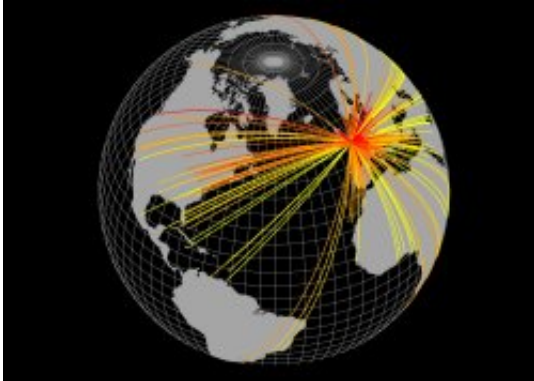


# Climate key to species invasion by air

April 11 2007

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Global air network showing hotspots for invasion of foreign species.

Far-flung regions with similar climates that are suddenly linked by a busy flight route are at an increased risk of an invasion of foreign species, according to scientists at Oxford University.

The new research also identified an ‘invasion window’ across the global air network from June to August when climatic conditions at regions linked by long haul routes are most similar to one another and the higher number of flights increases the chances of exotic species hitching a ride to somewhere new. A report of the study is published in *Proceedings of the Royal Society B*.

While the spread of invading species once they reach a new area has been extensively studied relatively little work has been done on how such organisms might initially be dispersed and survive. Recently,

international air travel has been pinpointed as a significant factor in the movement of economically damaging pest species, with 73% of recorded pest interceptions in the US occurring at airports. For example: the Mediterranean fruit fly has been consistently imported in airline luggage, plant pathogens are often found in air cargo and disease-carrying mosquitoes have survived long haul flights in aircraft cabins.

The Oxford scientists analysed data from over 800 airlines for 12 months (from 1 May 2005 to 30 April 2006) detailing over 3 million flights. They then examined the mean temperature, rainfall and humidity at each region linked by a flight route to see how the global air network provides seasonal links to places with similar climates.

‘When we combined this monthly climate data with information on how busy flight routes were in particular months the results were striking,’ said Dr Andy Tatem of Oxford’s Department of Zoology, who led the work with Dr Simon Hay, ‘the June to August period stood out as the time when the busiest flight routes connect geographically distant but climatically similar locations. This combination potentially increases the overall chances of dispersal and successful invasion of foreign species.’

The research will help airport and government personnel to identify where and when a heightened risk of an invasion of foreign species may occur; enabling them to target their surveillance and control efforts more effectively.

Source: Oxford University

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