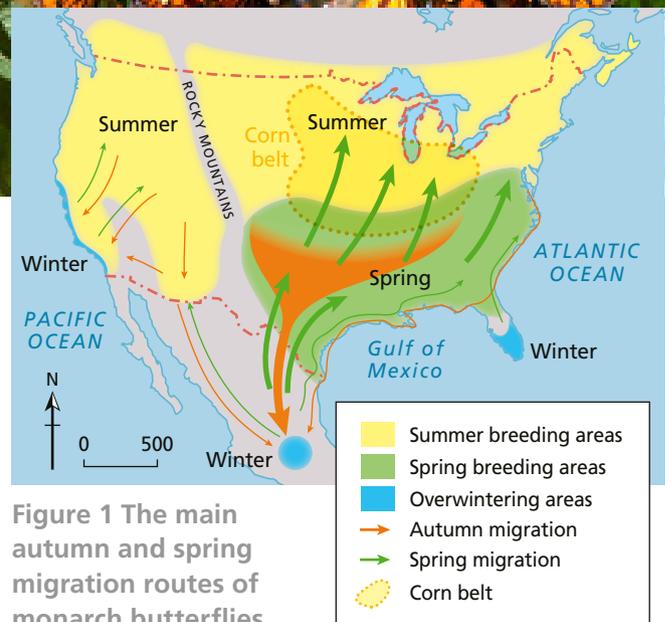


# Monarch migration salvation

'Butterfly mountain' was until recently considered to be in danger of losing its namesakes, but **Liz Sheffield** explains how ex-illegal loggers might be able to save the day

**M**onarch butterflies are in the news, again. These spectacular insects have featured in news items pretty well every year since the 1970s. That was when it became clear that each spring, the majority of monarchs start an 8-month migration which takes them all the way from southern Mexico to eastern Canada and back (see Figure 1). This 4000 km or so journey involves four generations of animals, and no-one knows how those in the last generation find their way to the few select spots in the forested mountains of Mexico where their great grandparents hibernated. Here, every autumn, many millions of the butterflies crowd together, colouring the trees orange and bending the branches with their collective weight — individuals each with a mass of only about half a gram.



**Figure 1** The main autumn and spring migration routes of monarch butterflies.

The Rocky Mountains separate two populations. The smaller west coast population overwinters near the southwest coast of the mainland; most individuals from the main population make the long journey to Mexico around this time of year

## A perilous journey

When temperatures rise again in spring, the butterflies leave Mexico and disperse across the USA, seeking nectar-rich flowers to feed on, and milkweed plants on which to lay their eggs. Milkweed may be the favourite food of monarch caterpillars, but they are not popular with arable farmers. Increasing use of GM

crops, manipulated to be resistant to herbicides, has proved catastrophic for monarch butterflies. Figure 2 shows that, as the planting of herbicide-resistant crops in the USA has risen, the numbers of monarchs has plummeted. When farmers douse their fields with herbicides, the GM crops survive but the weeds die. The problem is well recognised and there are now schemes across the USA to encourage farmers and members of the public to leave some land untreated with herbicides and/or to plant milkweed along monarch migration routes.

Until recently, the butterflies faced more hazards when they arrived at their Mexican overwintering sites. Deforestation was rife, with illegal logging persisting, despite the setting aside of 56 259 hectares of forest as the Monarch Butterfly Biosphere Reserve, and its designation as a UNESCO World Heritage Site. It was estimated that the butterfly population declined by as much as 90% over the last 20 years. As a recent BBC interview showed, however, some of the illegal loggers have realised the huge economic potential of the butterflies. They have abandoned their chainsaws and taken up roles in preserving the forest, educating local people, and assisting tourists. Companies are now offering tours that show off the butterfly roosting sites, and provide the mesmerising spectacle of tens of

thousands of butterflies taking to the air as they start their spring migration. The expert guides for the tours used to be loggers but now they make their living by supporting an increasingly attractive lure for ecotourists. Let's hope this becomes the back-from-the-brink success story the monarch butterflies deserve.

## Activities

- 1 Learn more about the perilous journeys made by monarch butterflies from this beautiful BBC video: <https://vimeo.com/41075641> and find out what one conservation organisation is doing to help: [www.monarchwatch.org](http://www.monarchwatch.org)
- 2 Find a local butterfly conservation organisation and join their voluntary work, such as recording, or improving local butterfly habitat, e.g.: [www.tinyurl.com/bnws98](http://www.tinyurl.com/bnws98)
- 3 Find out which plants have the best nectar and larval food for your local butterflies and create a butterfly-friendly spot in your garden or school grounds, e.g. see: [www.tinyurl.com/ycndcuol](http://www.tinyurl.com/ycndcuol)

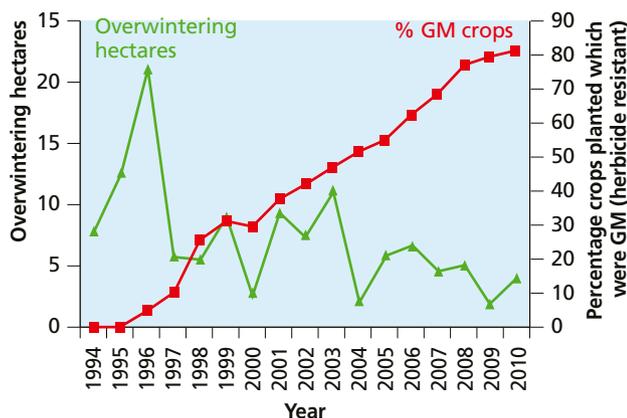


Figure 2 Graph showing the area occupied by hibernating monarch butterflies in regularly monitored Mexican locations and the % GM herbicide resistant crops planted in the corn belt area (see Figure 1) from which over 90% of the Mexican migrants originate (1994–2010)

## Further reading

More on the Monarch Butterfly Biosphere Reserve:  
<http://whc.unesco.org/en/list/1290>  
[www.tinyurl.com/y8mv2mnr](http://www.tinyurl.com/y8mv2mnr)  
[www.tinyurl.com/ydcgdb24](http://www.tinyurl.com/ydcgdb24)  
 How Mexican police have dealt with illegal logging:  
[www.tinyurl.com/ybhcmznx](http://www.tinyurl.com/ybhcmznx)  
 Another example of an illegal logger turned to ecotourism:  
[www.tinyurl.com/y9pg5rg5](http://www.tinyurl.com/y9pg5rg5)

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