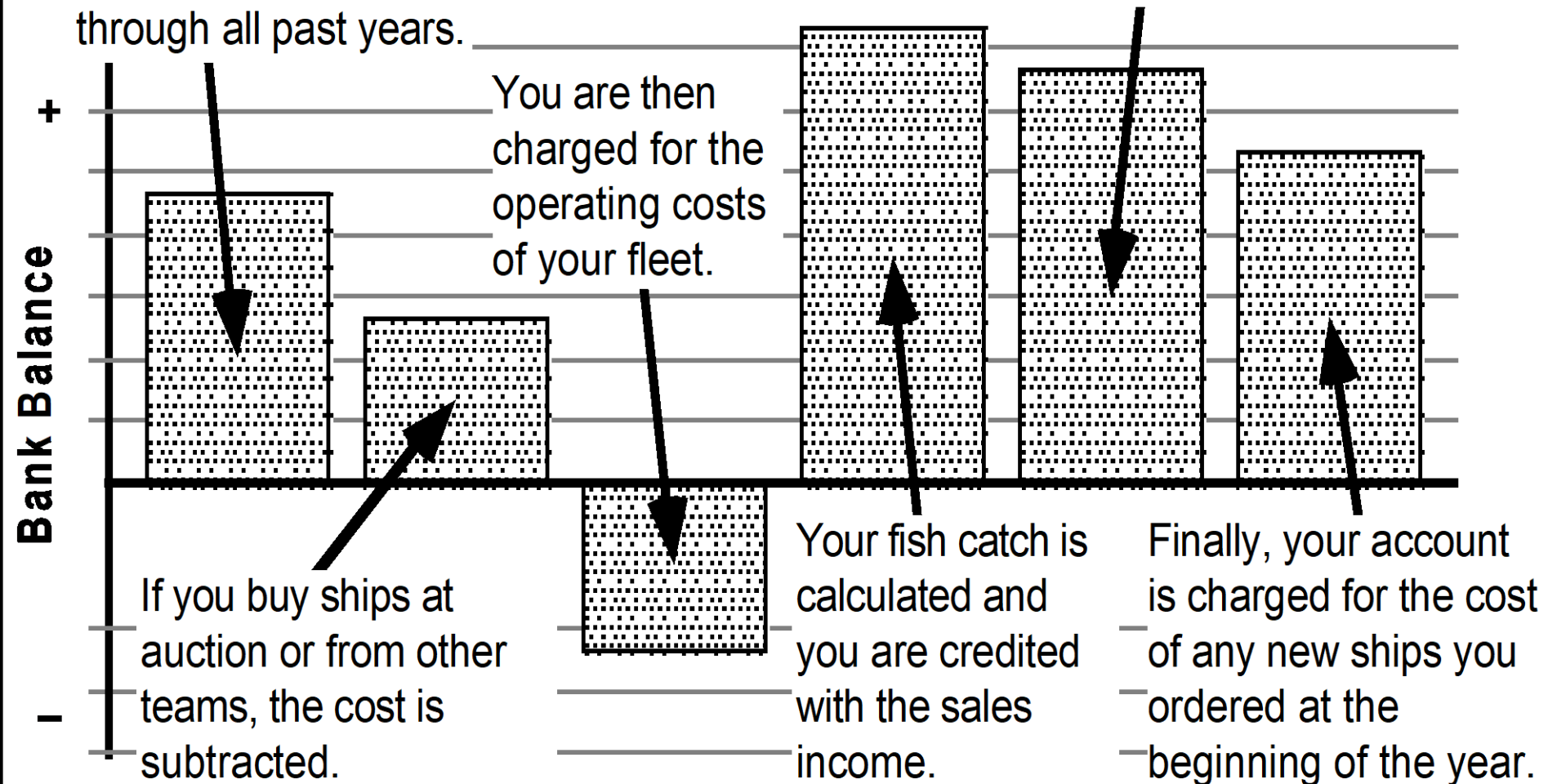
New Ship Price = \$300/Ship

Maximum New Ship Order is **half** of your current fleet (initial fleet + auction purchases), rounded up to the nearest whole number.

