

Student Pages

Creating tables for the pond populations over time can help you study these four scenarios. Have your group members select and complete a different table for each scenario then share your results. Use the integer part of each value so don't round after each computation. Complete the table for Years 0 – 10.

Scenario A

Stock the pond with 5000 fish. Harvest 10% each year and then order 1000 fish.

Year	Spring Survivors	Mid Summer Harvest	Summer Harvest Survivors	Fall Additions
0	0	0	0	5000
1	$.90(0+5000)=4500$	$.10 \times 4500=450$	$.90 \times 5400=4050$	1000
2				
3				
4				
5				
6				
7				
8				
9				
10				

Scenario B

Stock a pond with 5000 fish. Harvest 20% each year and then order 1000 fish.

Year	Spring Survivors	Mid Summer Harvest	Summer Harvest Survivors	Fall Additions
0	0	0	0	5000
1	$.80(0+5000)=4000$	$.20 \times 4000=800$	$.80 \times 4000=3200$	1000
2				
3				
4				
5				
6				
7				
8				
9				
10				

Scenario C

Stock a pond with 3000 fish. Harvest 30% each year and then order 3000 fish.

Year	Spring Survivors	Mid Summer Harvest	Summer Harvest Survivors	Fall Additions
0	0	0	0	3000
1	$.70(0+3000)=2100$	$.30 \times 2100=630$	$.70 \times 2100=1470$	3000
2				
3				
4				
5				
6				
7				
8				
9				
10				

Scenario D

Stock a pond with 3000 fish. Harvest 40% each year and then order 4000 fish.

Year	Spring Survivors	Mid Summer Harvest	Summer Harvest Survivors	Fall Additions
0	0	0	0	3000
1	$.60 (0+3000)=2400$	$.40 \times 2400=960$	$.60 \times 2400=1440$	4000
2				
3				
4				
5				
6				
7				
8				
9				
10				

Which scenario will lead to higher harvests? Which one leads to a stable harvest?