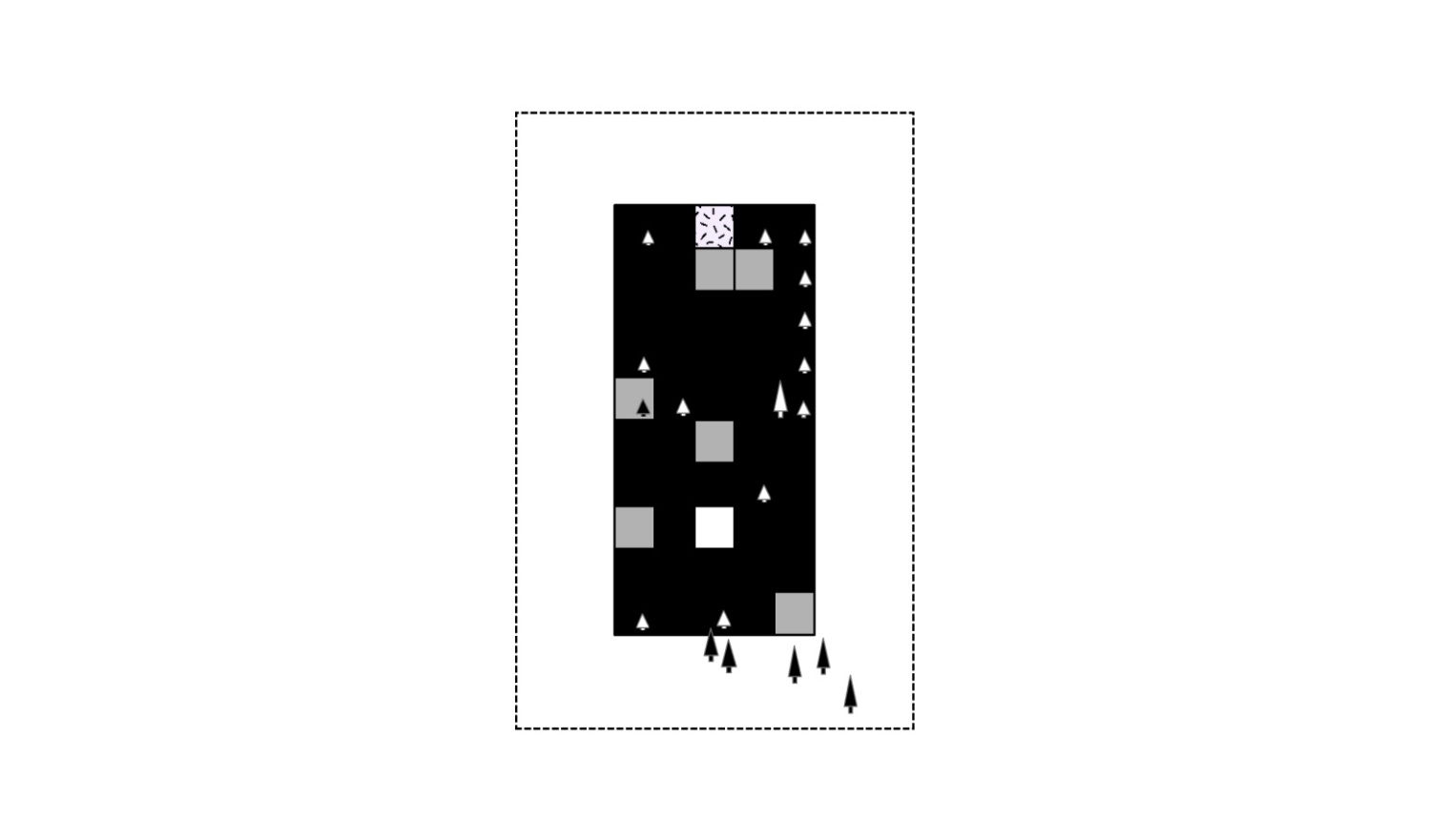
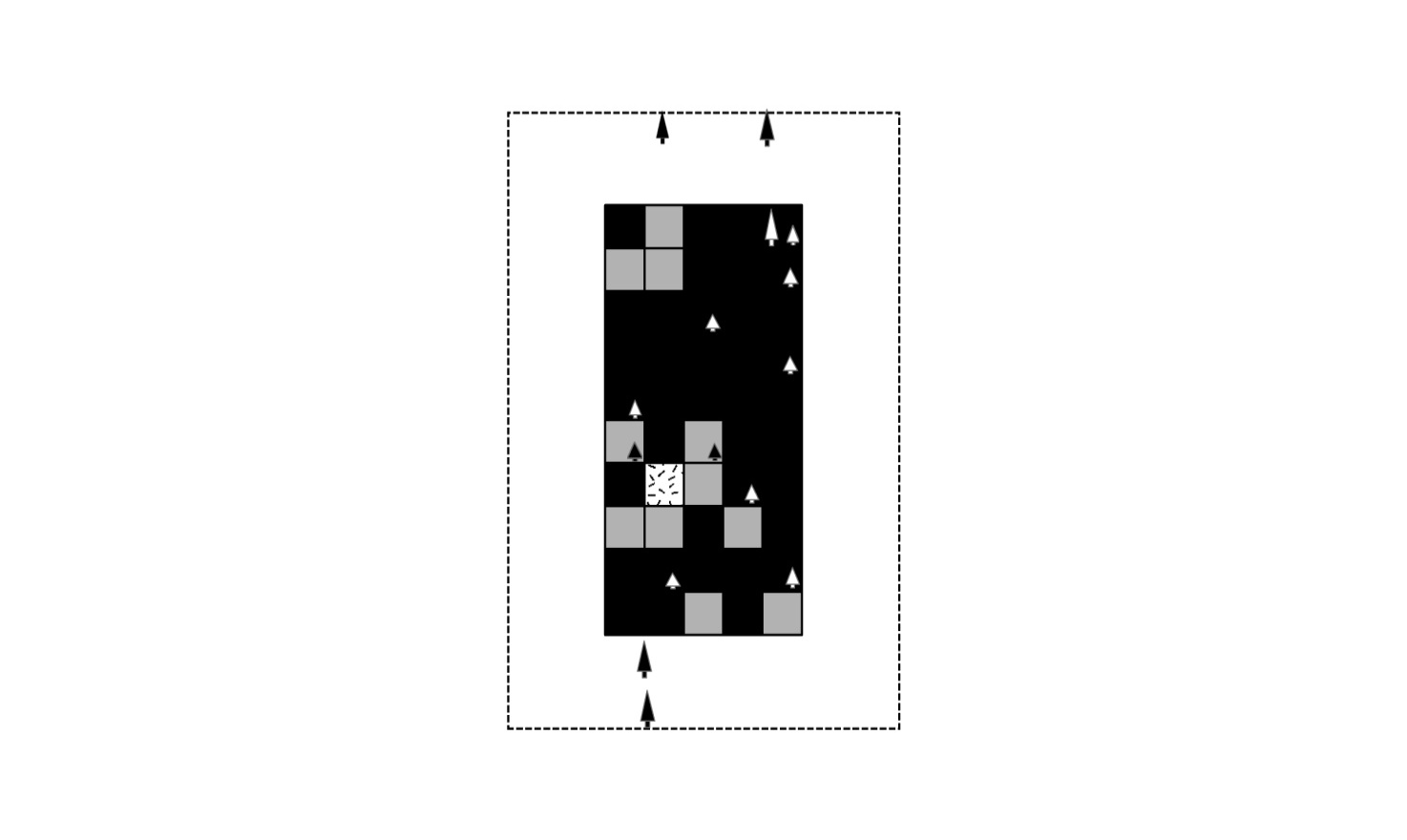
