

Exercise:

The Monarch butterfly

The large and brilliantly-coloured monarch butterfly is among the most easily recognizable of the butterfly species that call North America home. They have two sets of wings and a wingspan of about 10 cm. Monarch butterflies are found across North America wherever suitable feeding, breeding, and overwintering habitat exists. They are broken into two populations separated by the Rocky Mountains, called the eastern and the western populations. Whether monarchs are present in a given area within their range depends on the time of year.

They travel great distances between summer breeding habitat and winter habitat, where they spend several months inactive.

One of the most spectacular natural phenomena in the world is the annual migration across North America of the Monarch butterfly. Monarchs know the correct direction to migrate even though the individuals that migrate have never made the journey before. They follow an internal compass.

A single monarch can travel hundreds or even thousands of kilometres. In theory, these small insects cover a round trip of over 15,000 km. In practice, however, no individual butterfly completes the entire round trip.

Female Monarchs lay eggs for the next generation during the northward migration, and at least five generations are involved in the annual cycle. Most adult monarchs only live for a few weeks, searching for food in the form of flower nectar, for mates, and for milkweed on which to lay their eggs. The last generation that hatches in late summer delays sexual maturity and undertakes a spectacular fall migration.

There are many different migration routes, both in the northern and southern hemispheres, but the eastern population starts its journey in Canada and finishes in Mexico.

This is where some extremely sad news comes from. Storms earlier this year blew down more than a hundred acres of forests where migrating Monarch butterflies spend the winter in central Mexico. These storms also appear to have frozen or killed about 7m of the estimated 84m butterflies that wintered there.

A combination of such high winds, rain and freezing temperatures have never been seen in this area. This highlights just how fragile these forests are, and how fragile the Monarchs are.

These beautiful creatures travel enormous distances for one reason. They depend on finding relatively well-preserved forests, where millions of the orange-and-black butterflies hang in clumps from the branches, and mate. The trees, and the clumping, help to protect the butterflies from cold rains and steep drops in temperature.

The biggest danger to their habitat comes from illegal logging. In April, Mexico's government announced it would create a special national police squad to patrol nature reserves and fight environmental crimes. While the force has not yet formally deployed, illegal logging in the monarch reserve dropped about 50% this year.

Unlike in past years, when most logging was done in the farming communities, about three-quarters of the tree-cutting this year occurred on public lands in the reserve's core area — precisely the kind of terrain that environmental police could most effectively protect. Conservationists have tried to convince the largely impoverished farm and mountain communities, which actually own most of the land, that the forest is worth more to them in terms of tourism when left standing, instead of being cut down.

The future looks bleak indeed for these intrepid and elegant travellers.

The Tribune

Sentences

- **A** This migratory generation can live upward of eight months.
- **B** But they also face some threats in these forests.
- **C** Many of them are eaten by birds.
- **D** They have had limited success in doing this.
- **E** They are one of the few insects that migrate.
- **F** This was the first time such weather patterns occurred.
- **G** This points them in the right direction each spring and fall.