

Balance in the Bay

Worksheet/Summary/Graph Sample Key - Cover Sheet

High School/Community College/Undergraduate

Attached you will find a sample key for two fishing seasons for three fleets. For each fleet, the Fishing Fleet Computation Worksheet has been completed for each season. Additionally, we have included a completed Community Fishery Summary Sheet and Graph for the sample. We hope that this helps you facilitate the activity better with your students.

Thank you, Voices of the Bay Fisheries Education Program



VOICES *SAMPLE *	Dalance in the day	Student Fishing Fleet Member Names:
≣BAY	Fishing Fleet Computation Worksheet	Team
FISHING SEASON (circle one) 1 2 3	4 5	
1. Number of paperclips collected from a	ll boats in your fleet: = A 132	
2. The pounds of squid caught (A) from al	ll boats in your fleet: A x 1,000 = B	$132 \times 1,000 = 132,000 \ lbs$
3. Reduce total catch (B) by 2% for bycatc	th: $B \times 0.98 = C$ 32,000 × C	.98 = 129,360 lts
4. Subtract 50,000 lbs squid per active bo i n your fleet) = D		C – (50,000 x Number of Boats Fishing $(,000 \times 1) = 79,360.005$
5. For this simulation, the dockside sale p multiply remaining pounds (D) by \$0.25: I		25/lb. To calculate seasonal earnings, .25 = \$19,840
6. Did you make a profit this season or die	d you lose money? Profit	
7. Extra boats (F) cost \$10,000 each. Woul How many boats will you be purchasing	d you like to purchase additional b g? Cost for additional boat	oats? s (F): F x \$10,000 = G ↓ × 10,000 = \$10,000
8. Final season net profit/losses: E - G = 19, 840 - 10,000 = 40	Season Net Profit	/Losses
	Fishing Fleet Computation Worksheet	Student Fishing Fleet Member Names:
FISHING SEASON (circle one) 1 2 3		
1. Number of paperclips collected from a		
2. The pounds of squid caught (A) from al	ll boats in your fleet: A x 1,000 = B	164 × 1,000 = 164,000 lbs
3. Reduce total catch (B) by 2% for bycatc	h: $B \times 0.98 = C / (C \times 0.00) \times 0.00$	18 = 160,720.005
4. Subtract 50,000 lbs squid per active bo in your fleet) = D		C - (50,000 x Number of Boats Fishing (x 2) = (0, 720 lbs)
5. For this simulation, the dockside sale p multiply remaining pounds (D) by \$0.25: [rice for squid is estimated to be \$0.	
6. Did you make a profit this season or did	d you lose money? Profit	
7. Extra boats (F) cost \$10,000 each. Woul How many boats will you be purchasing	d you like to purchase additional b g? Cost for additional boat	oats? 4 s (F): F x \$10,000 = G 1 × 10,000 > \$10,0
8. Final season net profit/losses: E - G =	Season Net Profit/	Losses
15,180-10,000=		42,180

