

Warm-weather fiends

Mosquitoes are not the only disease-carrying pests that are thriving due to the effects of climate change.

TICKS

In autumn, the winter tick climbs onto a plant and lies in wait for a warm-blooded host – often a moose.

When one comes along, the tick latches on and feeds on it through the winter before falling off in spring to lay eggs and restart the cycle.

But scientists from the University



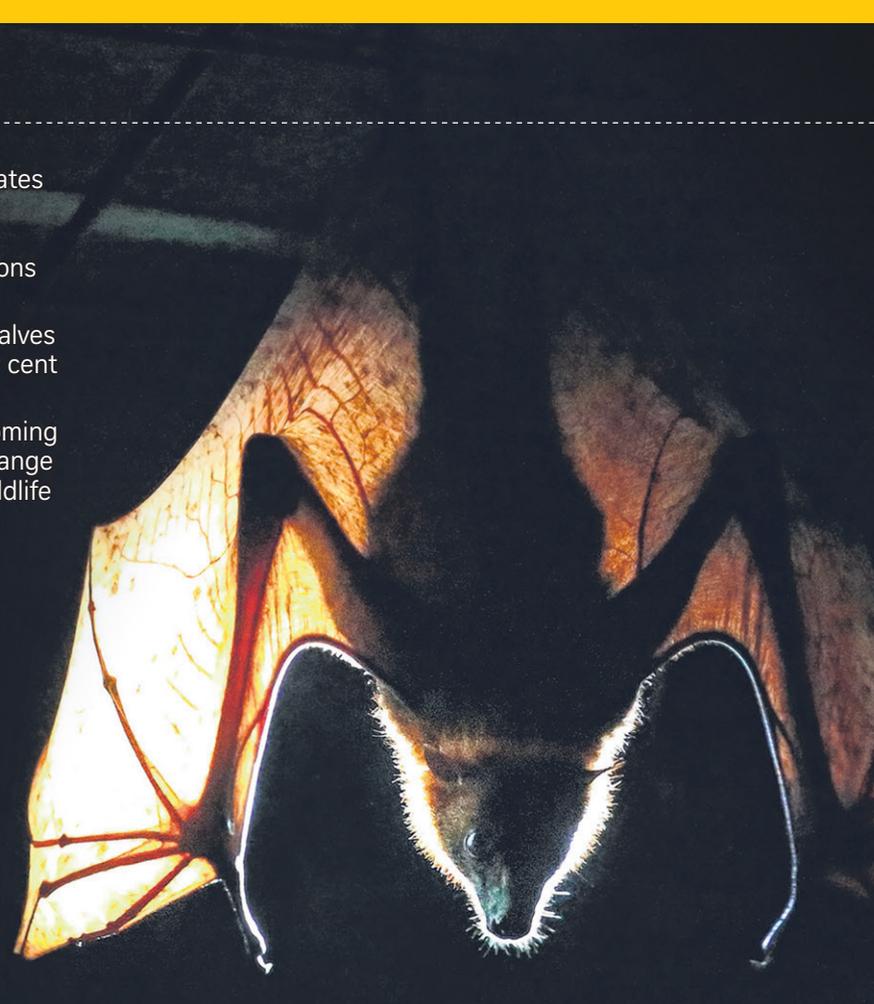
of New Hampshire in the United States have found that climate change is leading to late winters and early springs, which boosts tick populations to the detriment of the moose.

In some parts of the US, moose calves are so infested by ticks that 70 per cent of them die from blood loss.

"The iconic moose is rapidly becoming the new poster child for climate change in parts of the North-east," says wildlife ecology professor Pete Pekins, who studies the animals.

Ticks are causing problems for people too. A study released earlier this month found that warmer temperatures in the US are expected to cause a 20 per cent increase in Lyme disease cases by the middle of the 21st century.

Reports of the tick-borne illness, which can cause severe headaches, arthritis and heart palpitations, have increased from 10,000 in 1991 to about 28,000 a year in the US.



BATS

In Australia, large fruit bats have been found to carry the Hendra virus, which can be deadly to humans and horses but leaves the bats unscathed.

These bats feed on a variety of fruit that tend to grow in warmer climates.

"Climate change results in changes in temperature that allow these fruits to grow in different areas," says Professor Wang Linfa, who is director of the Emerging Infectious Diseases Programme at Duke-NUS Medical School. "The bats follow the trees, and the disease follows them."

It is believed that bats excrete the virus in their urine, and that horses become infected when they consume contaminated food or water.

People get infected when they come into direct contact with the body fluids of sick horses.

The silver lining is that the disease is still extremely rare. Since 1994, only seven people have been infected by the virus. However, fatality rates are high – four of those people subsequently died.

VIBRIO BACTERIA

Sea temperatures are rising because of climate change, and a family of bacteria known as *Vibrio* is thriving in this new environment.

Several species can cause stomach problems in people who consume contaminated shellfish. If the bacteria get into an open wound, the consequences can be fatal.

"If you are a fisherman and have a cut on your hand, you could die within 48 hours," says American microbiologist Rita Colwell.

By analysing data collected over the course of 50 years, she found that the number of *Vibrio* bacteria clinging to plankton harvested in the North Atlantic went up along with rising water temperatures.

The spread of these bacteria is like the proverbial canary in the coal mine, and people should pay attention to what it is saying about climate change, Professor Colwell says.