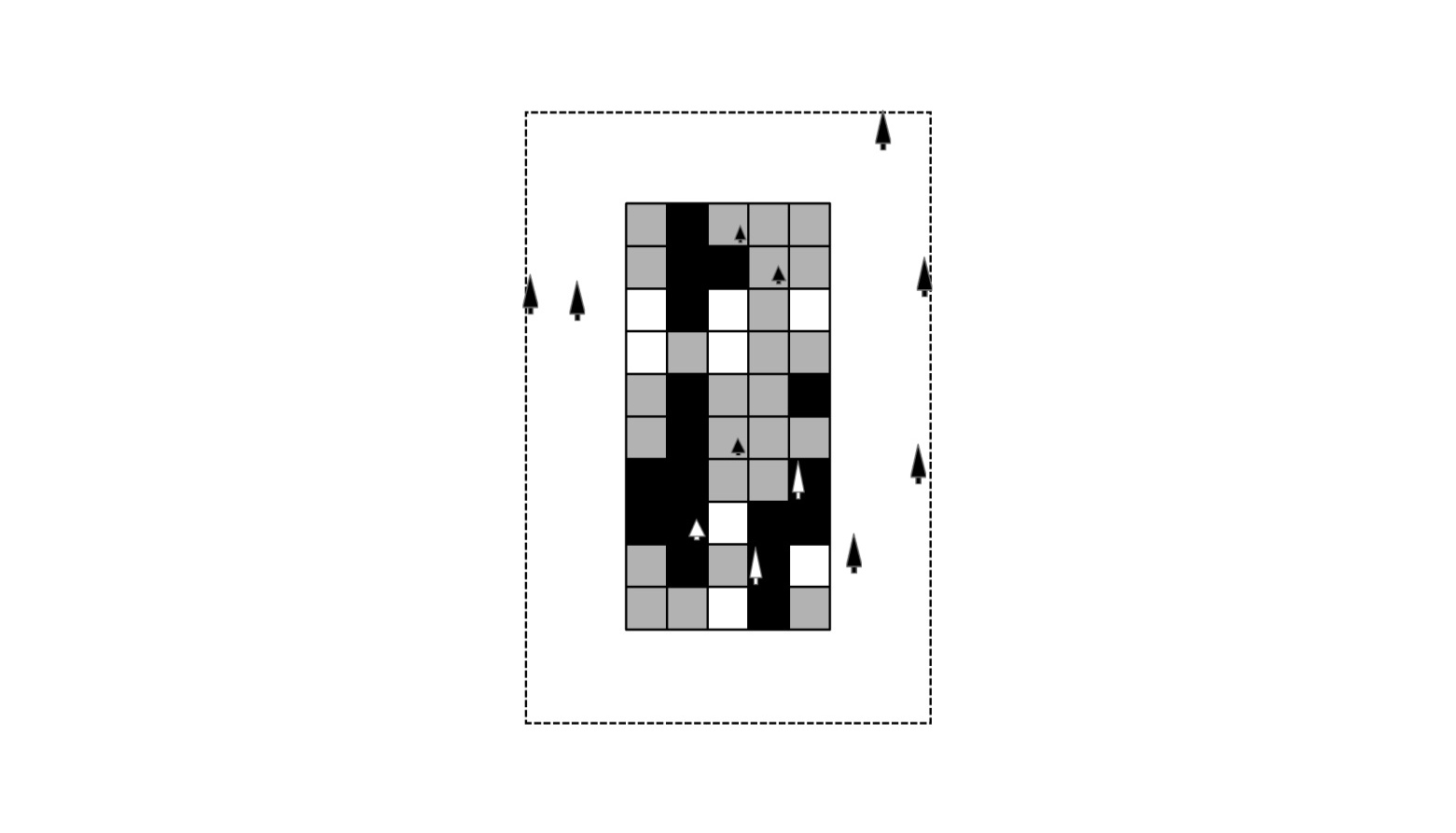
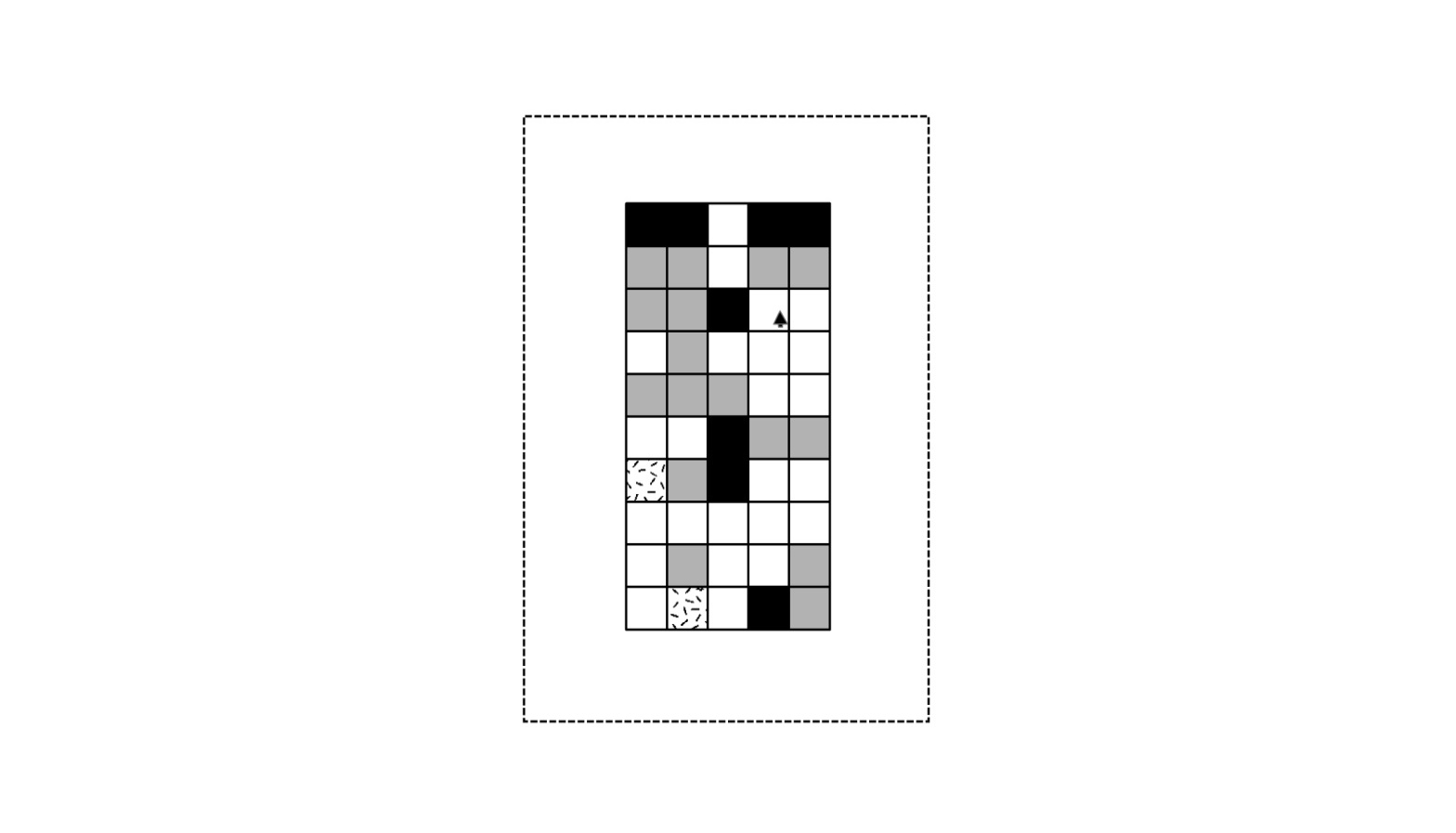
Supplementary material Fig. S1 A-B

