

Directions: Read, annotate, and answer the questions.

Many ecosystems around the world are invaded by non-native species that have been introduced deliberately or accidentally by humans. Scientists call these species aliens. The abundance of aliens depends upon multiple factors including climate and species richness of the ecosystem.

An experiment was conducted to examine the establishment of the alien plant *Ailanthus altissima* across six Mediterranean islands. The six islands in the experiment vary slightly in climate but each contain dunes, shrubland, and old fields. Randomly selected plots of land were sampled on each of the islands to determine these values. The numbers represent the quantity of alien species found in each plot of land.

1. (RST.9-10.4.) Explain the meaning of these words using context clues and prefixes/suffixes.

deliberately: _____

aliens: _____

abundance: _____

establishment: _____

The data in Table 1. illustrates the occurrence of the alien species, *Ailanthus altissima*.

2. (IOD 201) How many total plots of lands were used in this experiment?

- a. 3
- b. 18
- c. 29
- d. 6

3. (IOD 201) Which plot of land experienced the most establishment of *Ailanthus altissima*?

- a. old fields in Mallorca
- b. shrublands in Lesos
- c. dunes in Crete
- d. old fields in Sardinia

4. (IOD 301) Which island did not experience the establishment of *Ailanthus altissima*?

- a. Porquerolles
- b. Sardinia
- c. Crete
- d. Mallorca

Island	<i>Ailanthus</i>		
	Dunes	Shrubland	Old Fields
Crete	0	2	2
Lesos	0	2	2
Mallorca	0	1	3
Menorca	0	1	2
Porquerolles	0	0	0
Sardinia	1	3	4

Table 1.

5. (IOD 301) Which of the following statements is supported by the data in Table 1.?

- a. The islands of Mallorca and Menorca had the same results in each plot of land.
- b. On all six islands, old fields experienced the least establishment of *Ailanthus*.
- c. The island of Sardinia experienced the most establishment of *Ailanthus*.
- d. On all six islands, dunes experienced the most establishment of *Ailanthus*.

One of the major factors determining an ecosystem’s invasibility is climate. Climate refers to the weather conditions, such as temperature, precipitation, humidity, and winds, in an area over a long period of time. Temperature and precipitation are the two most important factors that determine a region’s climate.

6. (RST.9-10.4.) Explain the meaning of these words using context clues and prefixes/suffixes.

invasibility: _____

precipitation: _____

Below is temperature and precipitation data for the six Mediterranean islands. The black data representations in Figure 1. and Figure 2. are from the year of the experiment and the white data representations are from the following year.

7. (IOD 301) According to Figure 1, which island experienced the largest change in temperature from one year to the next year?

- a. Lesos
- b. Mallorca
- c. Crete
- d. Porquerolles

8. (IOD 301) According to Figure 1, which island had the same mean temperature from one year to the next year?

- a. Lesos
- b. Crete
- c. Sardinia
- d. Porquerolles

9. (IOD 301) According to Figure 2, which island experienced the smallest change in precipitation from one year to the next year?

- a. Menorca
- b. Sardinia
- c. Lesos
- d. Porquerolles

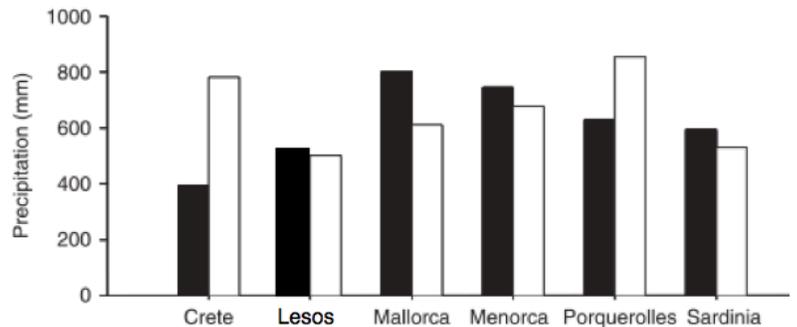
10. (IOD 301) According to Figure 2, which island experienced a 200 mm reduction in precipitation from one year to the next year?

- a. Crete
- b. Sardinia
- c. Porquerolles
- d. Mallorca



Mediterranean Island

Figure 1.



Mediterranean Island

Figure 2.

Adapted from:

Montserrat Vila. (2008). Widespread resistance of Mediterranean island ecosystems to the establishment of three alien species. *Diversity and Distributions*, 14, 839-851. doi: 0.1111/j.1472-4642.2008.00503.x