Sequence of Debits and Credits

You start the year with _____
a bank balance that _____
has accumulated _____
through all past years.

The minimum balance is calculated _____
and your account is adjusted by the _____
appropriate interest.



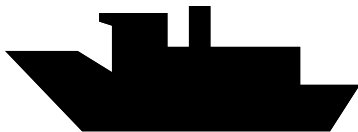
Fishing Fleet



- **Initial Fleet =**
3 Ships/team

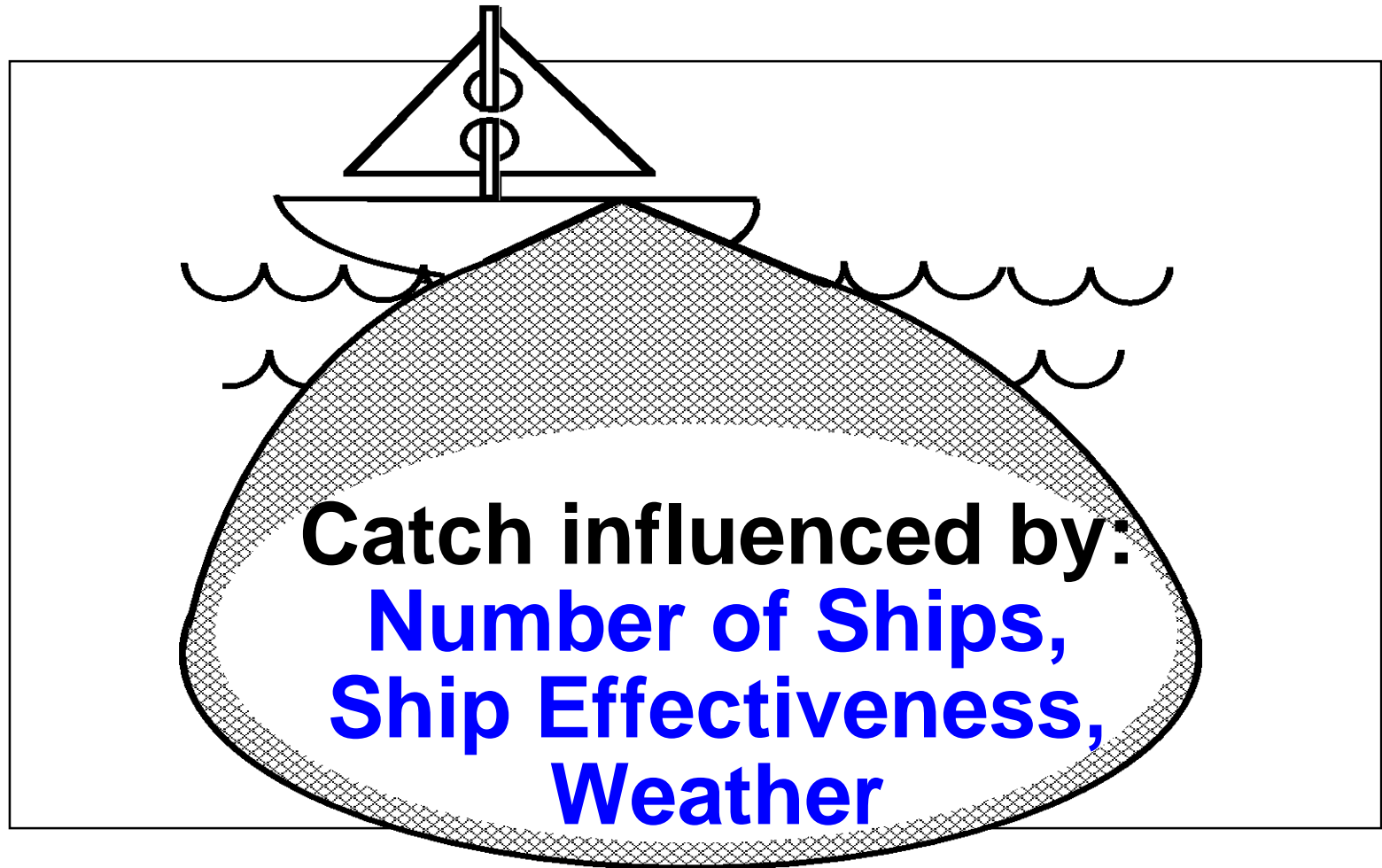


- **Fleet Growth**
 - Purchase from other teams or via bank auctions
 - Order new ships