**A**

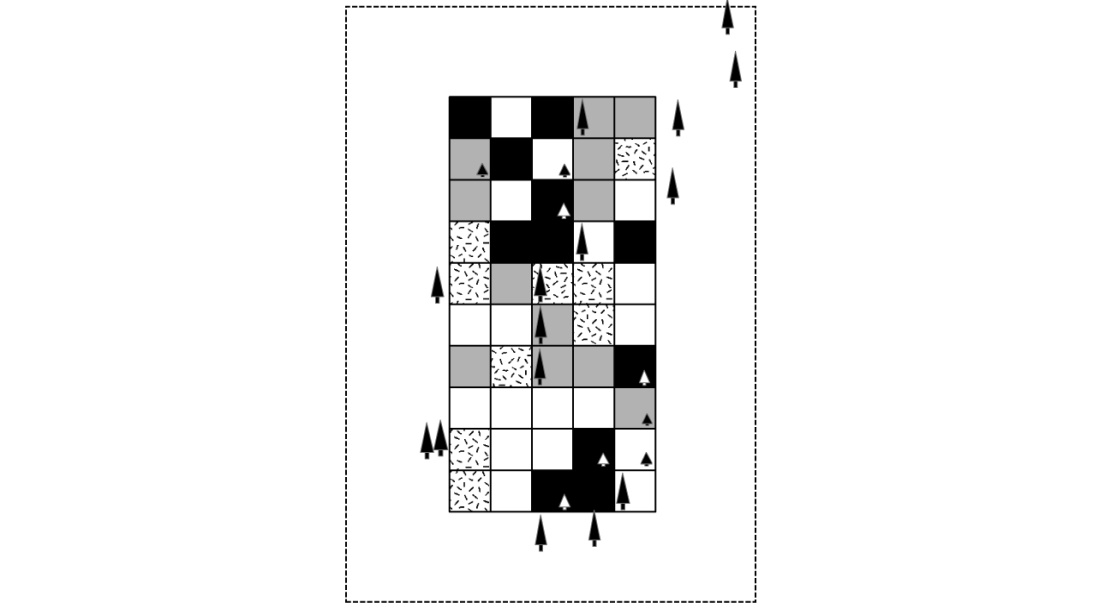
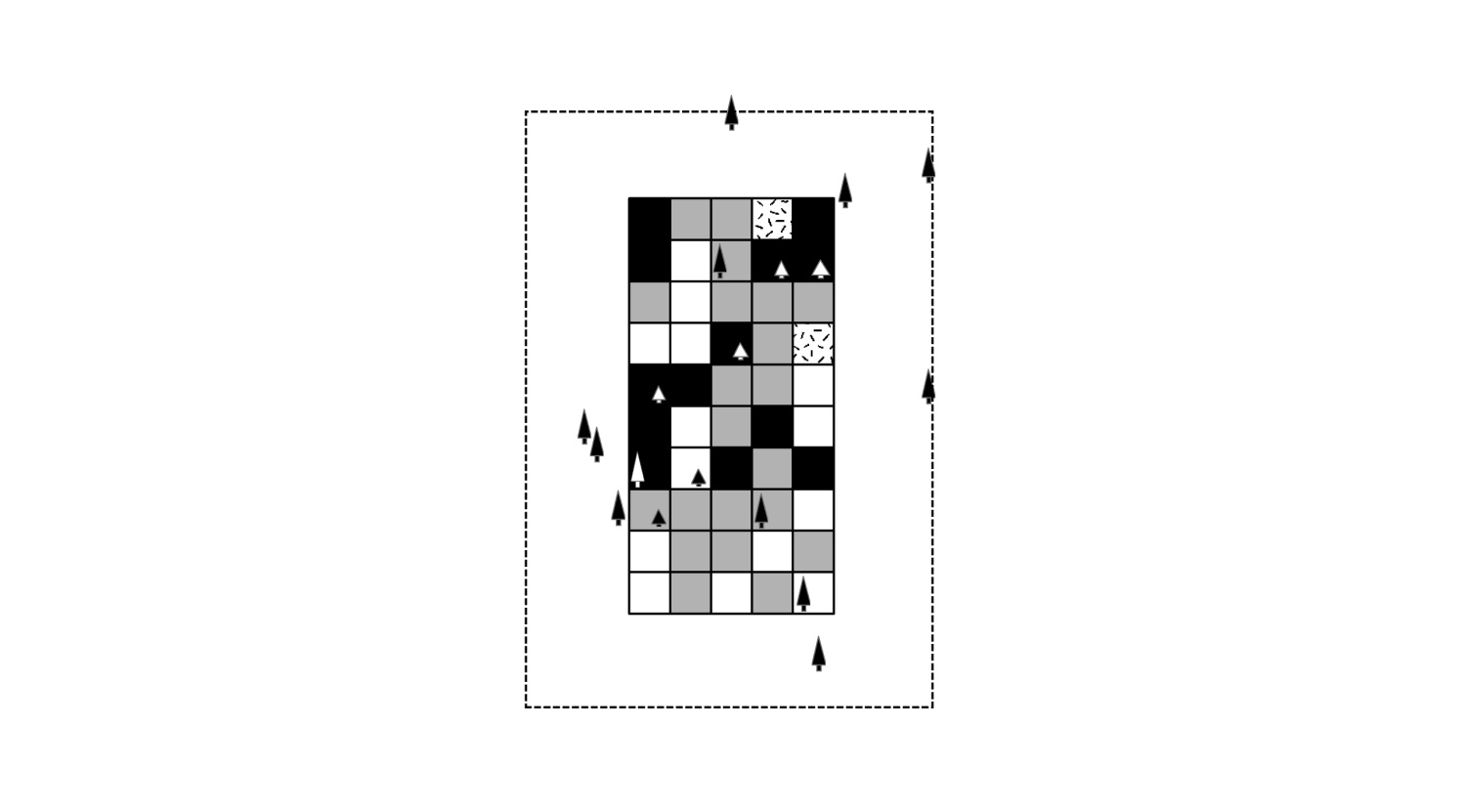
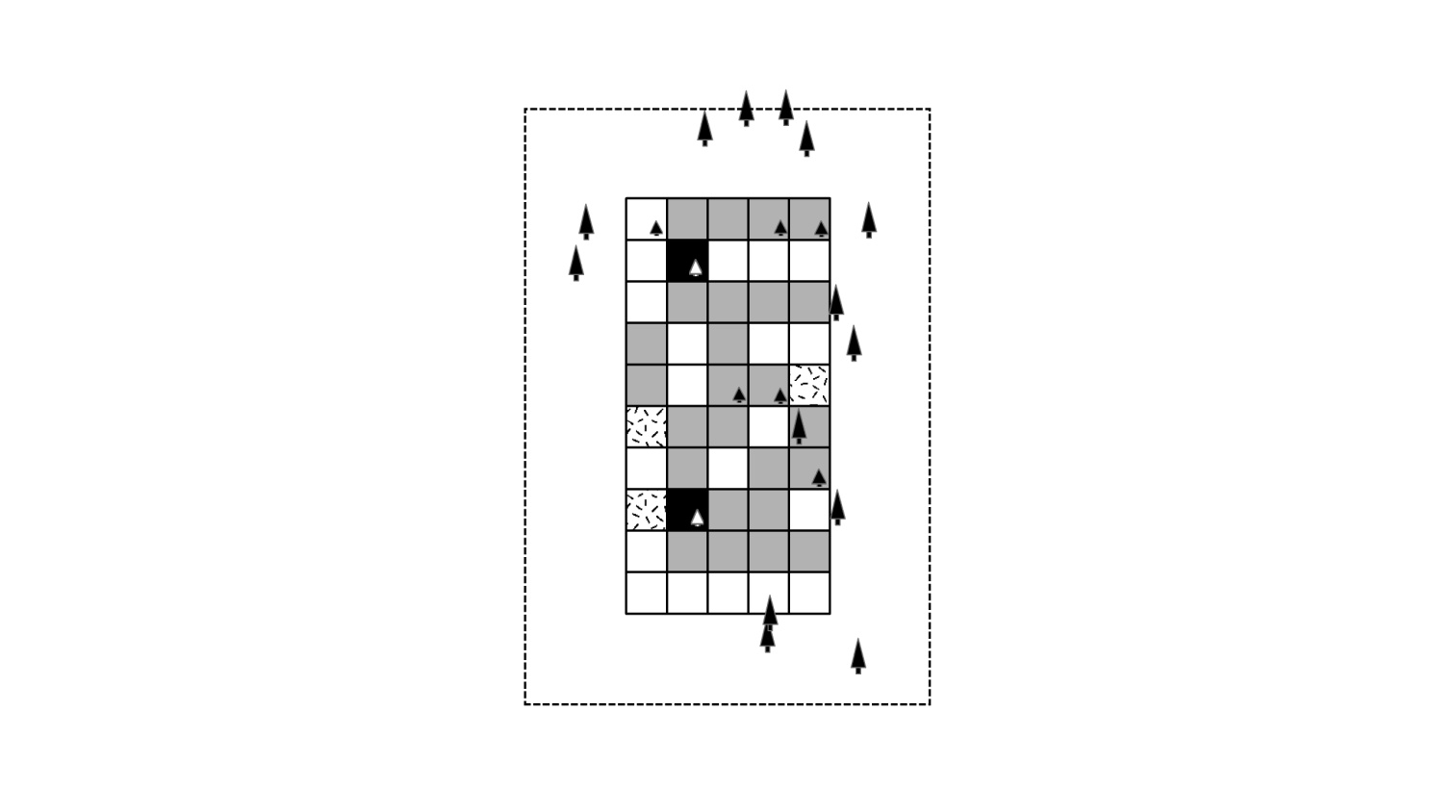
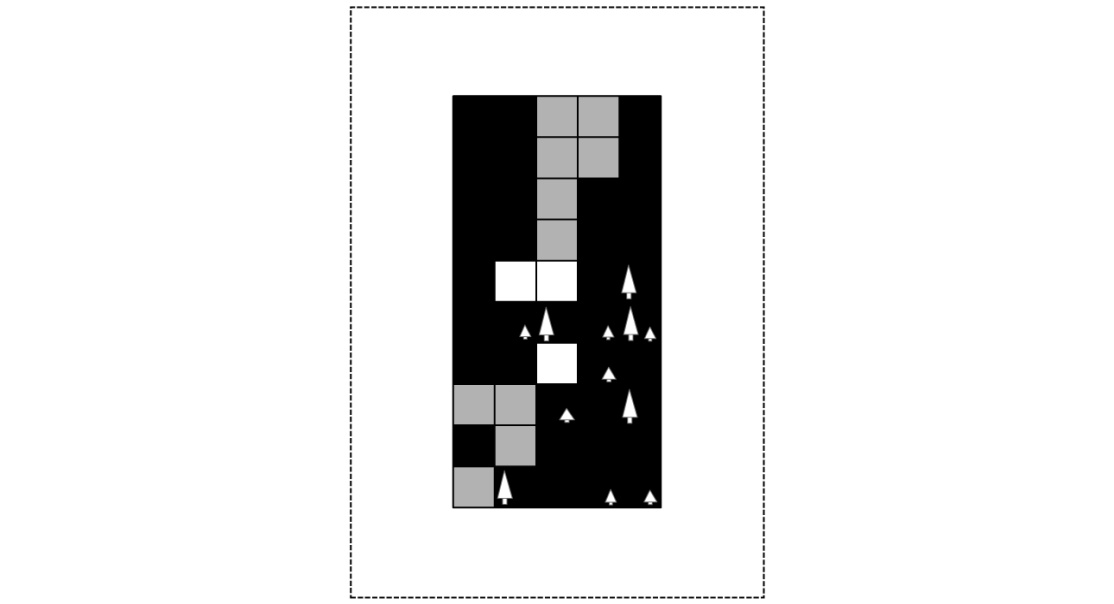


