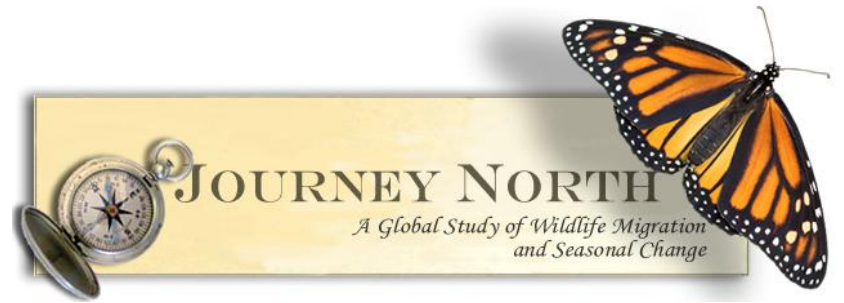




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How High Do Monarchs Fly?



By Elizabeth Howard and Rita Welch



How High Do Monarchs Fly?

People have seen monarchs flying over backyards, schoolyards and high above the trees. How high do monarchs fly — and when are they too high to see?

From Tall Buildings

People in skyscrapers have seen monarchs flying past office windows. One observer reported monarchs from the **54th floor** of tallest building in Dallas, Texas.





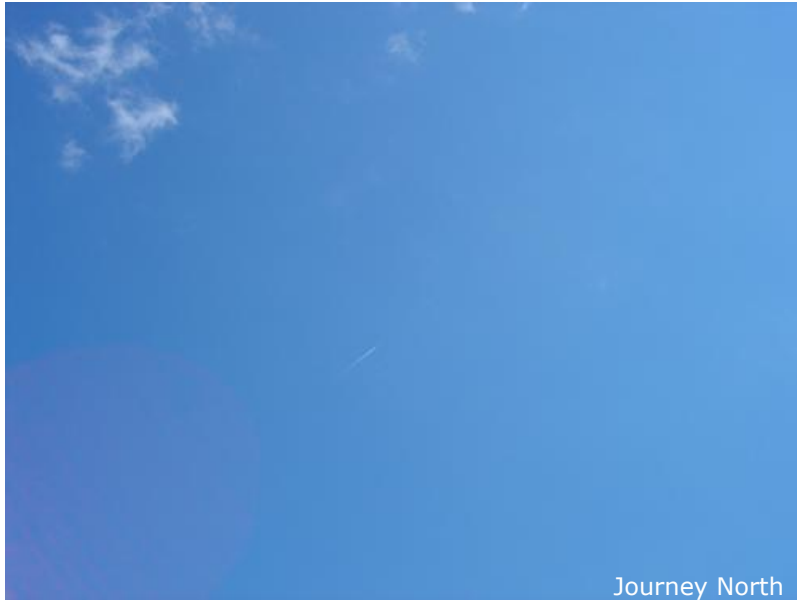
From Hot Air Balloons

People have seen monarchs while floating high above the ground.

From Gliders

A glider pilot in Massachusetts reported monarchs soaring at 4,500 feet.





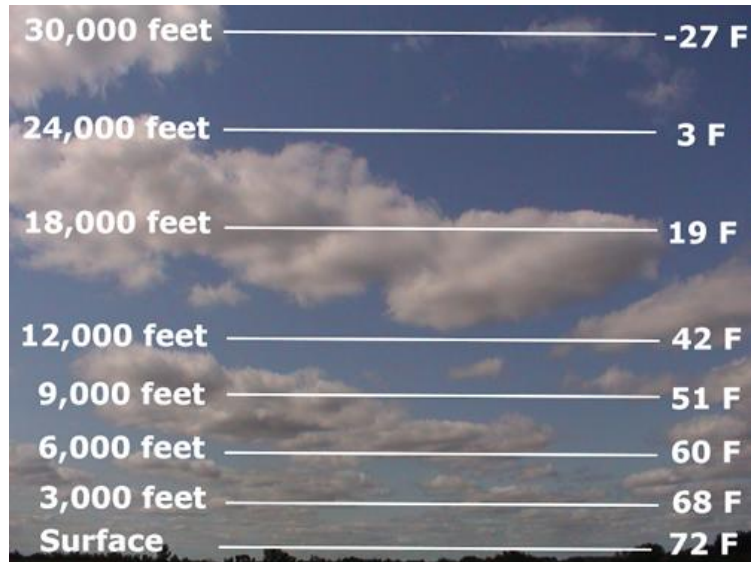
From Airplanes

Airline pilots have spotted monarchs when flying at 10,000 to 13,000 feet.

Over Two Miles High!

The highest monarchs ever reported were seen by a glider pilot soaring 11,000 feet above the earth.





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Temperature and Flight

Air temperatures are cooler at higher altitudes. Monarchs cannot fly if their muscles are too cold, about 60° F. Depending on the day, cold temperatures can limit how high monarchs can fly. How many feet high could a monarch fly at the temperatures shown here?

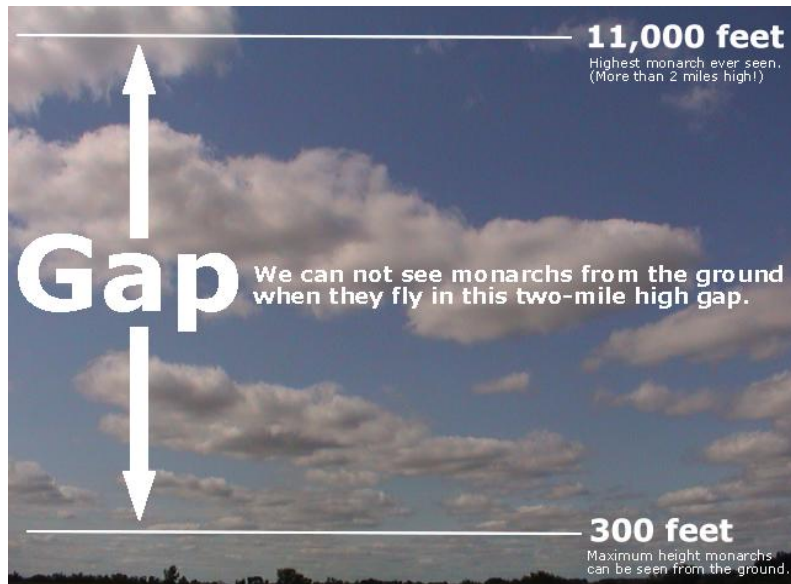
Wind and Flight

The height monarchs fly also depends on the wind. Monarch scientist Dr. Bill Calvert explains:

"If the winds are going in the right direction, monarchs can thermal upward. Wind speed increases rapidly at increasingly higher altitudes. Monarchs may rise until we can see them no more. On the *best* migration days we often see the *fewest* butterflies."



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Out of Sight

We can't see monarchs when they fly more than about 300 feet high. There is a gap overhead two miles high where monarchs can travel and we can't see them.

How High Do Monarchs Fly?

Nobody knows exactly how high monarchs fly during their long migration. They are just too hard to observe. Monarchs can travel high above our heads and pass by unnoticed.



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