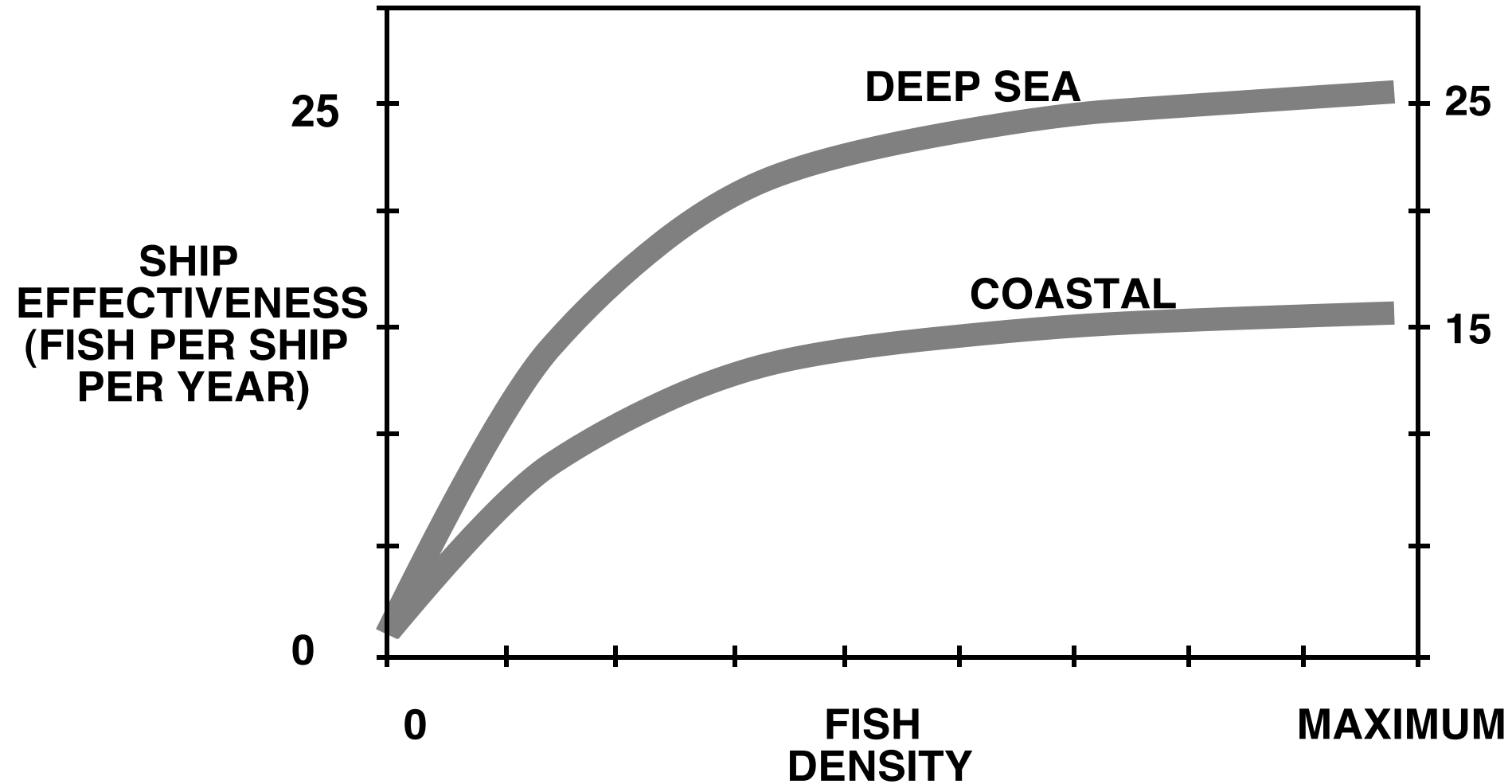


- **Fleet Reduction**
 - Sales to other teams via auctions

Catch



Ship Effectiveness



Ship Salvage

At the end of the game your ships will be scrapped. Their salvage value, the average value of annual profits earned by all ships in the ocean during the past two years, is included in your total assets. You may not scrap ships before the end of the game.

