## **Appendix 5.** Optimal claims.

**Table A5.1.** Optimal claims for each resource stock size under the assumption that each group member believes that the game will continue one more round with a high enough probability.

| Scenario A (logistic type of resource dynamics, no threshold) | | | | | Scenario B (resource dynamics with threshold) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Resource stock size (x) | Reg. rate | Optimal claim | # rounds until x = 34 = R | Harvest during R | Resource stock size (x) | Reg. rate | Optimal claim | # rounds until x = 34 = R | Harvest during R |
| 50 | 0 | 25 | 1 | 25 | 50 | 0 | 25 | 1 | 25 |
| 49 | 1 | 24 | 1 | 24 | 49 | 1 | 24 | 1 | 24 |
| 48 | 1 | 23 | 1 | 23 | 48 | 1 | 23 | 1 | 23 |
| 47 | 1 | 22 | 1 | 22 | 47 | 1 | 22 | 1 | 22 |
| 46 | 1 | 21 | 1 | 21 | 46 | 1 | 21 | 1 | 21 |
| 45 | 1 | 20 | 1 | 20 | 45 | 1 | 20 | 1 | 20 |
| 44 | 3 | 19 | 1 | 19 | 44 | 3 | 19 | 1 | 19 |
| 43 | 3 | 18 | 1 | 18 | 43 | 3 | 18 | 1 | 18 |
| 42 | 3 | 17 | 1 | 17 | 42 | 3 | 17 | 1 | 17 |
| 41 | 3 | 16 | 1 | 16 | 41 | 3 | 16 | 1 | 16 |
| 40 | 3 | 15 | 1 | 15 | 40 | 3 | 15 | 1 | 15 |
| 39 | 5 | 14 | 1 | 14 | 39 | 5 | 14 | 1 | 14 |
| 38 | 5 | 13 | 1 | 13 | 38 | 5 | 13 | 1 | 13 |
| 37 | 5 | 12 | 1 | 12 | 37 | 5 | 12 | 1 | 12 |
| 36 | 5 | 11 | 1 | 11 | 36 | 5 | 11 | 1 | 11 |
| 35 | 5 | 10 | 1 | 10 | 35 | 5 | 10 | 1 | 10 |
| 34 | 7 | 9 | 1 | 9 | 34 | 7 | 9 | 1 | 9 |
| 33 | 7 | 8 | 1 | 8 | 33 | 7 | 8 | 1 | 8 |
| 32 | 7 | 7 | 1 | 7 | 32 | 7 | 7 | 1 | 7 |
| 31 | 7 | 6 | 1 | 6 | 31 | 7 | 6 | 1 | 6 |
| 30 | 7 | 5 | 1 | 5 | 30 | 7 | 5 | 1 | 5 |
| 29 | 9 | 4 | 1 | 4 | 29 | 9 | 4 | 1 | 4 |
| 28 | 9 | 3 | 1 | 3 | 28 | 9 | 3 | 1 | 3 |
| 27 | 9 | 2 | 1 | 2 | 27 | 9 | 2 | 1 | 2 |
| 26 | 9 | 1 | 1 | 1 | 26 | 9 | 1 | 1 | 1 |
| 25 | 9 | 0 | 1 | 0 | 25 | 9 | 0 | 1 | 0 |
| 24 | 7 | 4 | 2 | 6 | 24 | 7 alt. 1 | 4 alt. 0 | 2 | 6 alt. 0 |
| 23 | 7 | 3 | 2 | 5 | 23 | 7 alt. 1 | 3 alt. 0 | 2 alt. 3 | 5 alt. 0 |
| 22 | 7 | 2 | 2 | 4 | 22 | 7 alt. 1 | 2 alt. 0 | 2 alt. 4 | 4 alt. 0 |
| 21 | 7 | 1 | 2 | 3 | 21 | 7 alt. 1 | 1 alt. 0 | 2 alt. 5 | 3 alt. 0 |
| 20 | 7 | 0 | 2 | 2 | 20 | 7 alt. 1 | 0 | 2 alt. 6 | 2 alt. 0 |
| 19 | 5 | 4 | 3 | 6 | 19 | 1 | 0 | 7 | 0 |
| 18 | 5 | 3 | 3 | 5 | 18 | 1 | 0 | 8 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17 | 5 | 2 | 3 | 4 | 17 | 1 | 0 | 9 | 0 |
| 16 | 5 | 1 | 3 | 3 | 16 | 1 | 0 | 10 | 0 |
| 15 | 5 | 0 | 3 | 2 | 15 | 1 | 0 | 11 | 0 |
| 14 | 3 | 2 | 4 | 4 | 14 | 2 | 0 | 11 | 0 |
| 13 | 3 | 1 | 4 | 3 | 13 | 2 | 1 | 12 | 1 |
| 12 | 3 | 0 | 4 | 2 | 12 | 2 | 0 | 12 | 0 |
| 11 | 3 | 1 | 5 | 3 | 11 | 2 | 1 | 13 | 1 |
| 10 | 3 | 0 | 5 | 3 | 10 | 2 | 0 | 13 | 0 |
| 9 | 1 | 0 | 6 | 3 | 9 | 1 | 0 | 14 | 0 |
| 8 | 1 | 0 | 7 | 3 | 8 | 1 | 0 | 15 | 0 |
| 7 | 1 | 0 | 8 | 3 | 7 | 1 | 0 | 16 | 0 |
| 6 | 1 | 0 | 9 | 3 | 6 | 1 | 0 | 17 | 0 |
| 5 | 1 | 0 | 10 | 3 | 5 | 1 | 0 | 18 | 0 |

Note that in scenario B, there is hysteresis between a resource stock size of 20 and 24 units. This implies that the regeneration rate depends on the most recent resource stock size. If the most recent stock size has been 20 units or below, the growth rate is one instead of seven and in this case, the optimal claim between 20 and 24 units should equal zero. Reg. stands for regeneration (second column). Optimal claim means sum of individual harvest decisions (third column). The fourth column (# rounds until x = 34 = R) indicates the number of consecutive rounds necessary to reach a resource stock of 34 units. The fifth column indicates the possible overall group harvest to reach a resource stock of 34 units.