Site 3(a) 51-71 years old

Site 2(b) 52-65 years old

Site 2(a) 52-65 years old

Site 1 37-40 years old

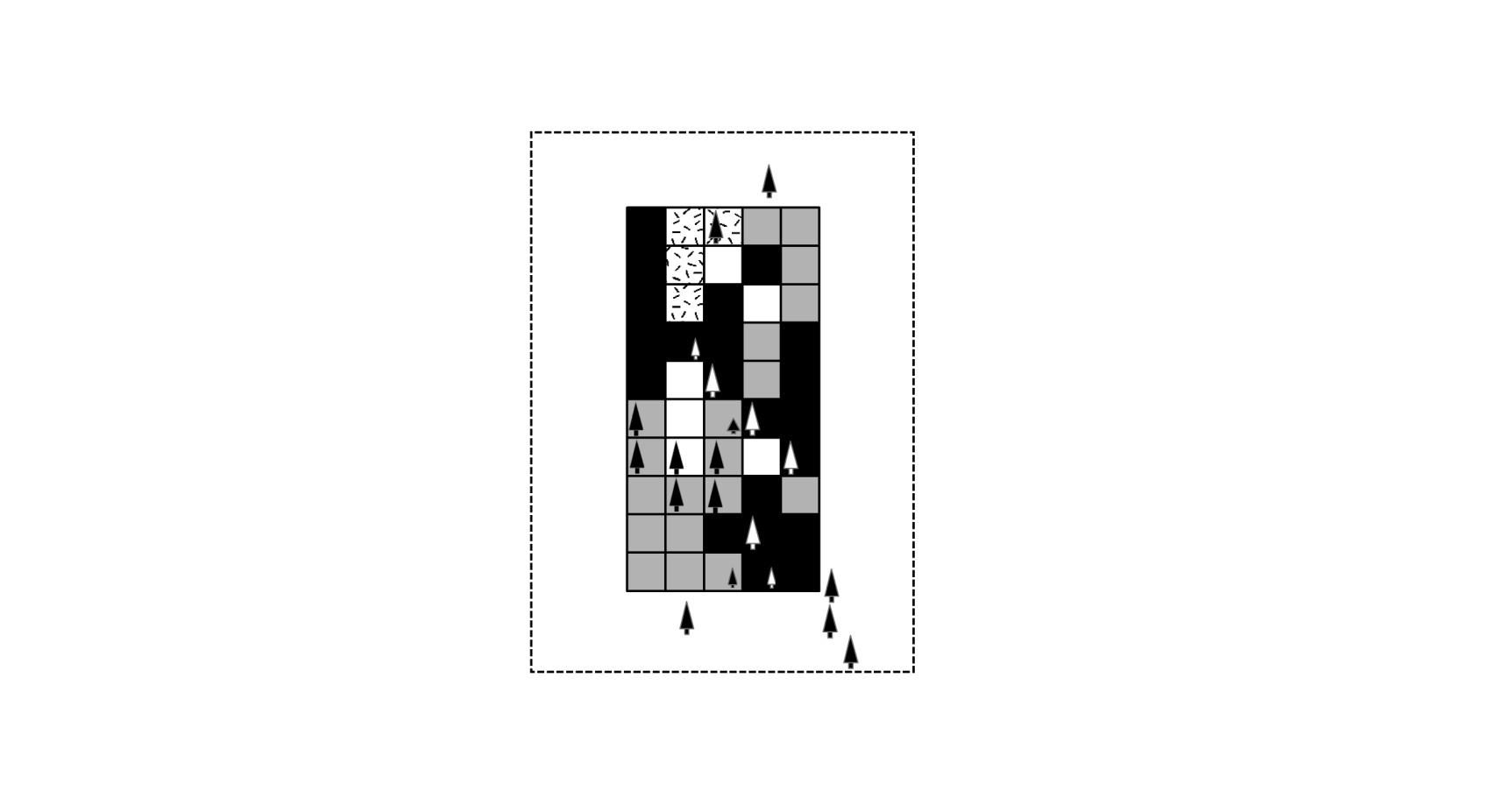
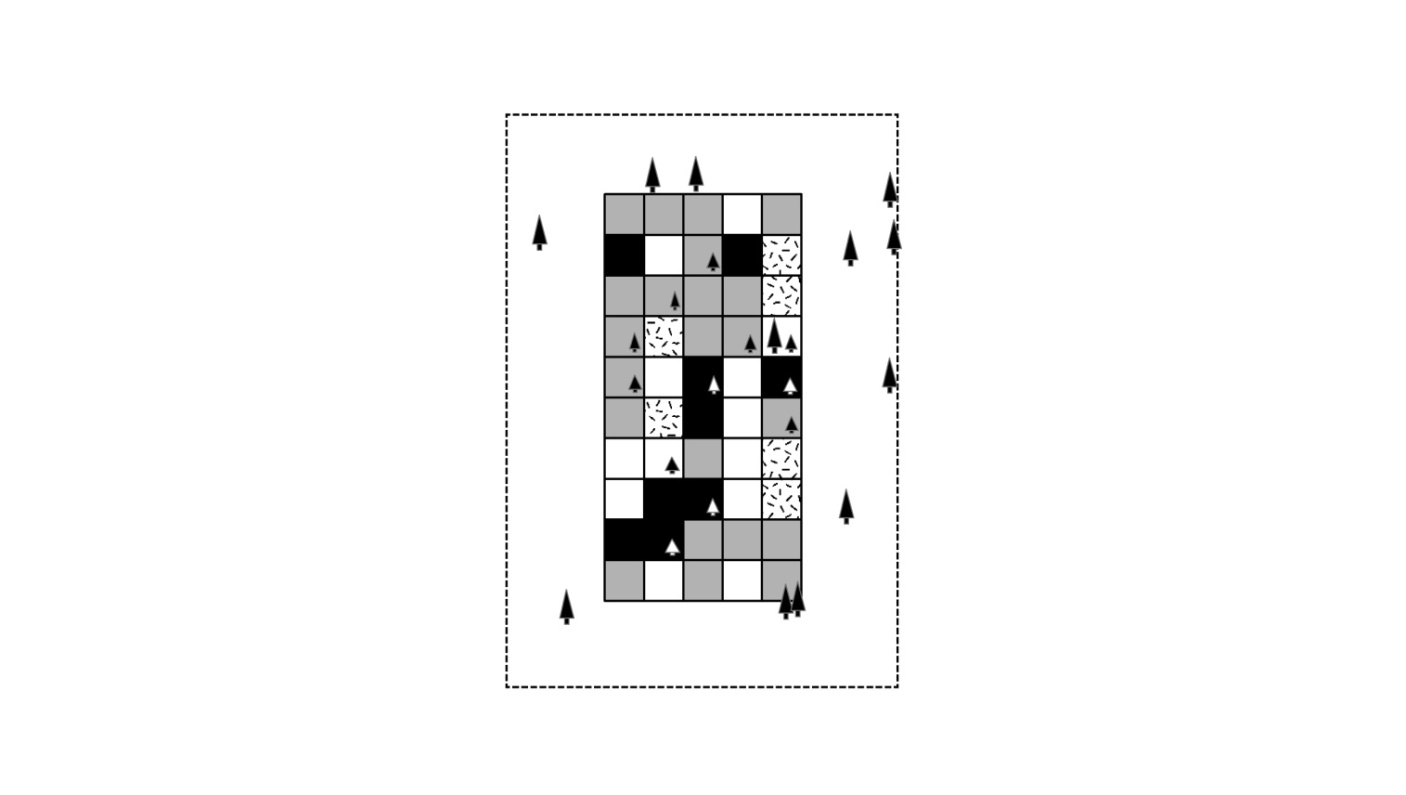
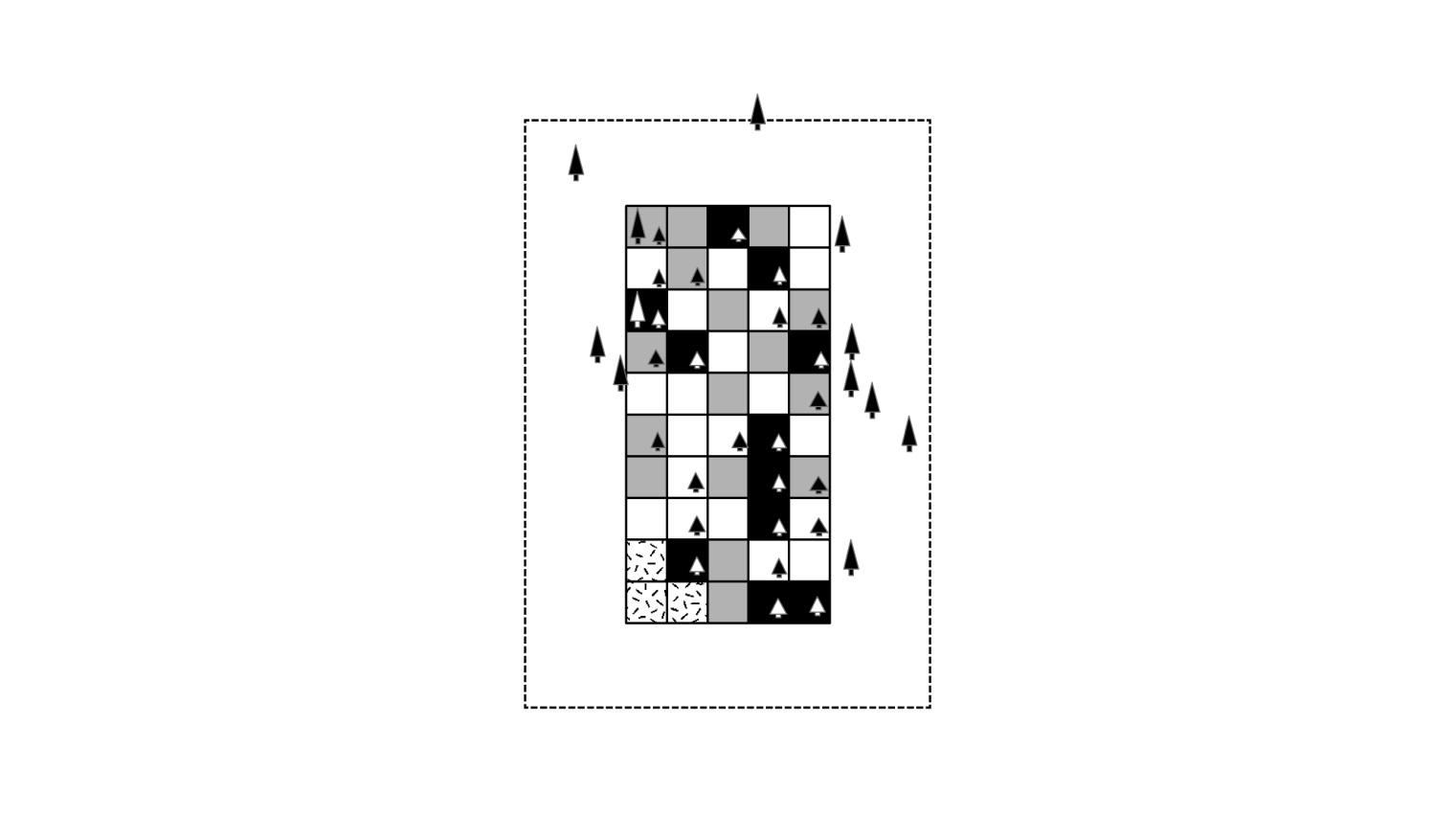
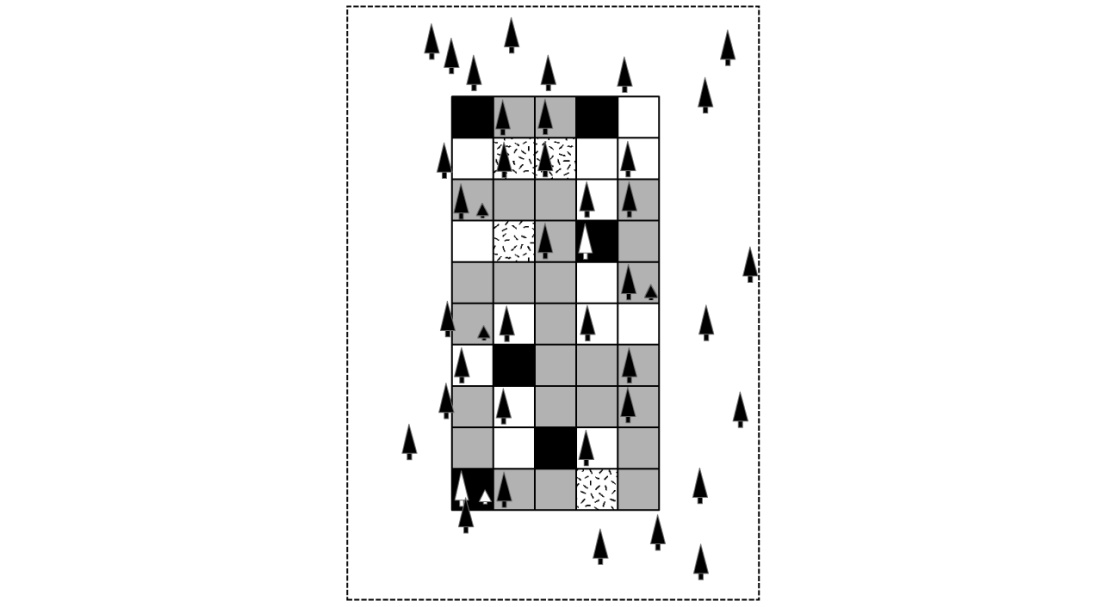