Fishing Areas

Deep Sea

**Maximum Population
2000 - 4000 Fish**

**Annual Operating Cost
\$250 per Ship-Year**

**Productivity
(Max Ship Effectiveness)
25 (Fish/year)/ship**

Coast

**Maximum Population
1000 - 2000 Fish**

**Annual Operating Cost
\$150 per Ship-Year**

**Productivity
(Max Ship Effectiveness)
15 (Fish/year)/Ship**

Profit Example

1 SHIP TO DEEP SEA

FISH SALES = 25 X \$20	\$500
OPERATING COST	- \$250

DEEP SEA SUBTOTAL	\$250
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1 SHIP TO COASTAL

FISH SALES = 15 X \$20	\$300
OPERATING COST	- \$150

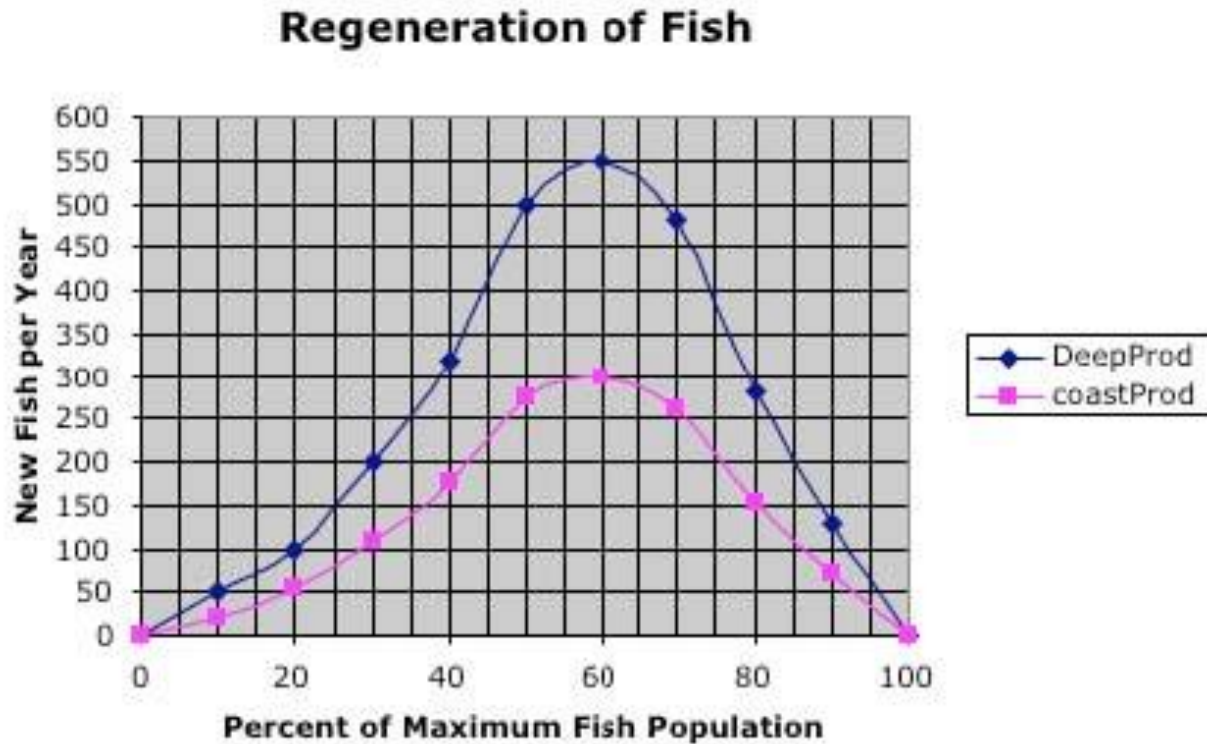
COASTAL SUBTOTAL	\$150
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1 SHIP TO HARBOR