098

*Sample * ∎BAY	Balance in the Bay Fishing Fleet Computation Worksheet	Student Fishing Fleet Member Names:
FISHING SEASON (circle one) 12 3	3 4 5	
1. Number of paperclips collected from a	all boats in your fleet: = A HHZ	
2. The pounds of squid caught (A) from a	Il boats in your fleet: A x 1,000 = B	442×1,000=442,000 lbs
3. Reduce total catch (B) by 2% for bycate	ch: $B \times 0.98 = C 442,000 \times C$	0.98 = 433,160.lbs
4. Subtract 50,000 lbs squid per active bo in your fleet) = D 433	bat in your fleet for operating costs: $3,160 - (50,000 \times 1) = 3$	
5. For this simulation, the dockside sale p multiply remaining pounds (D) by \$0.25:	$D \times $0.25 = E = 383,160 \times C$	25/lb. To calculate seasonal earnings, 0.25 = \$75,790
6. Did you make a profit this season or di	id you lose money? Profit	
7. Extra boats (F) cost \$10,000 each. Wou How many boats will you be purchasin	ng? <u></u> Cost for additional boat	$F(F): F \times $10,000 = G + 10,000 = $70,000$
8. Final season net profit/losses: $E - G = 95$, $790 - 70,000 = 2	Season Net Profit	Losses \$25,790
VOICES ≝ BAY	Balance in the Bay Fishing Fleet Computation Worksheet	Student Fishing Fleet Member Names:
		Team 2
FISHING SEASON (circle one) 1 2 3	4 5	Team 2
1. Number of paperclips collected from a	4 5 Il boats in your fleet: = A 695	Team 2
 Number of paperclips collected from a The pounds of squid caught (A) from a 	4 5 Il boats in your fleet: = A 695 Il boats in your fleet: A x 1,000 = B	Team 2
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatch 	4 5 Il boats in your fleet: = A 695 Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C $695,000 \times C$	198 = 681,100.2bs
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatc Subtract 50,000 lbs squid per active bc 	4 5 Il boats in your fleet: = A 695 Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C $695,000 \times C$	98 = 681,100 Lbs C - (50,000 x Number of Boats Fishing
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatc Subtract 50,000 lbs squid per active bc 	4 5 Il boats in your fleet: = A (GGS Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C ($GS, DO \times C$ pat in your fleet for operating costs: $GI, ICO - (SO, DD \times B)$ price for squid is estimated to be \$0.	0.98 = 681,100 lbs C - (50,000 x Number of Boats Fishing = 281,100 . Lbs
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatch Subtract 50,000 lbs squid per active boost in your fleet) = D For this simulation, the dockside sale p 	4 5 Il boats in your fleet: = A (35) Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C $(35,000 \times 0)$ bat in your fleet for operating costs: B1,100 - $(50,000 \times 8)$ price for squid is estimated to be \$0. D x \$0.25 = E $(281,100 \times 0)$	0.98 = 681,100 lbs C - (50,000 x Number of Boats Fishing = 281,100 .bs 25/lb. To calculate seasonal earnings,
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatch Subtract 50,000 lbs squid per active boost in your fleet) = D For this simulation, the dockside sale p multiply remaining pounds (D) by \$0.25: 1 Did you make a profit this season or dia Extra boats (F) cost \$10,000 each. Would 	4 5 Il boats in your fleet: = A (GGS Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C ($GS, DO \times C$ pat in your fleet for operating costs: $GI, ICO - (SO, DD \times B)$ price for squid is estimated to be \$0. D x \$0.25 = E $2SI, ICO \times D$ d you lose money? Profit Id you like to purchase additional be	0.98 = 681,100265 C - (50,000 x Number of Boats Fishing = 281,100.265 25/lb. To calculate seasonal earnings, 25 = \$70,275
 Number of paperclips collected from a The pounds of squid caught (A) from a Reduce total catch (B) by 2% for bycatch Subtract 50,000 lbs squid per active boost in your fleet) = D For this simulation, the dockside sale p multiply remaining pounds (D) by \$0.25: 1 Did you make a profit this season or dia Extra boats (F) cost \$10,000 each. Would 	4 5 Il boats in your fleet: = A (35) Il boats in your fleet: A x 1,000 = B th: B x 0.98 = C $(35,000 \times 0)$ bat in your fleet for operating costs: bat in your	$C = (50,000 \times \text{Number of Boats Fishing}$ $= 281,100 \text{ . Lbs}$ $25/\text{lb. To calculate seasonal earnings,}$ $25 = $70,275$ $coats? = 870,275$

VOICES BAY	E State Balance in the Bay Fishing Fleet Computation Worksheet	Student Fishing Fleet Member Names:
FISHING SEASON (circle one)		Jean S
1. Number of paperclips collecte	d from all boats in your fleet: = A 276	
2. The pounds of squid caught (A) from all boats in your fleet: A x 1,000 = B	276×1,000 = 276,000 lbs
3. Reduce total catch (B) by 2% fo	or by catch: $B \times 0.98 = C 276,000 \times C$	1.98 = 270,480.lbs
	active boat in your fleet for operating costs: $70, 480 - (50,000 \times 1) = 220$	
	le sale price for squid is estimated to be \$0.	
6. Did you make a profit this seas	on or did you lose money? Profit	
 Extra boats (F) cost \$10,000 eac How many boats will you be put 	ch. Would you like to purchase additional b urchasing? Cost for additional boat	$oats?$ 4 4 $5 \times 10,000 = 3$ $5 \times 10,000 = 3$ 5
8. Final season net profit/losses: I 55,120 - St	G = Season Net Profit, $OOO = $5,120$	Losses \$5,120
VOICES 클 BAY	Balance in the Bay Fishing Fleet Computation Worksheet	Student Fishing Fleet Member Names:
FISHING SEASON (circle one) 1	2 3 4 5	
1. Number of paperclips collected	from all boats in your fleet: = A $\sqrt{38}$	
2. The pounds of squid caught (A)		
2 Poduco total catch (P) by 20/ fo) from all boats in your fleet: $A \times 1,000 = B$	$138 \times 1,000 = 138,000 \text{ lbs}$
5. Reduce total catch (b) by 2% to) from all boats in your fleet: $A \ge 1,000 = B$ r bycatch: $B \ge 0.98 = C$ $38,000 \le C$	
		C – (50,000 x Number of Boats Fishing
 Subtract 50,000 lbs squid per a in your fleet) = D 	r bycatch: B x 0.98 = C $ 38,000 \times C$ ctive boat in your fleet for operating costs: $ 38,240 - (50,000 \times 6) =$ e sale price for squid is estimated to be \$0.	2.98 = 135,240.Lbs C - (50,000 x Number of Boats Fishing - 164, 760 Lbs
 4. Subtract 50,000 lbs squid per a in your fleet) = D 5. For this simulation, the docksid multiply remaining pounds (D) by 	r bycatch: B x 0.98 = C $ 38,000 \times C$ ctive boat in your fleet for operating costs: $ 38,240 - (50,000 \times 6) =$ e sale price for squid is estimated to be \$0.	C – (50,000 x Number of Boats Fishing – 164, FleD Lbs 25/lb. To calculate seasonal earnings,
 Subtract 50,000 lbs squid per a in your fleet) = D For this simulation, the docksid multiply remaining pounds (D) by Did you make a profit this sease Extra boats (F) cost \$10,000 each 	r bycatch: B x 0.98 = C $[38,000 \times C]$ ctive boat in your fleet for operating costs: $[38,240 - (50,000 \times G) =$ e sale price for squid is estimated to be \$0. \$0.25: D x \$0.25 = E -164 , 760 x on or did you lose money? <u>Lose</u> th. Would you like to purchase additional boat rchasing? <u>Cost for additional boat</u>	$C = (50,000 \times \text{Number of Boats Fishing})$ = 164, 760 Lbs 25/1b. To calculate seasonal earnings, C = 5 = 5 - 41, 190 C = 5 = 5 - 41, 190 C = 5 = 5 - 41, 190
 Subtract 50,000 lbs squid per a in your fleet) = D For this simulation, the docksid multiply remaining pounds (D) by Did you make a profit this sease Extra boats (F) cost \$10,000 each 	r bycatch: $B \ge 0.98 = C \ 38,000 \ \times C$ ctive boat in your fleet for operating costs: $ 38,240 - (50,000 \ \times 6) =$ e sale price for squid is estimated to be \$0. $$0.25: D \ge 0.25 = E - 164, 460 \ \times$ on or did you lose money? bo or did you lose money? ch. Would you like to purchase additional boat rchasing? Cost for additional boat -G = Season Net Profit/	$C = (50,000 \times \text{Number of Boats Fishing})$ $C = (50,000 \times \text{Number of Boats Fishing})$ $C = (164, 760 \text{ Lbs})$ $C = (1$

