

Example calculation of the SMSM

Original seed donor distribution

		1000		

Assume the permeability to equal between all grid cells and the probability of seeds to move from c

1. part of step 1 for all cells calculate the seed influx from the cell in northern direction

As there is currently only on cell containing 1000 seeds the cell in southern direction has an influx c

Seed influx of step 1.1

		10		

2. part of step 1 for all cells calculate the seed influx from the cell in north-eastern direction

As there is currently only on cell containing 1000 seeds the cell in south western direction has an ir

The fact that the cell is farther away from the donor is (linearly) taking into account by dividing by th

Seed influx of step 1.2

	7.1	10		

continue the part steps until all directions have been dealt with

Seed influx of step 1.8

	7.1	10	7.1	
	10		10	
	7.1	10	7.1	

Last part of step one, subtract the transported seeds from the donor cell

1.9 total seeds of step one

	7.1	10	7.1	
	10	9317	10	
	7.1	10	7.1	

Continue the part steps for step 2 until all directions have been dealt with

2.9 total seeds of step two

0.05	0.1414	0.2	0.1414	0.05
0.1414	13.377	18.917	13.377	0.1414
0.2	18.917	868.69	18.917	0.2
0.1414	13.377	18.917	13.377	0.1414
0.05	0.1414	0.2	0.1414	0.05

Continue the part steps for step 3 until all directions have been dealt with

3.9 total seeds of step three

0.0004	0.0015	0.0032	0.004	0.0032	0.0015	0.0004
0.0015	0.144	0.4028	0.5675	0.4028	0.144	0.0015
0.0032	0.4028	18.99	26.851	18.99	0.4028	0.0032
0.004	0.5675	26.851	810.51	26.851	0.5675	0.004
0.0032	0.4028	18.99	26.851	18.99	0.4028	0.0032
0.0015	0.144	0.4028	0.5675	0.4028	0.144	0.0015
0.0004	0.0015	0.0032	0.004	0.0032	0.0015	0.0004

This procedure needs to be replaced 10 times hence the maximum distance that seeds can travel i

one cell to another for each step to be 0.01

of 10 seeds

flux of $1000 \cdot 0.01 \cdot \sqrt{2}$ seeds.
ie square root of 2

in this case is 10 cells.