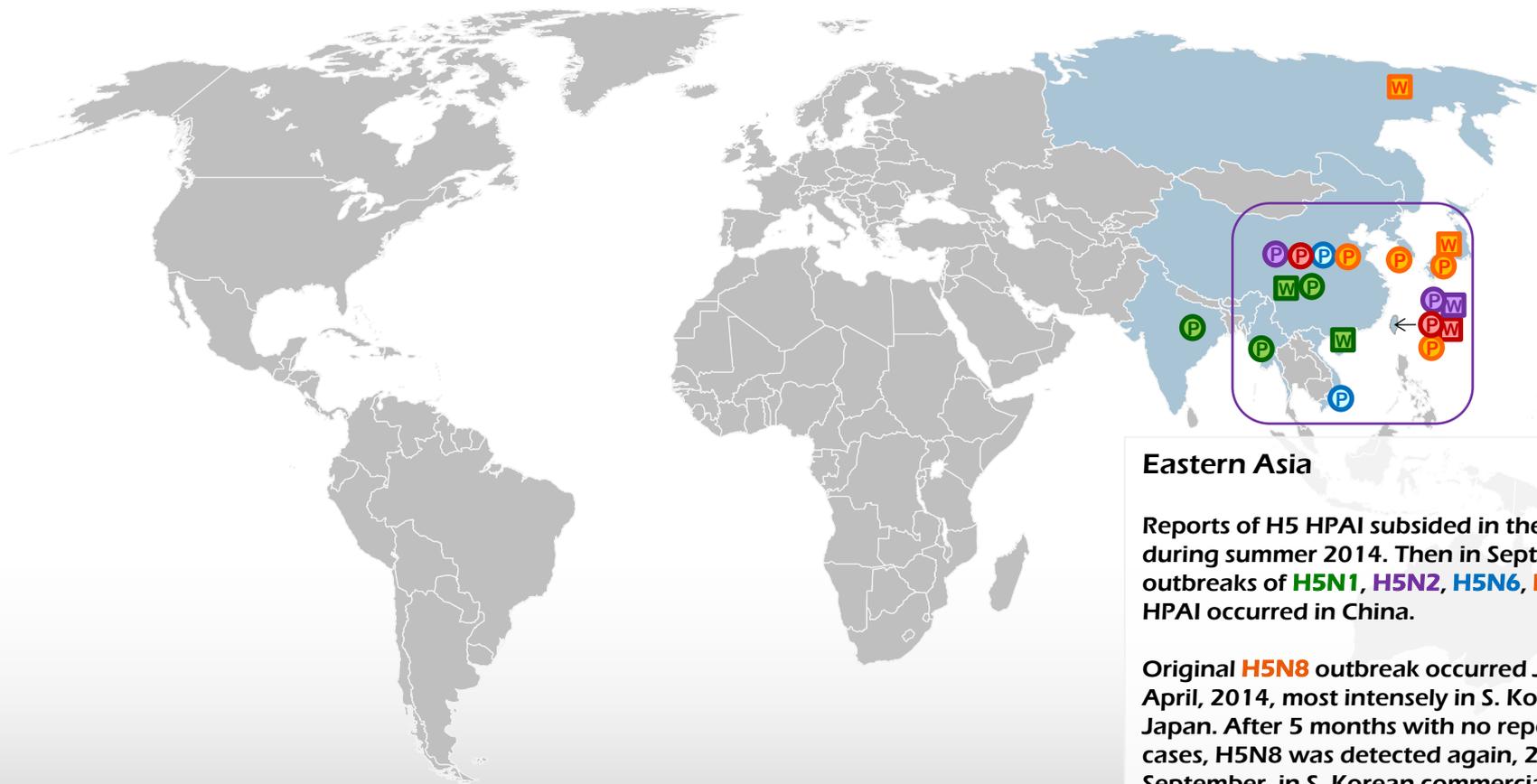


H5 HPAI reports from East Asia

September 2014 through February 2015 (OIE)



Eastern Asia

Reports of H5 HPAI subsided in the region during summer 2014. Then in September, outbreaks of **H5N1**, **H5N2**, **H5N6**, **H5N8** HPAI occurred in China.

Original **H5N8** outbreak occurred January-April, 2014, most intensely in S. Korea and Japan. After 5 months with no reported cases, H5N8 was detected again, 24 September, in S. Korean commercial poultry. It was detected again in Japan in November.