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*SAMPLE *

Balance in the Bay Community Fishery Summary Sheet

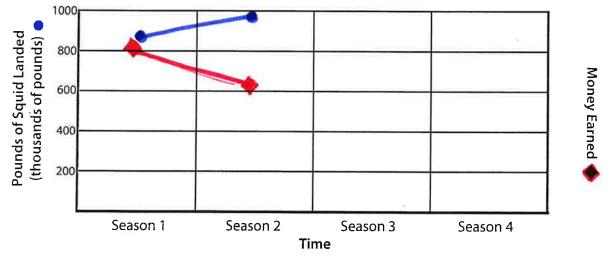
	Sample		Season 1		Seas	Season 2		Season 3		Season 4		
	lbs squid caught	# boats purchased	129,360	Ĩ	160,720)						
Fleet 1	Net profit/losses		\$9,	840	\$5,1	30						
Fleet 2	lbs squid caught	# boats purchased	433,160	7	681,100	Ø						
Fleet Z	Net profit/losses		\$25,	790	\$70,	275						
Fleet 3	lbs squid caught	# boats purchased	270,480	5	135,240	Ø						
Fleet 5	Net pro	fit/losses	\$5,	120	\$-41.	190						
Elect 4	lbs squid caught											
Fleet 4	Net profit/losses											
Fleet 5	lbs squid # boats caught purchased	# boats purchased										
Fleet 5	Net pro	fit/losses										
Total pounds of squid caught (T)	T (sum of each fleet's catch)		833,000		977,060			Ť				
Total # paperclips collected (P)	T / 1,000 = P		833		977.06							
Total # paperclips remaining in fishing grounds (R)	1,000 – P = R		167		22.94							
Total reproduction for next season (N)	R x 10 = N		1,670		220	229.4						
Number of paperclips to return to fishing grounds for start of next season (S)	N – R = S		1,503		206.5 (207)							



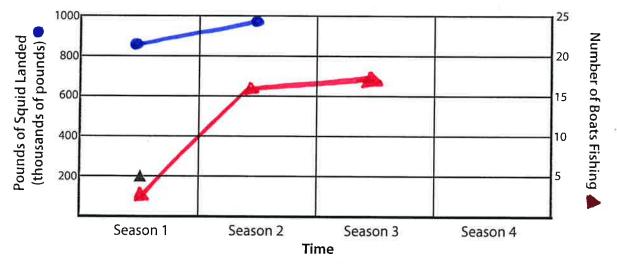
* SAMPLE *

Balance in the Bay Community Fishery Graphs

1. Compare the pounds of squid landed (T) and the money earned (summed net profits/ losses) each season.



2. Compare the pounds of squid landed (T) and total number of boats fishing each season.



3. Compare the pounds of squid in the population (S + R) at the end of each season.

