The threshold of cohort establishment is based on leaf area of seedlings (not count or biomass), and is controlled by two input parameters:

* SeedlingLeafArea: leaf area (m2) occupied by a single seedling (current value = 0.20)
* MinCohortProp: proportion of cell area that must be occupied by seedlings to count as an established cohort (current value = 0.005)

Given the values we are using in the test simulations (cell size is 10x10=100m2), the number of seedlings required to establish a cohort is:

MinCohortProp\* CellArea /SeedlingLeafArea = 0.005\*100/0.20 = **2.5**

Relevant Code:

s: species  
x,y: cell location  
seedlings: number of seeds that emerged and survived to become seedlings

double seedlingCount = seedingData.seedlings[s][x][y];

double seedlingArea = seedingData.seedling\_leaf\_area;

double minSeedlingProp = seedingData.min\_cohort\_prop;

seedlingProportion = seedlingCount \* seedlingArea / (Model.Core.CellArea\*10000); //m2

if (seedlingProportion < minSeedlingProp)

{

established = false;

seedlingCount = 0;

seedingData.seedlings[s][x][y] = 0;

seedingData.cohorts[s][x][y][0] = 0;

}

else

established = true;