H5N2, **H5N3**, **H5N8** outbreaks occurred in Taiwan in early 2015.

W H5N1 in wild birds
P H5N1 in poultry

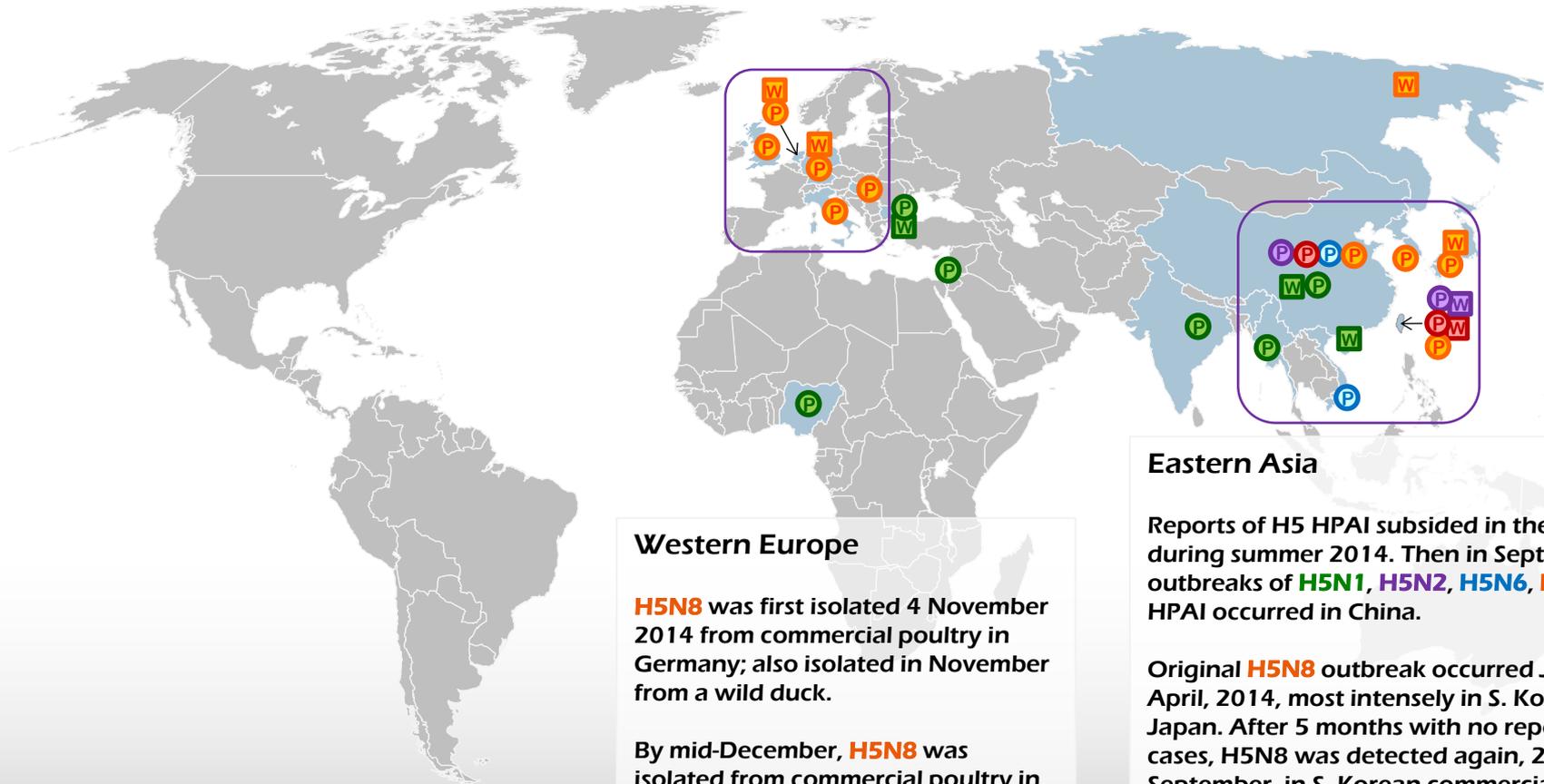
W H5N2 in wild birds
P H5N2 in poultry

W H5N3 in wild birds
P H5N3 in poultry

W H5N6 in wild birds
P H5N6 in poultry

W H5N8 in wild birds
P H5N8 in poultry

H5 HPAI reports from Europe, Middle East, and Africa November 2014 through February 2015 (OIE)



Western Europe

H5N8 was first isolated 4 November 2014 from commercial poultry in Germany; also isolated in November from a wild duck.

