

Historic Prevalence and Distribution of Avian Influenza Virus A(H7N9) among Wild Birds

Technical Appendix

Technical Appendix Table 1. Global distribution and prevalence of influenza H7N9 virus in wild birds

Country/state (reference)	Years sampled	No. tested	No. (%) H7N9	H7N9 virus-positive birds	Population sampled*: no. positive for any avian influenza virus/no. captured (%)
Guatemala (1)	2006–2010	256	1 (0.39)	Blue-winged teal (<i>Anas discors</i>)	Anatidae: 28/234 (12); Picidae: 1/21 (4.8); Tyrannidae: 1/1 (100)
Spain (2)	2005–2007	1,435	2 (0.14)	Mallards (<i>Anas platyrhynchos</i>)	Anseriformes: 29/628 (4.6); Ciconiformes: 3/308 (1); Charadriiformes: 0/217; Gruiformes: 3/180 (1.7); Columbiformes: 0/31; Pelecaniformes: 0/29; Passeriformes: 0/24; Phoenicopteriformes: 2/7 (28.6); Other: 0/11
Spain (3)	2005–2009	1,236	1 (0.081)	Common teal (<i>Anas crecca</i>)	Anatidae: 54/686 (7.9%); Laridae 2/256 (0.8%); Phoenicopteridae: 4/154 (2.5%); Rallidae: 1/80 (1.3%); Ardeidae: 0/12; Porphyridae: 0/12; Porphyridae: 0/12; Columbidae: 0/9; Procellariidae: 0/9; Phalacrocoracidae: 0/6; Scolopacidae: 0/4; Recurvirostridae: 0/2; Sternidae: 0/2; Alcedinidae: 0/1; Fringillidae: 0/1; Phasianidae: 0/1; Stercorariidae: 0/1.
Egypt (4)	2003–2007	6,070	2 (0.033)	Northern shovelers (<i>Anas clypeata</i>)	Anatidae majority: not reported.
Delaware, USA (5)	2000–2005	6,340	2 (0.032)	Mix of shorebirds and ducks	<i>Arenaria interpres</i> : 262/2368 (11%); <i>Calidris canutus</i> : 15/1993 (0.75); <i>Calidris alba</i> : 8/745 (1.1); <i>Calidris alpina</i> : 1/377 (0.26); <i>Calidris pusilla</i> : 4/439 (0.91%); <i>Limnodromus griseus</i> : 1/157 (0.64%); <i>Calidris minutilla</i> : 0/127; <i>Larus atricilla</i> : 1/78 (1.3%); <i>Rynchops niger</i> : 0/49; <i>Larus argentatus</i> : 0/5; <i>Tringa semipalmatus</i> : 0/2
Mongolia (6)	2005–2009	3,950	1 (0.025)	Wild duck, goose, swan or gull	Not reported: <i>Cygnus cygnus</i> ; <i>Anser indicus</i> ; <i>Bucephala clangula</i> ; <i>Tadorna ferruginea</i> ; <i>Anas platyrhynchos</i> ; <i>Anas strepera</i> ; Laridae
Taiwan (7) + this study	1998–2011	44,786	8 (0.018)	Wild ducks	Anatidae 229/20812 (1.1%); Shorebirds 3/6435 (0.05%); Laridae (2/617, 0.32%); Ardeidae (2/825, 0.24%); other birds (1/598, 0.17%)
Delaware, USA, & Alberta, Canada (8)	1976–2001	17,732	2 (0.011)	Mix of shorebirds and ducks	Anatidae (2989/13466, 22.2%); Charadriiformes— <i>Larus atricilla</i> and <i>L. argentatus</i> majority (606/4266, 14.2%)

*Populations sampled represent individual published studies in correlating countries/states.