Site 5(a) 37-52 years old

Site 4(b) 46-52 years old

Site 4(a) 46-52 years old

Site 3(b) 51-71 years old

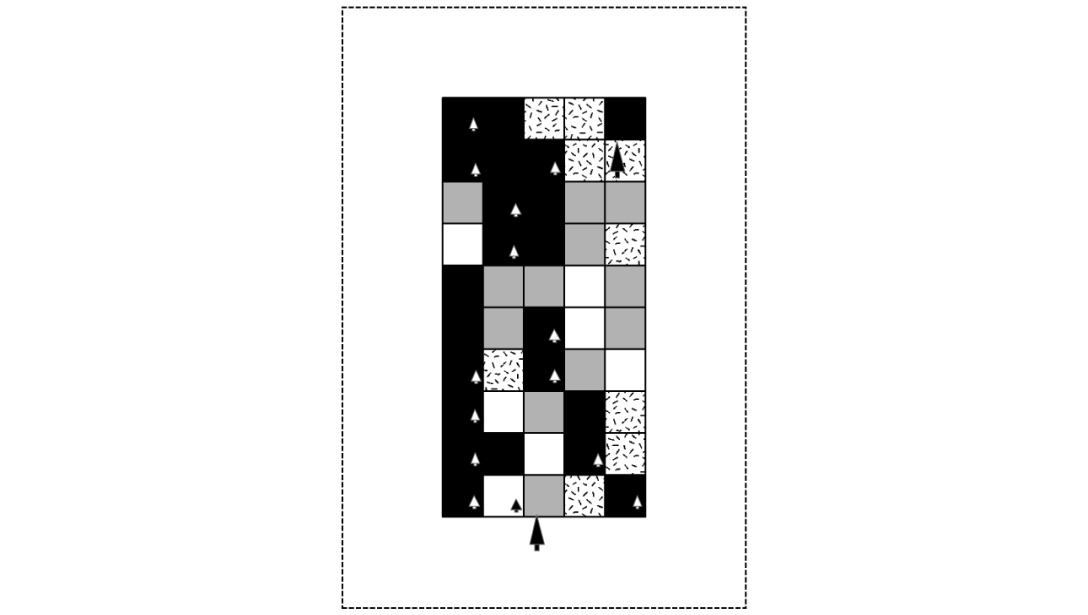
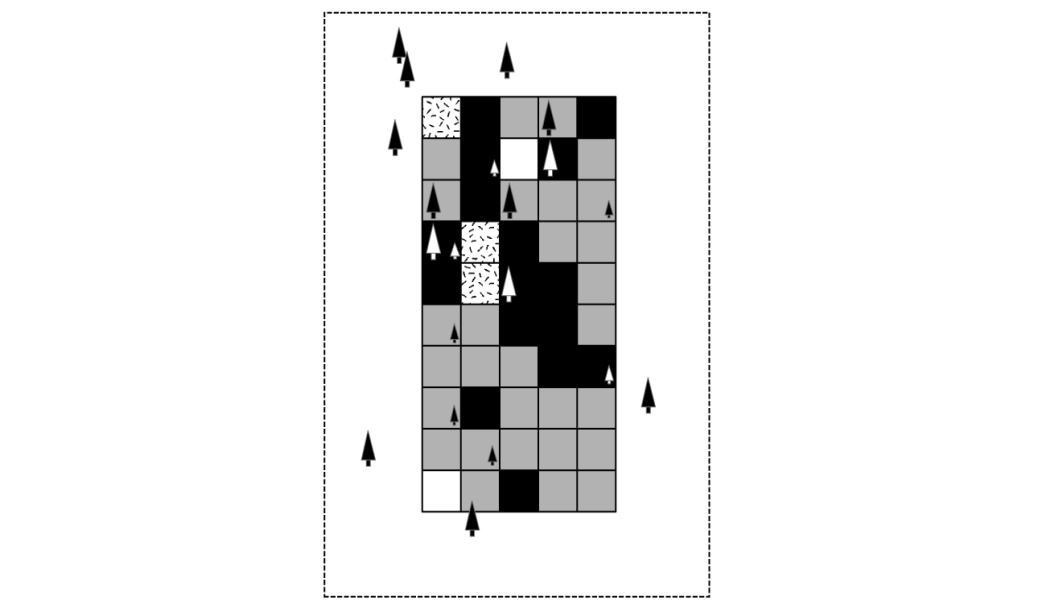
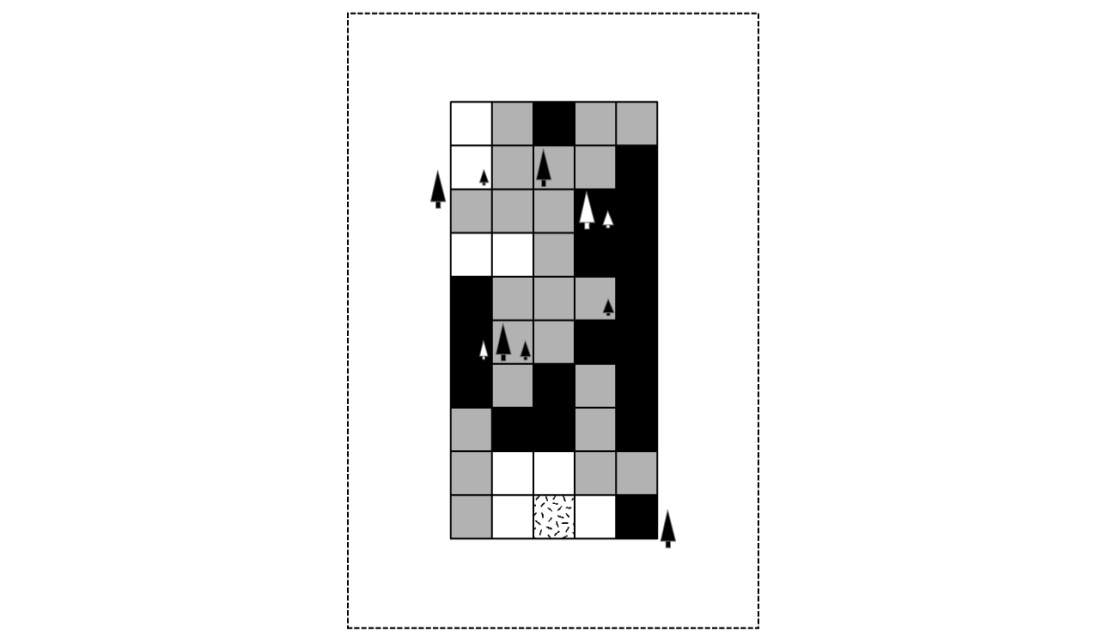
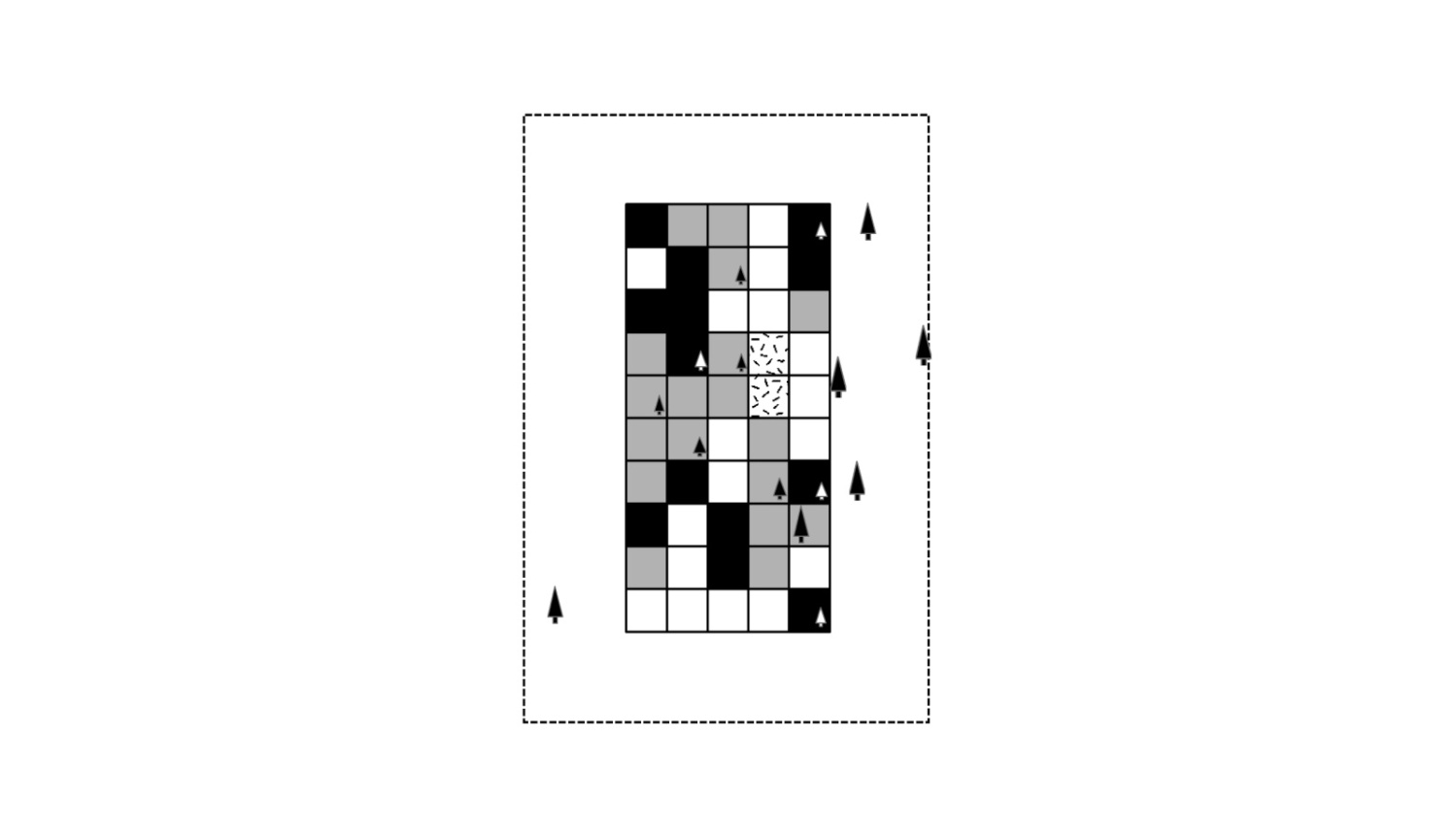