By mid-December, **H5N8** was isolated from commercial poultry in The Netherlands, United Kingdom, and Italy.

Eastern Asia

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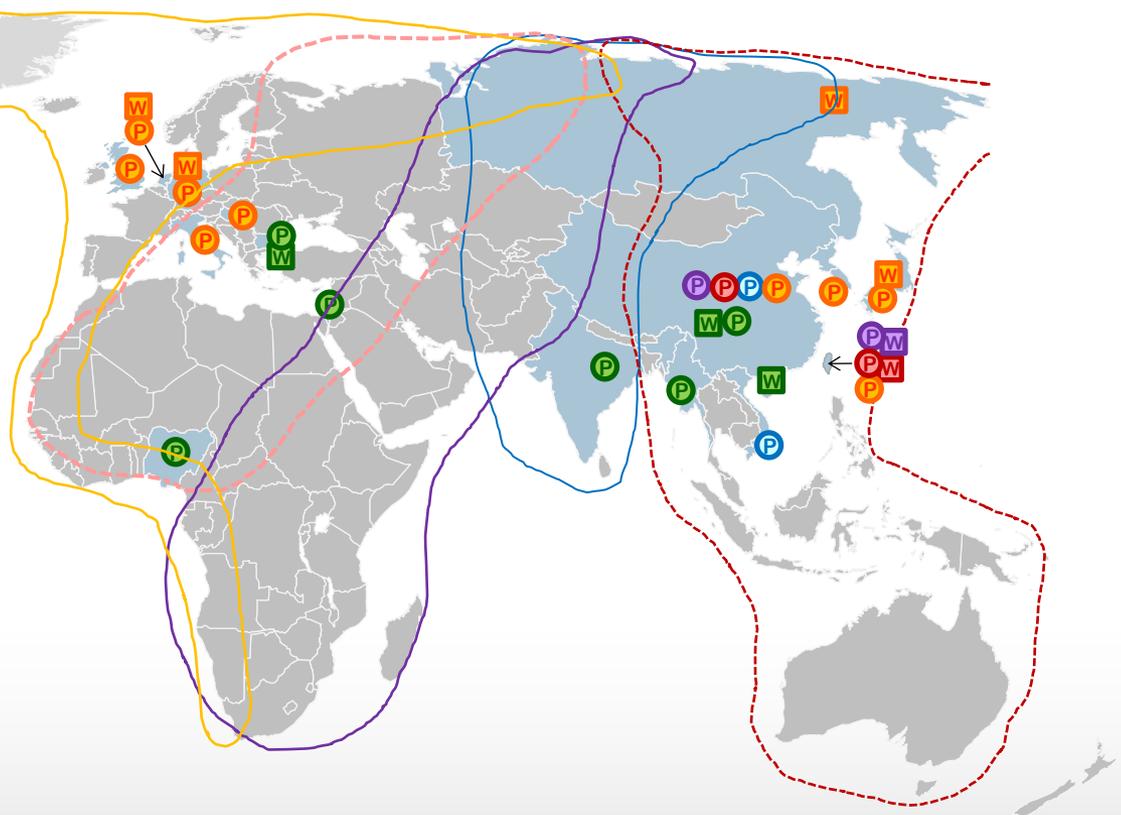
- | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| H5N1 in wild birds | H5N2 in wild birds | H5N3 in wild birds | H5N6 in wild birds | H5N8 in wild birds |
| H5N1 in poultry | H5N2 in poultry | H5N3 in poultry | H5N6 in poultry | H5N8 in poultry |

H5 HPAI reports from Europe, Middle East, and Africa November 2014 through February 2015 (OIE)

Migratory aquatic birds – likely mode for **H5N8 HPAI virus spread to Europe in fall 2014**

Several migratory flyways overlap extensively in northern Eurasia during the breeding season. **H5N8** virus carried there from East Asia in the spring could have been transferred to other birds that migrate south into Europe in the fall.

