**Table S1: Parameter settings and submodel notes for pilot implementation of GreenReserves**

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| **Parameter** | **Value** | **Description** | **Notes / Submodels** |
| numPatches | 6 | Length of each side of the landscape (in patches) |  |
| initialHerdSize | 10 | Number of animals in each player's herd, to start |  |
| numHH | 2 | Number of individuals in each player's household |  |
| numYears | 2 | Number of complete years in the game |  |
| numPhases | 8 | Number of phases in each year |  |
| phaseLengthDays | 4 | Number of 'days' in each phase |  |
| baseSquaresPerDay | 3 | Number of patches walkable by a player, without animals, in a 'day' |  |
| fracBaseSlowPerAnimal | 0 | Fraction that walking speed is reduced per additional animal in herd |  |
| harvest\_day | 60 | Amount of grass that can be harvested by a player in a 'day' |  |
| hasChoosingShared? | true | Whether players choose shared reserve as part of the game setup |  |
| hasChoosingPrivate? | true | Whether players choose private land as part of the game setup |  |
| hasForage? | true | Whether players may harvest grass as an action during pasturing turns |  |
| maxPrivateSquares | 1 | Maximum number of private land patches per player |  |
| pS\_base | 1 | Base likelihood of survival by an animal | Animal survival re-evaluated at end of each phase, with probability of survival:  p(S) = pS\_base - dP\_dHpA \* dHpA - dP\_dfNeeds \* dfNeeds  where dHpA is difference in humans per animal from base, and dfNeeds is fraction of food needs unmet |
| HpA\_base | 1 | Base number of humans per animal for which survival rates are defined |
| dP\_dHpA | 0.1 | Change in likelihood of survival per change in number of humans per animal |
| dP\_dfNeeds | 0.2 | Change in likelihood of survival per change in fraction of food needs met |
| grassR | 0.4 | Intrinsic growth rate | Grass growth governed by water-limited logistic growth:   dG/dt = r\*G / (1 + K) \* (E / E0)  (where E is the actual Rainfall for the 'day') |
| grassK | 200 | Patch grass capacity |
| grassE0 | 5 | Patch grass baseline evapotranspiration, in 'mm' |
| animalNeeds | 8 | Animal food needs per 'day' |  |
| grassUndergroundFraction | 0.1 | Fraction of grass biomass that is underground - and not accessible to animals |  |