Site 6(b) 48-60 years old

Site 6(a) 48-60 years old

Site 5(b) 37-52 years old

Site 7(a) 55-74 years old

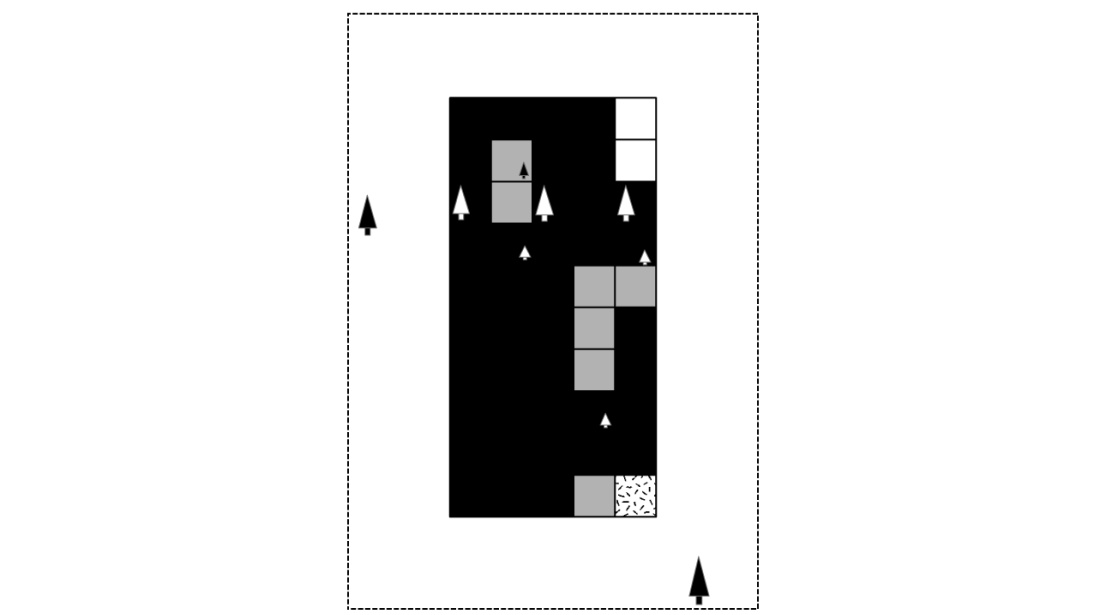
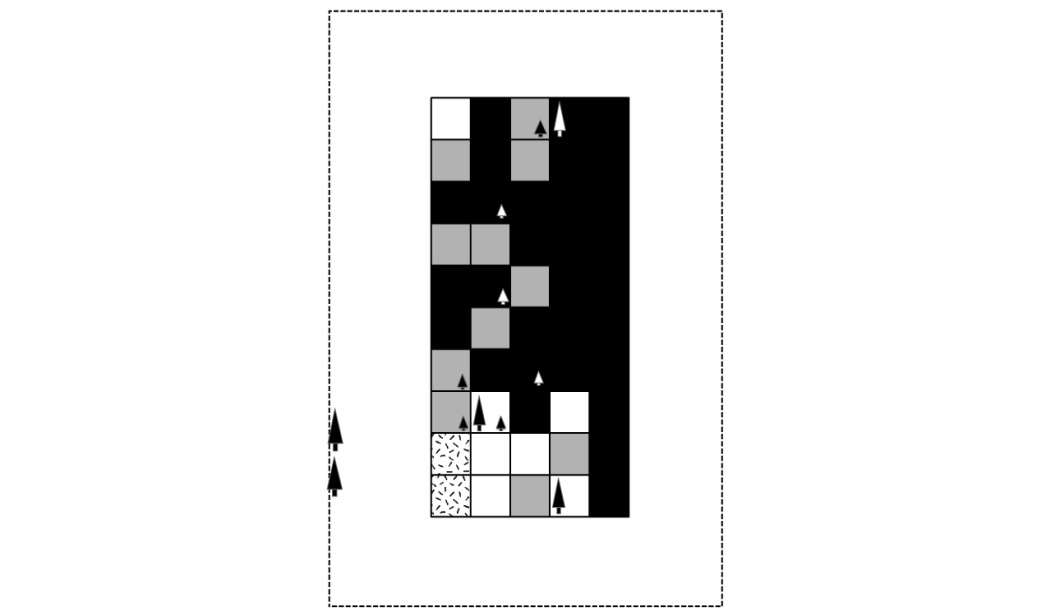
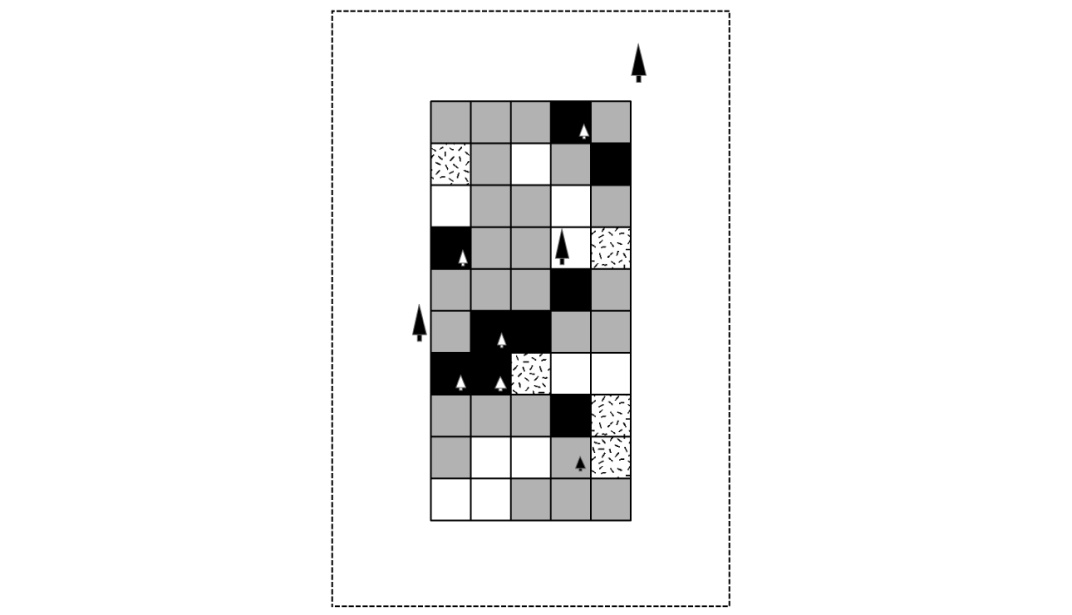
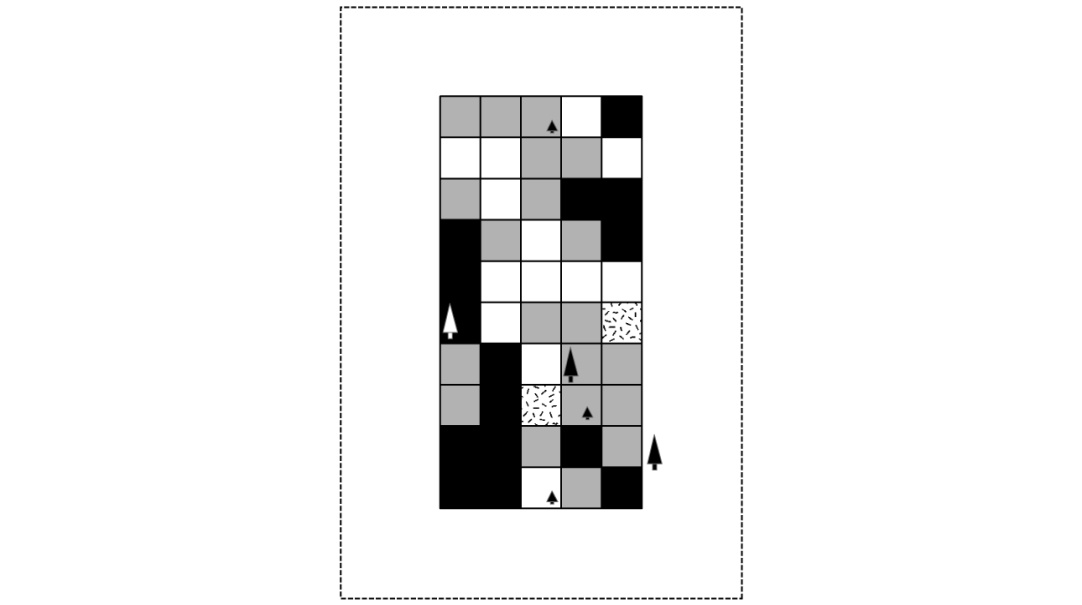


Site 7(b) 55-74 years old

Site 9(b) 60-85 years old

Site 9(a) 60-85 years old

Site 8 62-71 years old

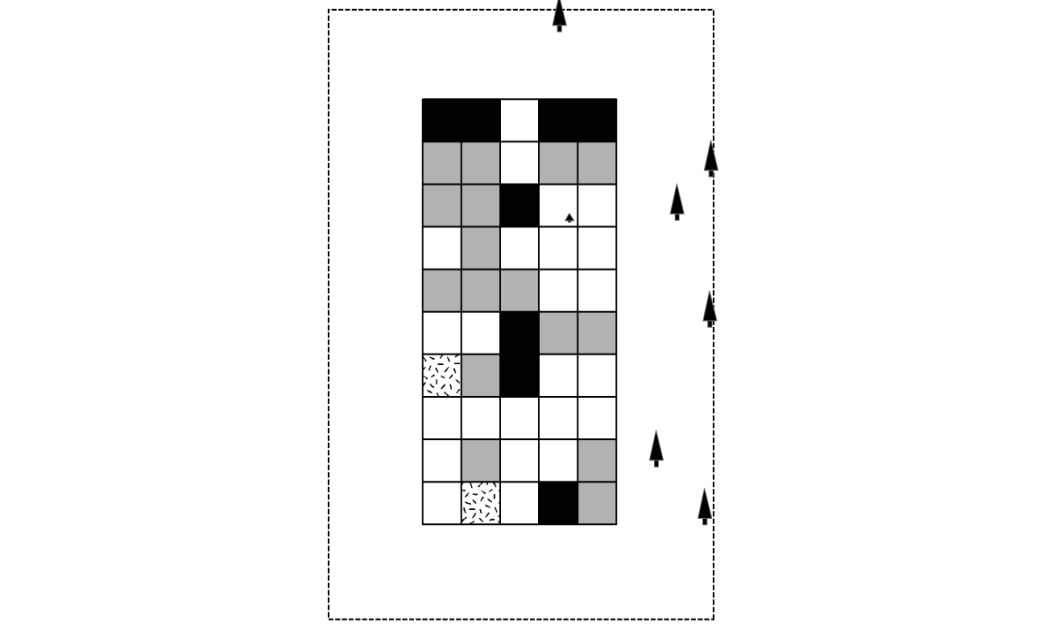
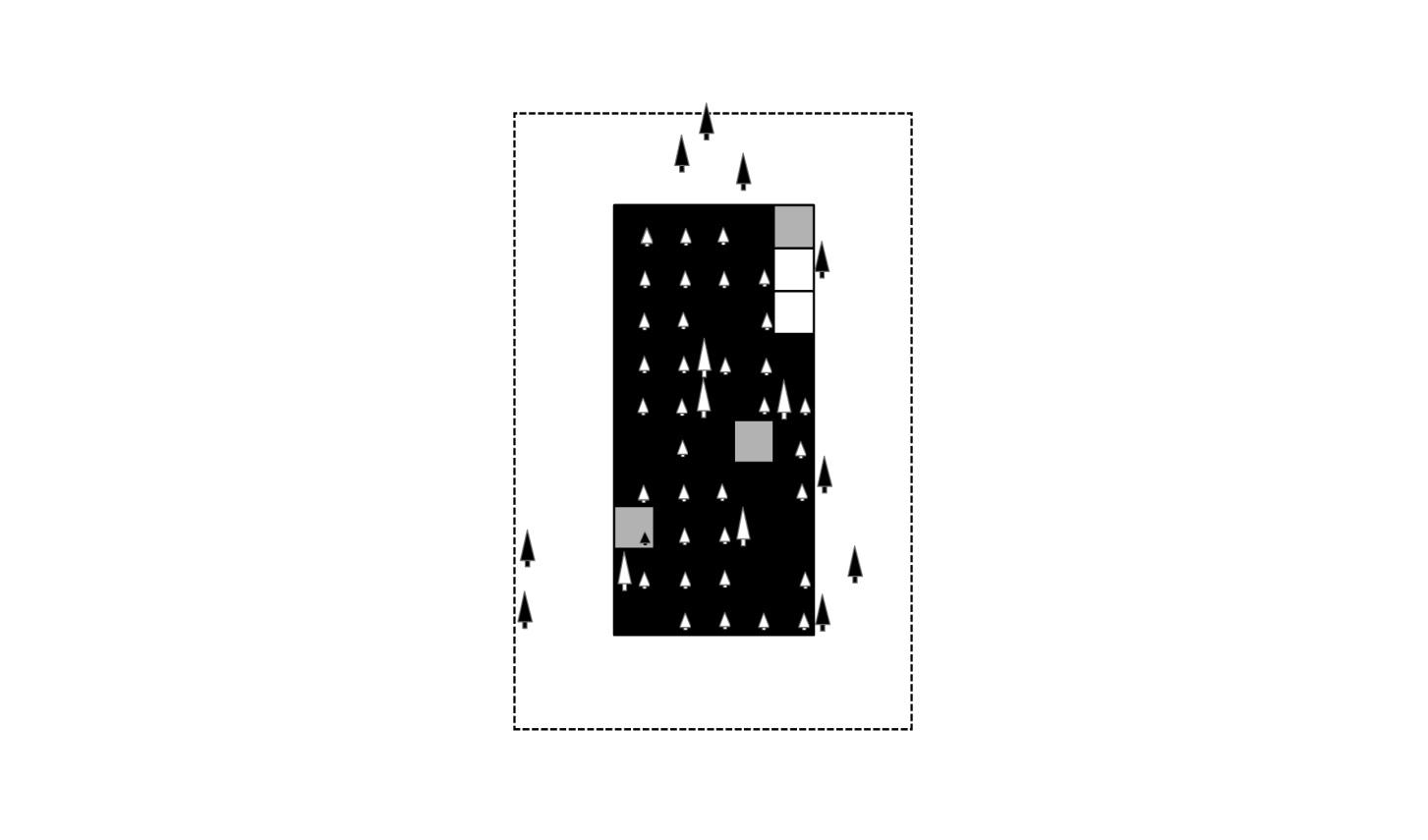