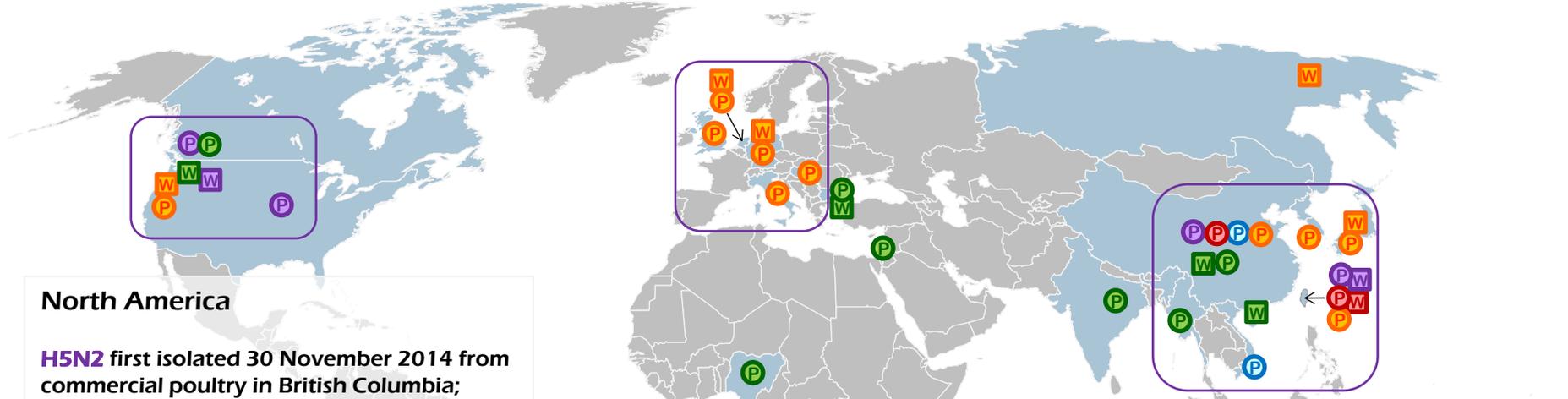
H5N8 may be better suited for long-distance dispersal than most strains of HPAI.



- | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| H5N1 in wild birds | H5N2 in wild birds | H5N3 in wild birds | H5N6 in wild birds | H5N8 in wild birds |
| H5N1 in poultry | H5N2 in poultry | H5N3 in poultry | H5N6 in poultry | H5N8 in poultry |

H5 HPAI reports from North America

November 2014 through February 2015 (OIE)



North America

H5N2 first isolated 30 November 2014 from commercial poultry in British Columbia; outbreak continues into 2015.

H5N8 first isolated 10 December 2014 from captive wild birds in Washington; later isolated from backyard poultry in Oregon. Similarly, **H5N2** identified in US wild birds and backyard poultry.

H5N1 first isolated 29 December 2014 from wild duck in Washington.

H5N8 isolated 19 January 2015 from commercial turkey farm in California.

H5N2 detected in poultry in Minnesota, Missouri, Arkansas & Kansas in March 2015.

Western Europe

H5N8 first isolated 4 November 2014 from commercial poultry in Germany; also isolated in November from a wild duck.

By mid-December, **H5N8** was isolated from commercial poultry in The Netherlands, United Kingdom, and Italy.

Eastern Asia

Reports of H5 HPAI subsided in the region during summer 2014. Then in September, outbreaks of **H5N1**, **H5N2**, **H5N6**, **H5N8** HPAI occurred in China.

