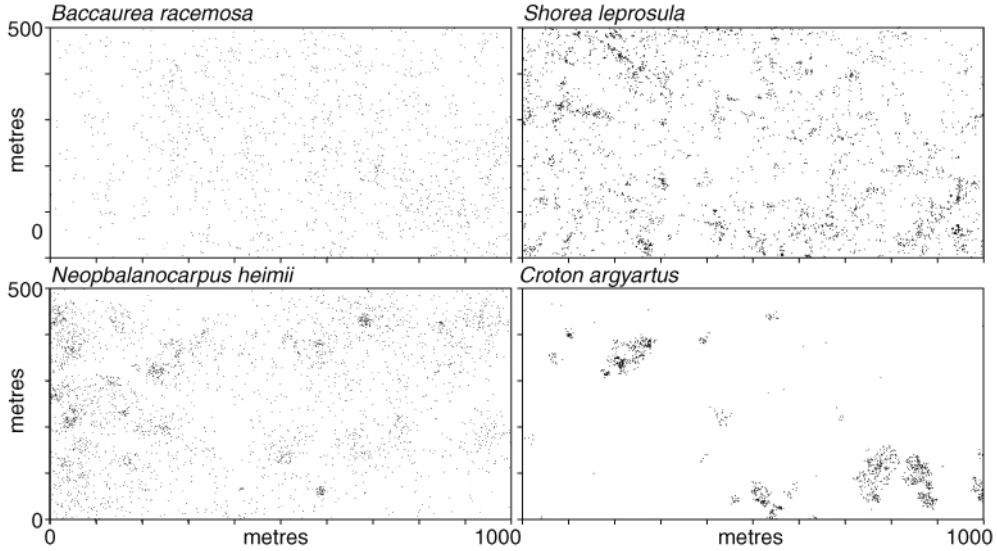
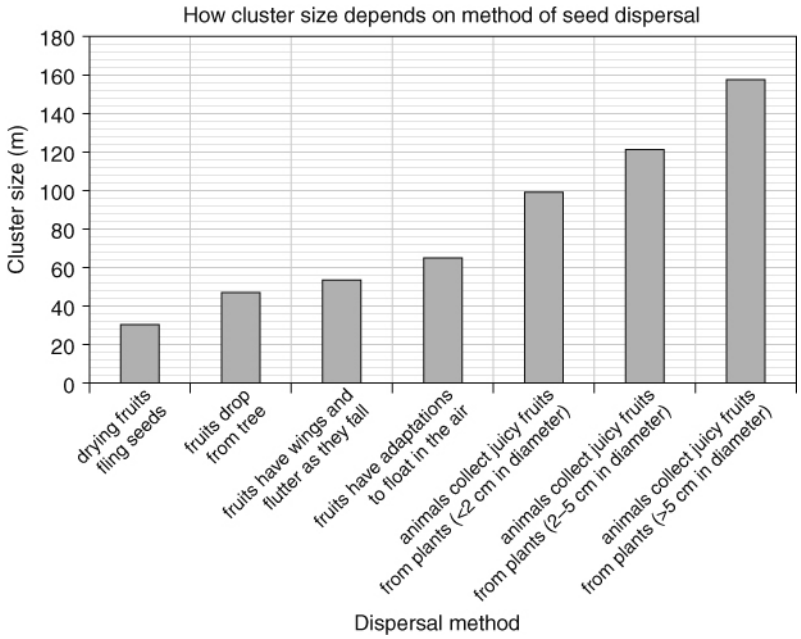
1 Scientists mapped the locations of four species of tree in a forest in Malaysia. Each tree used a different method of seed dispersal. One attracted animals to its branches to eat its fruits, another had seed pods that dried up and flung the seeds into the air. Another tree had fruits that fell to the ground and either rolled away or were moved by animals digging in the earth or eating the fruits. Another had seeds with wings like a helicopter, which fluttered to the ground.

a Look at the maps below. Which map corresponds to each type of seed dispersal? Explain your reasoning in each case.



b Suggest which method of seed dispersal is the best. Explain your reasoning. (To answer this question, you first need to define what you mean by 'best'.)

The scientists then examined 561 species of plant in the area. They looked for groups of each species ('clusters'). They measured the diameters of the clusters to show how far each species spread. The bar chart shows how the mean cluster diameter depends on the type of seed dispersal. The fruits eaten by animals were divided into three groups, depending on the size of the fruit.



c Which method of seed dispersal was the most successful in this area? Explain your reasoning.

d Suggest a habitat in which this method of seed dispersal may not be the most successful. Explain your reasoning.

2 Seedless fruits are very popular, and some are made by hybridising different types of plants. For example, seedless watermelons are produced by breeding a D watermelon with a T watermelon. The fruits produced contain small white flecks but no large black seeds.

a Describe what happens after pollination of watermelon T flowers with watermelon D pollen.

b Suggest why seeds fail to form but the fruits do.

I can…

- evaluate seed dispersal methods
- describe the formation of seeds and fruits.