Site 11(a) 73-104 years old

Site 11(b) 73-104 years old

Site 10(b) 60-77 years old

Site 10(a) 60-77 years old



Symbol legend:

  : presence of one or more seed trees (white spruce)

 : presence of spruce regeneration, seedlings ≤ 150 cm in height

: limit of 5 m buffer zone around the SU perimeter

Seedbed substrate legend:

Absence of rotten wood

Presence of rotten wood with 5 to 9% cover

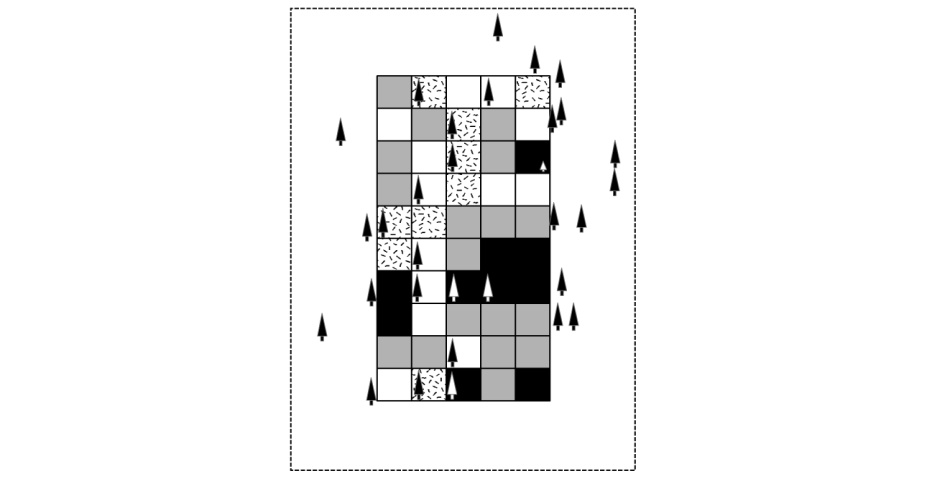
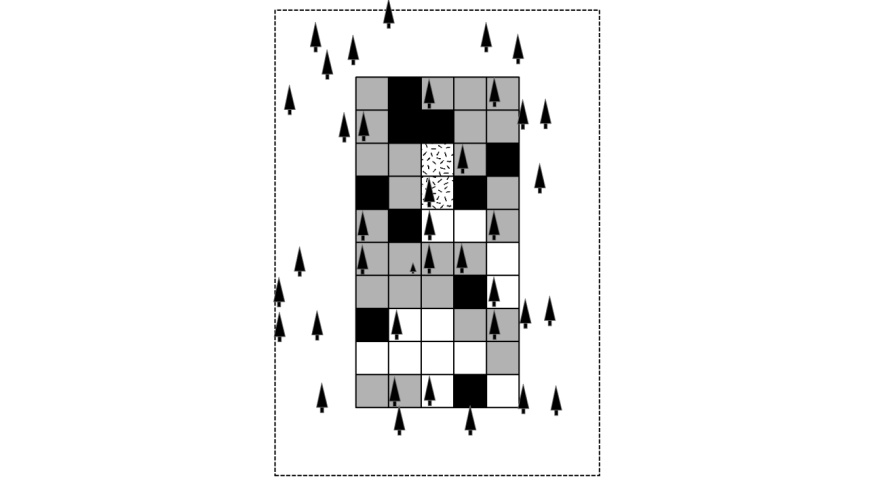
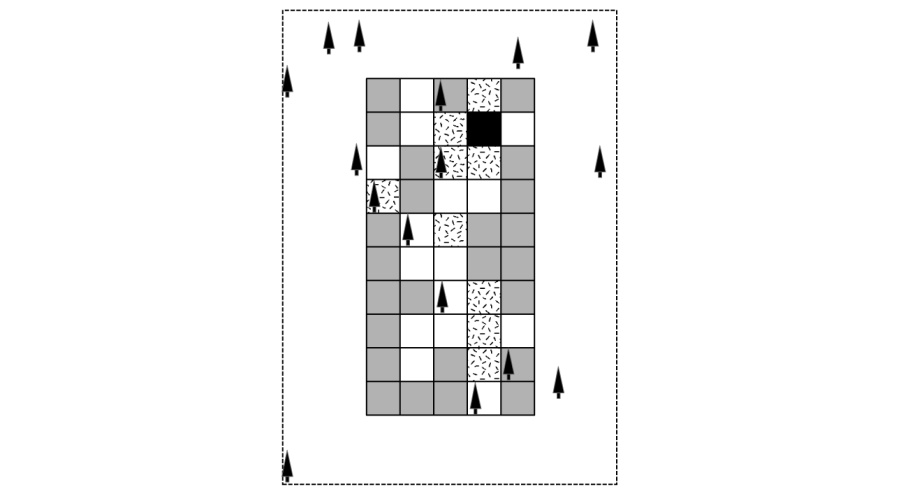
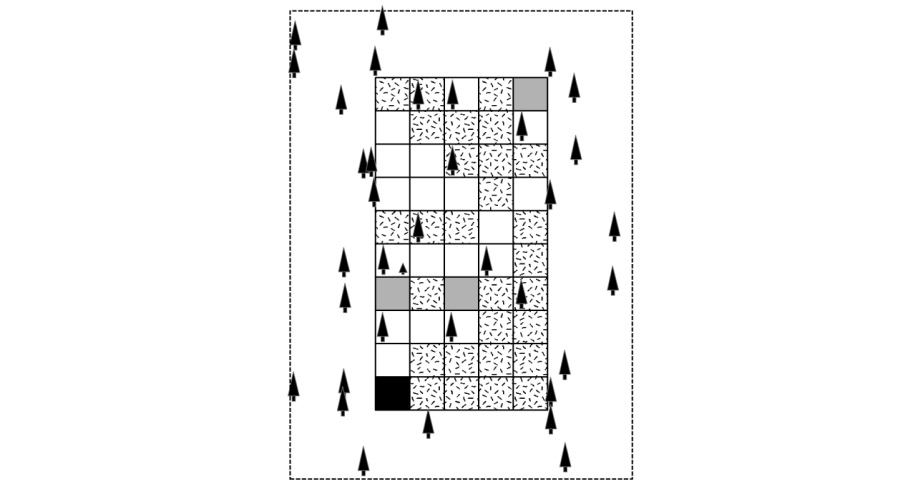
Presence of rotten wood with 10 to 14% cover

Presence of rotten wood with ≥ 15% cover

Site 12(b) 70-75 years old

Site 12(a) 70-75 years old

**B**

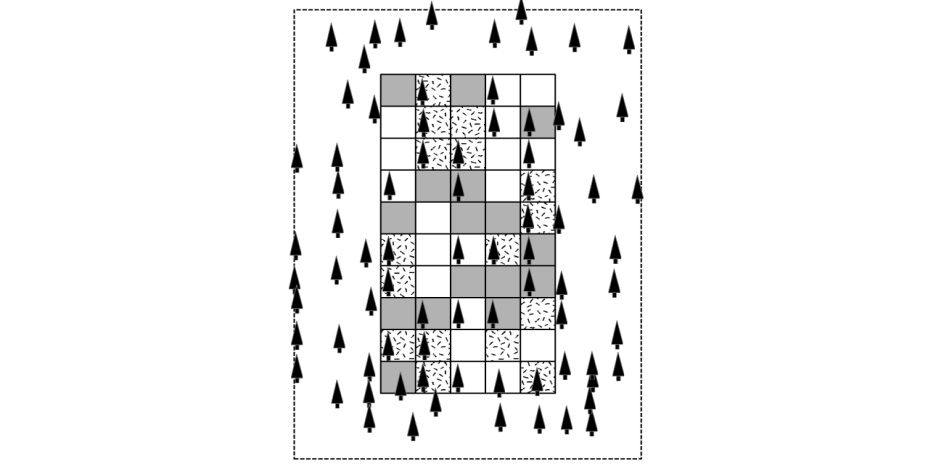
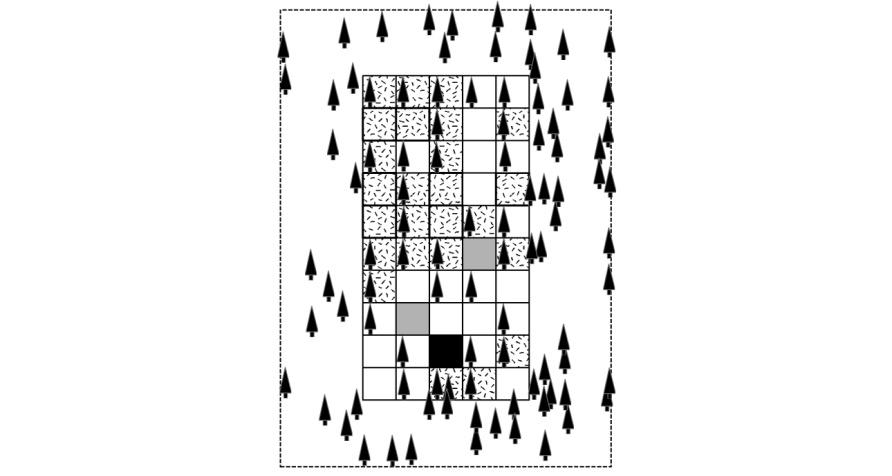
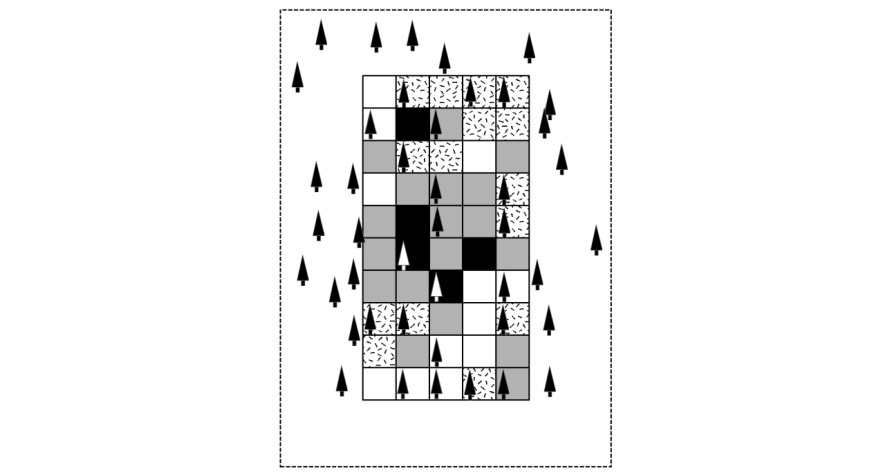
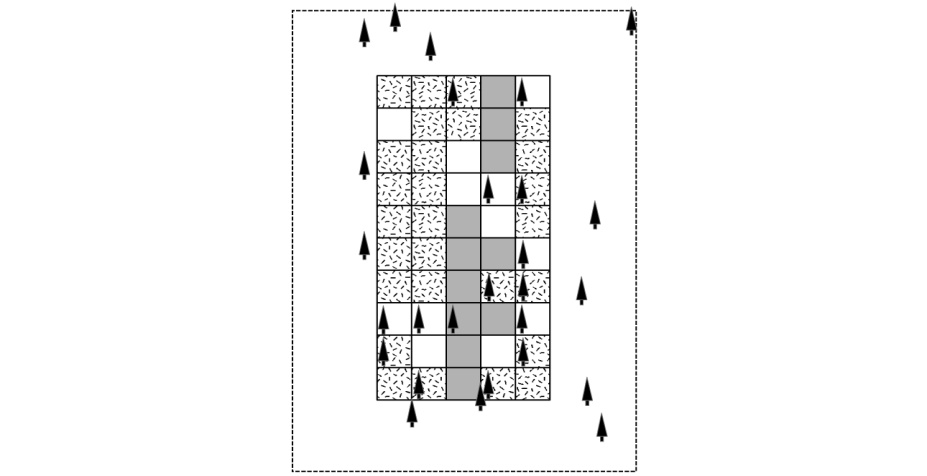