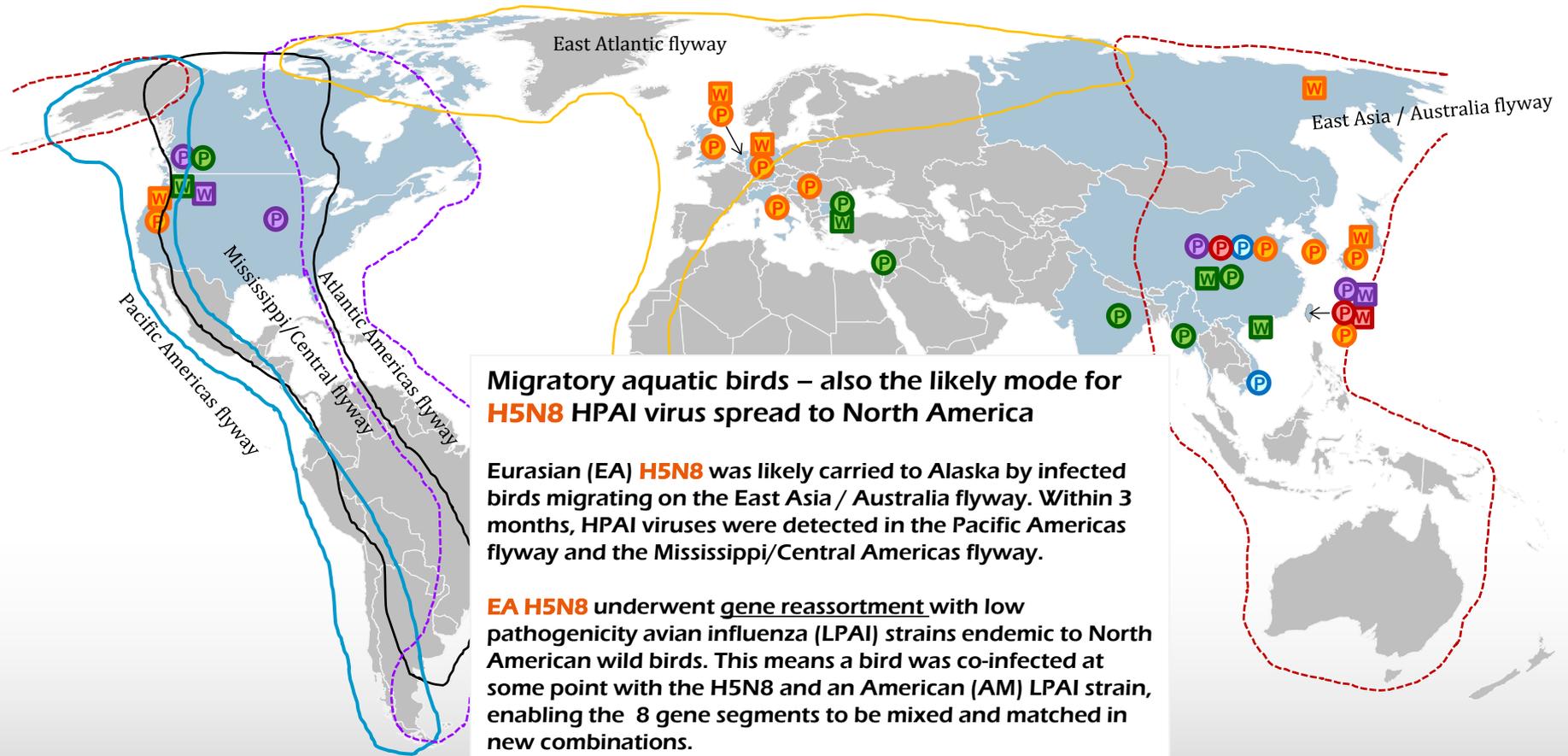
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- | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| H5N1 in wild birds | H5N2 in wild birds | H5N3 in wild birds | H5N6 in wild birds | H5N8 in wild birds |
| H5N1 in poultry | H5N2 in poultry | H5N3 in poultry | H5N6 in poultry | H5N8 in poultry |

H5 HPAI reports from North America

November 2014 through February 2015 (OIE)



Migratory aquatic birds – also the likely mode for H5N8 HPAI virus spread to North America

Eurasian (EA) H5N8 was likely carried to Alaska by infected birds migrating on the East Asia / Australia flyway. Within 3 months, HPAI viruses were detected in the Pacific Americas flyway and the Mississippi/Central Americas flyway.

EA H5N8 underwent gene reassortment with low pathogenicity avian influenza (LPAI) strains endemic to North American wild birds. This means a bird was co-infected at some point with the H5N8 and an American (AM) LPAI strain, enabling the 8 gene segments to be mixed and matched in new combinations.

EA/AM H5N1 and EA/AM H5N2 isolates in the western and central US were reassortants that contained genes of North American and Eurasian origin.

- W H5N1 in wild birds
- W H5N2 in wild birds
- W H5N3 in wild birds
- W H5N6 in wild birds
- W H5N8 in wild birds
- P H5N1 in poultry
- P H5N2 in poultry
- P H5N3 in poultry
- P H5N6 in poultry
- P H5N8 in poultry