Target list of wild bird species for passive surveillance of H5 HPAI viruses in the EU, based on passive surveillance data from 2005 to 2017

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This list is produced as a guide to operators involved in passive wild bird surveillance for early warning of H5 HPAI in their region. The purpose of this list is to provide information on which bird species to focus in order to achieve the most effective testing of dead birds for detection of H5 HPAI viruses. It should be noted that the programmes within countries should be modulated according to demographics of local wild bird populations. Also, this list does not imply that only the carcasses of wild bird species on this list should be examined for H5 HPAI virus; carcasses of other wild bird species also should be examined, if there are reasons to do so.

The list is based on the data on the detection of H5 HPAI viruses in wild bird carcasses reported in the AI passive surveillance system by Member States between 2005 and 2017, excluding data from 2011 to 2013 where no AI epizootics occurred. Therefore, data included are from the H5N1 HPAI epidemic starting in 2005, the H5N8 HPAI epidemic starting in 2014, and the H5Nx HPAI epidemic starting in 2016. Overall, the list consists of wild bird species associated with an aquatic habitat, or wild bird species that prey on wild waterbirds or scavenge their carcasses. An exception is the fieldfare (*Turdus pilaris*). In principle, the list indicates which free-living wild bird species in the EU are more likely both to be exposed to H5 HPAI virus and to suffer a fatal infection. For this reason Muscovy duck (*Cairina moschata*) and Wood duck (*Aix sponsa*) that are exotic species only present as free-living population in a very few places in EU, were excluded. Some species were included, even if the high rate of positivity was from a single outbreak in one country, because it means that the species in question can be exposed to H5 HPAI virus in the field and can suffer fatal infection.

The list includes all species for which the rate of detection of H5 HPAI virus was 0.4% or greater; that is a chance of at least 1 in 250 of being detected positive. Careful consideration has been given to the thresholds for inclusion and some species tested at in large numbers but with low rates of detection have been excluded. It may well be that these excluded species would be targeted for active surveillance, i.e. testing apparently healthy wild birds. However, the cut-off point of 0.4% is a pragmatic choice and may be changed up or down by MSs based on local conditions including number of reports of dead wild birds and available funding.

Table: Fifty wild bird species targeted for passive surveillance of H5 HPAI viruses in the EU. This list is based on data reported by Member States to the AI EU Reference Laboratory in the AI passive surveillance system between 2005 and 2017 (years 2011, 2012, 2013 excluded). Only those submissions that were identified to species and having a detection rate of 0.4 % or higher were included. The species are arranged in families (for the large family Anatidae also in subfamily, tribe or genus), and ordered according to the species with the highest detection rates.

Family	Subfamily, tribe, or genus	Species	% positive (no. positive/no. tested)
Ducks, geese, and swans (Anatidae)	Diving ducks (Aythyini)	Tufted duck (*Aythya fuligula*)	33.4% (338/1011)
		Greater scaup (*Aythya marila*)	12.7% (9/71)
		Common pochard (*Aythya ferina*)	11.4% (26/228)
		Red-crested pochard (*Netta rufina*)	0.9% (1/112)
	Dabbling ducks (Anatinae)	Northern pintail (*Anas acuta*)	5.4% (3/56)
		Eurasian wigeon (*Anas penelope*)	3.7% (8/219)

		Gadwall (*Anas strepera*)	1.7% (3/179)
		Mallard (*Anas platyrhynchos*)	0.5% (96/20672)
		Eurasian teal (*Anas crecca*)	0.4% (5/1145)
	Sea ducks (Mergini)	Goosander (*Mergus merganser*)	6.4% (7/109)
		Common goldeneye (*Bucephala clangula*)	5.7% (3/53)
		Smew (*Mergus albellus*)	5.0% (1/20)
		Common eider (*Somateria mollissima*)	1.3% (3/228)
	Shelducks and sheldgeese (Tadorninae)	Common shelduck (*Tadorna tadorna*)	0.5% (1/218)
		Egyptian goose (*Alopochen aegyptiacus*)	0.4% (1/234)
	True geese (*Anser, Branta, Chen*)	Lesser white-fronted goose (*Anser erythropus*)	13% (3/23)
		Greylag goose (*Anser anser*)	3.5% (68/1968)
		Taiga bean Goose (*Anser fabalis*)	2.8% (4/143)
		Canada goose (*Branta canadensis*)	1.8% (19/1061)
		Pink-footed goose (*Anser brachyrhynchus*)	1.3% (1/75)
		Brant goose (*Branta bernicla*)	1.2% (1/84)
		Greater white-fronted goose (*Anser albifrons*)	0.6% (2/350)
	Swans (*Cygnus*)	Black swan (*Cygnus atratus*)	9.5% (6/63)
		Whooper swan (*Cygnus cygnus*)	9.3% (169/1818)
		Mute swan (*Cygnus olor*)	7.6% (931/12268)
Grebes (Podicipedidae)		Black-necked grebe (*Podiceps nigricollis*)	79.9% (246/308)
		Great crested grebe (*Podiceps cristatus*)	8.5% (50/588)
		Little grebe (*Tachybaptus ruficollis*)	7.8% (6/77)
Storks (Ciconiidae)		White stork (Ciconia ciconia)	0.5% (5/911)
Herons (Ardeidae)		Eurasian bittern (*Botaurus stellaris*)	2.9% (1/35)
		Little egret (*Egretta garzetta*)	2.9% (2/69)
		Great white egret (*Egretta alba*)	0.9% (4/441)
		Grey heron (*Ardea cinerea*)	0.8% (40/5093)
Pelicans (Pelecanidae)		Dalmatian pelican (*Pelecanus crispus*)	27.5% (11/40)
		Great white pelican (*Pelecanus onocrotalus*)	9.5% (2/21)
Cormorants and shags (Phalacrocoracidae)		Great cormorant (*Phalacrocorax carbo*)	0.6% (12/2090)
Raptors (Accipitridae, Falconidae, Strigidae)		White-tailed eagle (*Haliaeetus albicilla*)	6.6% (28/426)
		Rough-legged buzzard (*Buteo lagopus*)	3.7% (1/27)
		Common buzzard (*Buteo buteo*)	1.1% (72/6307)
		Peregrine falcon (*Falco peregrinus*)	3.4% (10/297)
		Northern goshawk (*Accipiter gentilis*)	1.3% (8/616)
		Eurasian eagle-owl (*Bubo bubo*)	0.9% (3/340)
Coots, crakes, and rails (Rallidae)		Western swamphen (*Porphyrio porphyrio*)	6.7% (1/15)
Sandpipers (Scolopacidae)[b]		Green sandpiper (*Tringa ochropus*)	33.3% (1/3)
Gulls, terns, and allies (Laridae)		Great black-backed gull (*Larus marinus*)	13.8% (22/159)
		European herring gull (*Larus argentatus*)[a]	3.1% (66/2135)
		Mew gull (*Larus canus*)	0.8 (4/481)
		Black-headed gull (*Chroicocephalus ridibundus*)	0.7% (30/4075)
Corvids (Corvidae)		Eurasian magpie (*Pica pica*)	0.6% (7/1232)
Thrushes (Turdidae)		Fieldfare (*Turdus pilaris*)	0.5% (1/192)

(a) This does not include the Caspian gull (*Larus cachinnans*) or the yellow-legged gull (*Larus michahellis*), which are considered separate species.
(b) Another wader, *Numenius* species was not included in this list because it was not identified to species. However, in the EU, the two most likely *Numenius* species are the Eurasian curlew (*N. arquata*) and the whimbrel (*N. phaeopus*).