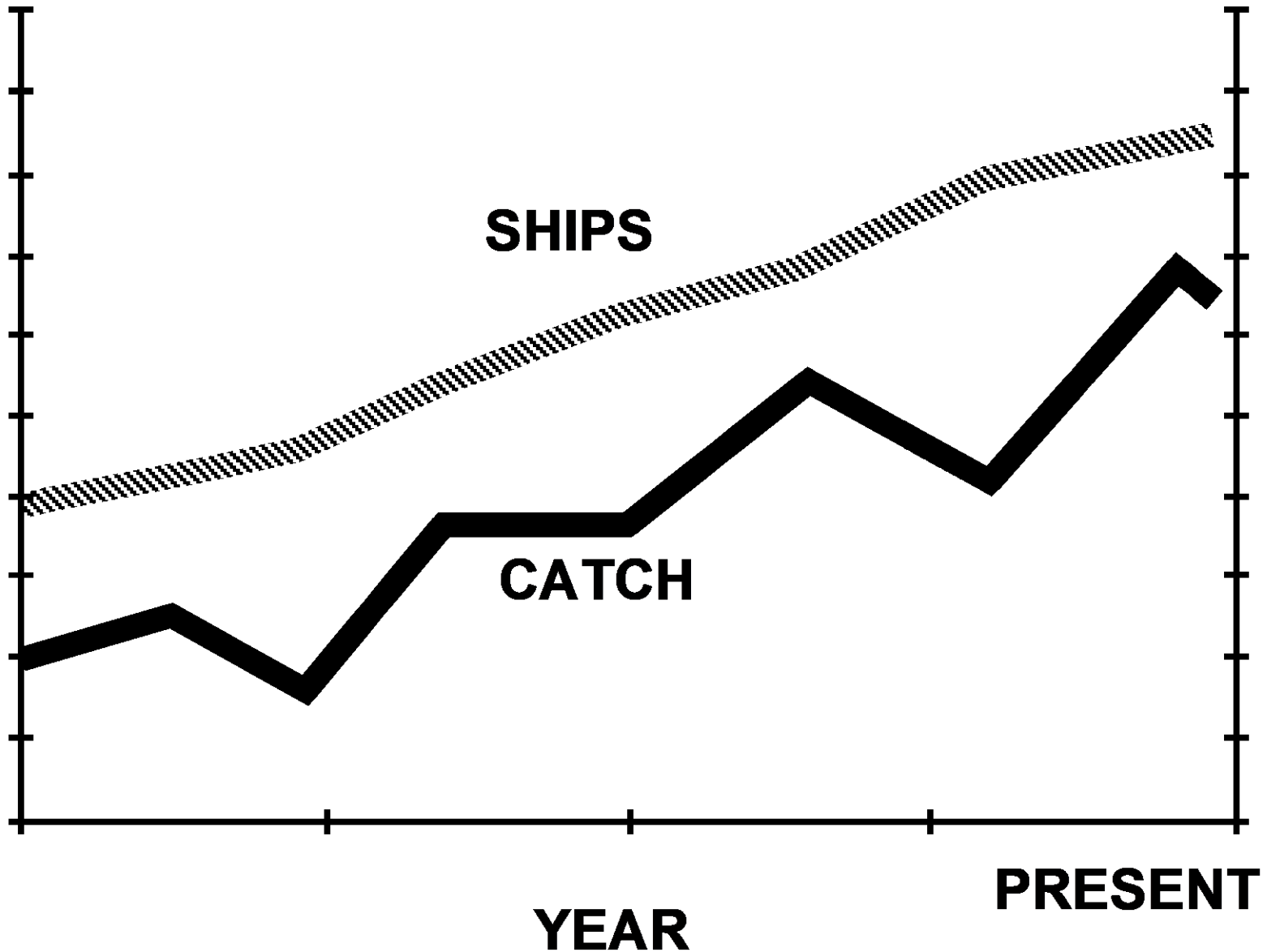
HARBOR COST	- \$50
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PROFIT	\$350
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Net Recruitment