Technical Appendix Table 2. Influenza H7, N9, H7N9, and H9N2 prevalence in Asia*

Country (reference)	Years monitored	No. tested	No. positive (%)				Population sampled:** no. positive for any avian influenza virus/no. captured (%)
			H7	N9	H7N9	H9N2	
Mongolia (6)	2005–2009	3,950	2 (0.0506)	1 (0.0253)	1 (0.0253)	0	Not reported: <i>Anser indicus</i> ; <i>Anas platyrhynchos</i> ; <i>Anas strepera</i> ; <i>Bucephala clangula</i> ; <i>Cygnus cygnus</i> ; <i>Tadorna ferruginea</i> ; Laridae
Taiwan (7) + this study	1998–2011	44,786	49 (0.109)	23 (0.0514)	8 (0.0179)	0	Anatidae: 229/20812 (1.1); shorebirds: 3/6435 (0.05%); Laridae: 2/617 (0.32%); Ardeidae: 2/825 (0.24%); other birds: 1/598 (0.17%)
Asia (Kazakhstan, Mongolia, & Russia) (9)	2003–2009	2,604	0	0	0	0	Anseriformes: 9/604 (1.5%); Charadriiformes 1/684 (0.14%); Passeriformes: 2/674 (0.30); Ciconiiformes: 0/300; Gruiformes: 0/118; Podicipediformes 1/45 (2.2%); Pelecaniformes: 3/95 (3.2%); Falconiformes: 1/42 (2.4%); Galliformes: 0/16; Columbiformes: 0/18; Coraciiformes: 0/3; Cuculiformes: 0/2; Piciformes: 0/2; Strigiformes: 0/1
Russia (10)	2008	5,678	0	0	0	0	Anatidae: 30/2017 (1.5%); Araeidae: 1/81 (1.2%); Laridae: 10/1,553 (0.64%); Rallidae: 1/164 (0.61); Podicipediformes: 0/64; Scolopacidae: 0/334; Alcidae: 0/19; Charadriidae: 0/190; Recurvirostridae: 0/1; Stercorariidae: 0/1; Columbiformes: 0/25; Passeriformes: 0/989; Galliformes: 0/3; Strigiformes: 0/5; Accipitriformes: 0/8; Coraciiformes: 0/26; Apodiformes: 0/1; Piciformes: 0/3; Guidae: 0/1; Gaviiformes: 0/1; Pelecaniformes: 0/187; Procellariiformes: 0/5
Japan (11)	2001–2008	4,335	0	6 (0.138)	0	1 (0.0231)	Anatidae: 41/4309 (0.95%); Laridae 0/26
South Korea (12)	2003–2008	28,214	13 (0.0461)	7 (0.0248)	0	6 (0.0213)	Anseriformes: 225/28214 (0.8%)
China (13)	2005–2006	158	0	0	0	0	Anatidae: 20/144 (15%); Ardeidae: 0/2; Accipitridae: 0/4; Charadriidae: 0/1; Corvidae: 0/1; Falconidae: 0/2; Guidae: 0/2; Rallidae: 0/1; Phasianidae: 0/1; Upupidae: 0/1
Iran (14)	2003–2007	1,146	2 (0.175)	2 (0.175)	0	9 (0.785)	Podicipedidae: 0/19; Phalacrocoracidae: 0/14; Ardeidae: 0/22; Phoenicopteridae: 0/12; Anatidae: 31/745 (4.2%); Rallidae: 4/234, (1.8%); Recurvirostridae: 0/6; Charadriidae: 0/17; Scolopacidae: 0/51; Laridae: 0/25; Sternidae: 0/1
Mongolia (15) + this study	2009–2012	5,831	6 (0.103)	2 (0.0343)	0	0	Anatidae: (80/5731 (1.4%); Laridae: 0/100
Asia total	1998–2012	96,702	72 (0.0745)	41 (0.0424)	9 (0.0093)	16 (0.0166)	1

*Populations sampled represent individual published studies in correlating countries/states.

†NA, not applicable.

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