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FISH 558

HW 5

Part A

A whiteboard with writing on it

Description automatically generated with low confidence

Part C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Harvest alternatives | States of Nature (SJ) | | | Expected Number of Adults |
| SJ = 0.75  (prob = 1/3) | SJ = 0.8  (prob = 1/3) | SJ = 0.82  (prob = 1/3) |
| Area 1 | 156 | 1087 | 2524 | 1256 |
| Area 2 | 124 | 814 | 1846 | 928 |
| Area 3 | 79 | 895 | 2379 | 1116 |
| All closed | 535 | 4859 | 12445 | 5946 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Harvest alternatives | States of Nature (SJ) | | | Expected P(adults < 1000) |
| SJ = 0.75  (prob = 1/3) | SJ = 0.8  (prob = 1/3) | SJ = 0.82  (prob = 1/3) |
| Area 1 | 1.000 | 0.242 | 0.000 | 0.414 |
| Area 2 | 1.000 | 0.756 | 0.085 | 0.614 |
| Area 3 | 1.000 | 0.643 | 0.131 | 0.592 |
| All closed | 1.000 | 0.000 | 0.000 | 0.333 |

With both performance metrics, it is best to close all three areas to hunting. If the manager is interested in keeping at least one area open to hunting, the best strategy is to harvest in area 1.

Part D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Harvest alternatives | States of Nature (SJ) | | | Expected value of harvest |
| SJ = 0.75  (prob = 1/3) | SJ = 0.8  (prob = 1/3) | SJ = 0.82  (prob = 1/3) |
| Area 1 | 3,535 | 10,545 | 18,672 | 10,917 |
| Area 2 | 6,238 | 20,225 | 35,772 | 20,745 |
| Area 3 | 9,736 | 36,618 | 70,451 | 38,935 |

To maximize the value of hunting over all 100 years, the managers should open area 3. Even under different states of nature, that area has on average the highest returns.

Part E

Since hunting in area 3 provides the highest value under each state of nature, the expected value of perfect information (EVPI) = 0.