Site 13(d) 82 years old

Site 13(c) 82 years old

Site 13(b) 82 years old

Site 13(a) 82 years old

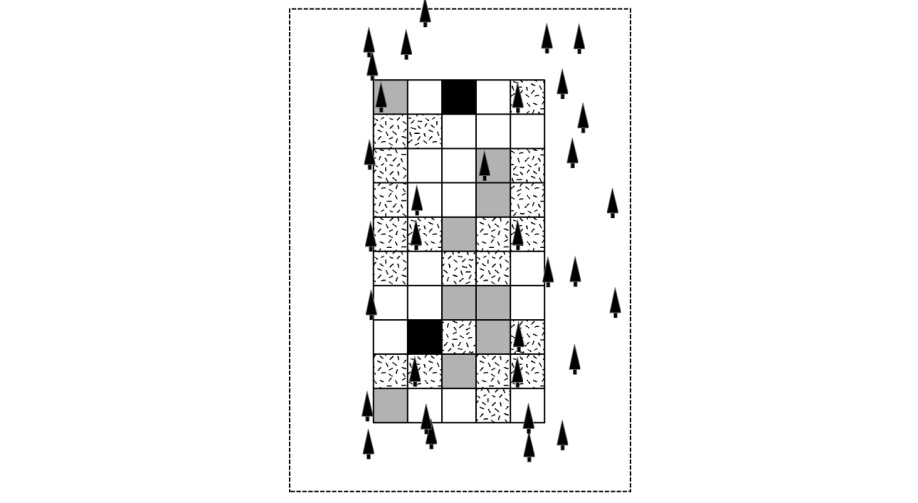
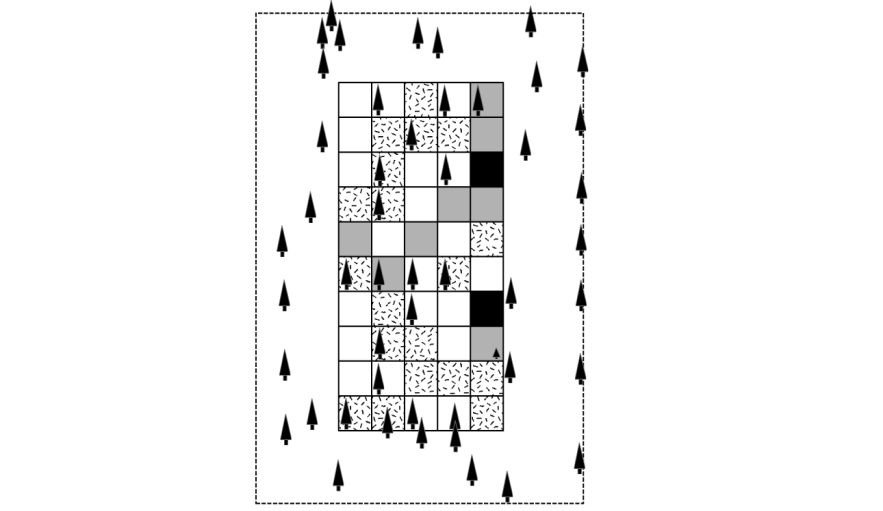
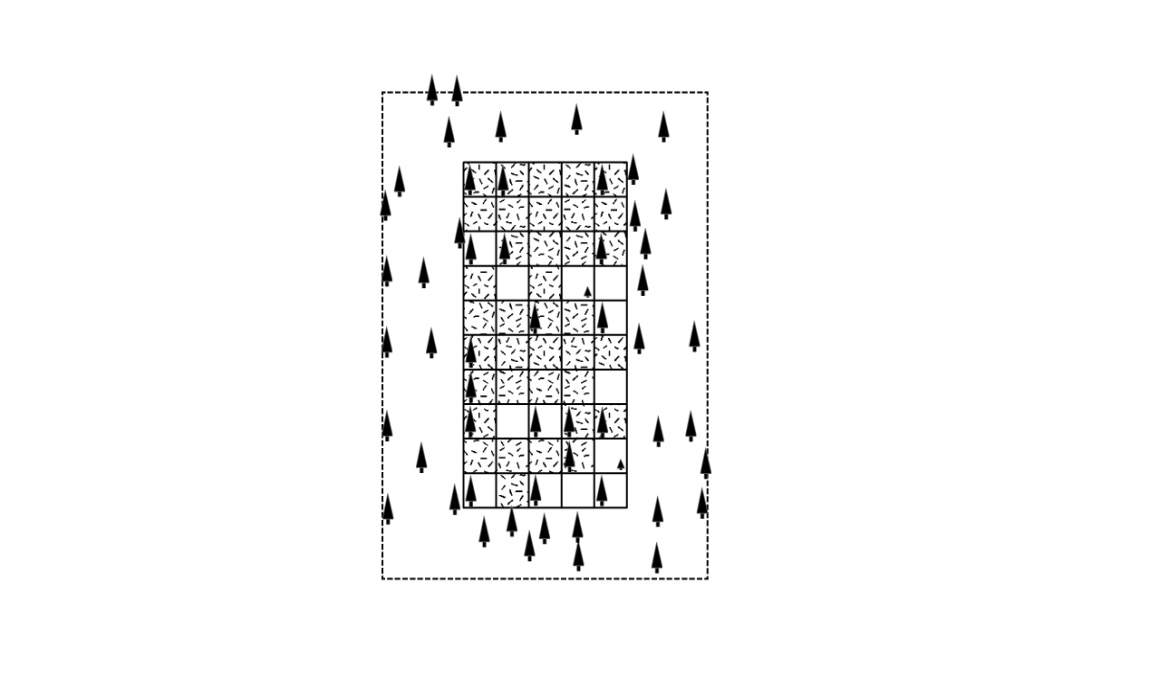
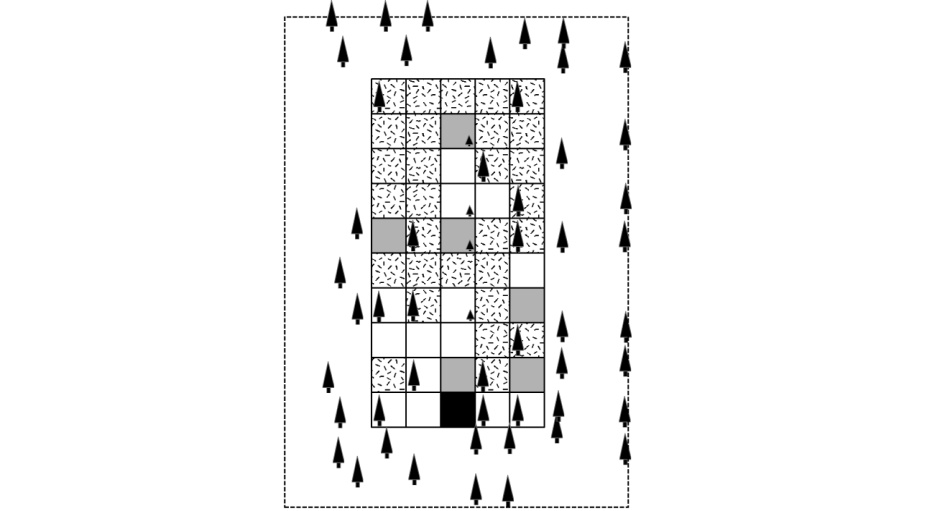


Site 15(b) 49 years old

Site 15(a) 49 years old

Site 14(b) 57 years old

Site 14(a) 57 years old



Site 17(b) 57 years old

Site 17(a) 57 years old

Site 16(b) 52 years old

Site 16(a) 52 years old

Figure S1. Illustration of the spatial distribution of seed trees, of regeneration and of the rotten wood seedbed substrate in the 200 m2 sampling units, and spatial distribution of white spruce seed trees in the buffer zone of (A) naturals stands and (B) plantations.

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**Authors contributions**: L.G., L.S. and L.L. conceived and designed the experiment; L.G. analyses the data, L.S. and L.L. contributed materials tools, L.G. wrote the paper.

**Conflicts of interest**: The authors declare no conflict of interest.

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