Recent History of the Fisheries





FISHBANKS SIMULATION

Welcome to the Fishbanks Simulation

Student

- ◉ Play as individual
- ◉ Play as part of a class

Administrators

- ◉ Set up a new class
- ◉ Register as an administrator
- ◉ Administer an existing class



FISHBANKS SIMULATION

Welcome to the Fishbanks Simulation

Student

☐ Play as individual

☒ **Play as part of a class**

Login ID:

Password :

Login

Administrators

☐ Set up a new class

☐ Register as an administrator

☐ Administer an existing class

Data entry phase 1: Selling and buying ships

FISHBANKS

Your team data

Log out
Log in as Atlantic 1 in Ocean 1

DASHBOARD ANNUAL REPORT FISHERY DATA SHIP MARKET AUCTION HISTORY

YEAR 5 Make decisions for current year

Buy

SELLER	NUMBER OF SHIPS	RESERVE PRICE (\$/SHIP)
Atlantic 2	3 ships	100 ea. bid

Sell

No. of Ships:
Reserve Price:
[Make Offer](#)

5
CURRENT TOTAL FLEET
[proceed](#)

Here you will see auctions that you can bid for

Insert ships you want to sell and for how much (per ship)

You can send messages to all or to a specific team

Overall simulation data

Ship Market Value (\$ / Ship)			
Ship Market Value (\$ / Ship)	99		
Number of Ships (Ships)	5		
Value of Ships (\$)	497		
Bank Balance (\$)	329		
Total Assets (\$)	826		
Permitted Fish (Fish / Year)	20		

	Harbor	Coast	Deep
Expected Catch per Ship (Fish / Year / Ship)	0	16	26
Price of Fish (\$ / Fish)	20	20	20
Expected Revenue per Ship (\$ / Year / Ship)	0	314	524
Operating Cost per Ship (\$ / Year / Ship)	50	150	250
Expected Profit per Ship (\$ / Year / Ship)	-50	164	274

Maximum Ship Orders: 3
No. of ships: 3 x \$99 each
Total: 3

Ship allocation Ship Orders

Credits Help Feedback Report an issue

Ready for next year?

Click on proceed when ready (5 minutes first phase... might reduce afterwards).

Data entry phase 2: Deployment of ships and new ship orders

FISHBANKS

Log out
Logged in as Atlantic 1 in Ocean 1

DASHBOARD ANNUAL REPORT FISHERY DATA SHIP MARKET AUCTION HISTORY

YEAR 4 Make decisions for current year

Buy
SELLER NUMBER OF SHIPS RESERVE PRICE (\$/SHIP)

Sell
No. of Ships Reserve Price

3
CURRENT TOTAL FLEET

HARBOR COAST DEEP

Insert how you want to deploy your ships

Insert how you many ships you want to order

	Harbor	Coast	Deep
Ship Market Value (\$ / Ship)	311		
Number of Ships (Ships)	3		
Value of Ships (\$)	934		
Bank Balance (\$)	1,168		
Total Assets (\$)	2,103		
Permitted Fish (Fish / Year)	20		

	Harbor	Coast	Deep
Expected Catch per Ship (Fish / Year / Ship)	0	17	28
Price of Fish (\$ / Fish)	20	20	20
Expected Revenue per Ship (\$ / Year / Ship)	0	333	556
Operating Cost per Ship (\$ / Year / Ship)	50	150	250
Expected Profit per Ship (\$ / Year / Ship)	-50	183	306

Ship allocation
Harbor: 0 Coast: 1 Deep: 2

Ship Orders
Maximum Ship Orders: 2
No. of ships: 2 x 300 each
Total: 0

Ready for next year?
proceed

Credits Help Feedback Report an issue

Click on proceed when ready (5 minutes first phase... might reduce afterwards).
At least 8 rounds will be played

Let's Go Fishing



Winslow Homer, Fishing Boats, Key West (1903)

To Log On:

<http://bit.ly/fishbanks>

(<http://forio.com/simulate/mit/fishbanks/simulation/login.html>)

Develop your Strategy

- 1. Your goal is to end the game with the maximum possible assets.**
- 2. Discuss within your team what strategies for boat acquisition and allocation you will follow to attain this.**
- 3. Write your strategy down.**