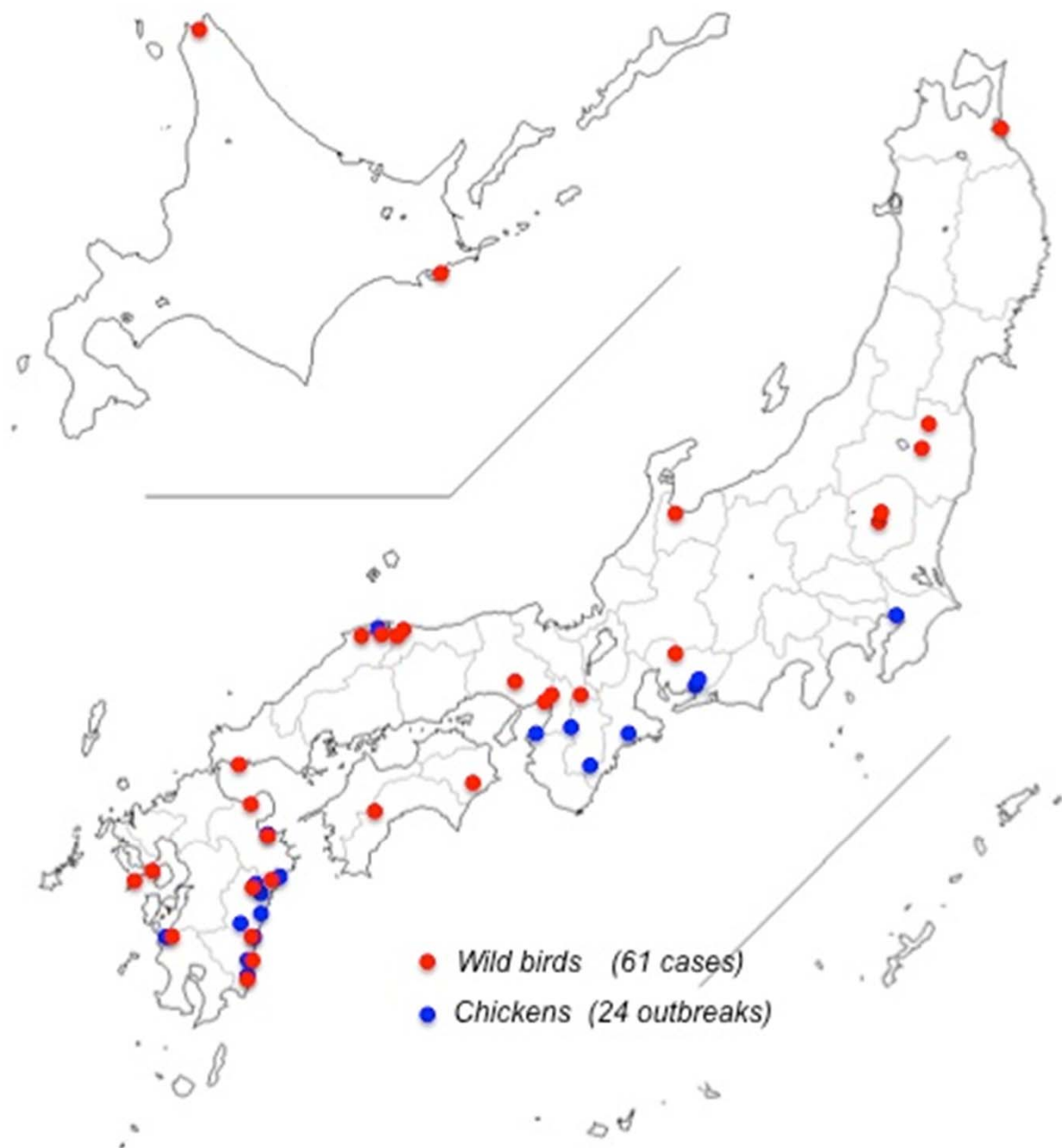


感染症危機管理研修会 平成23年10月12日 (国立感染症研究所)

鳥インフルエンザ – 最新の話題 –

鳥取大学鳥由来人獣共通感染症疫学研究センター
伊藤壽啓

Outbreak of H5N1 avian influenza in Japan in 2010-2011 winter season



Case of infection with H5N1 HPAI virus in Japan in 2010-2011

Areas	Prefectures	Species of birds (No. of reported birds)
Hokkaido	Hokkaido	Duck (2) , Whooper swan (6), Greater scaup (2), Pintail (1)
Honshu	Aomori	Peregrine falcon (1)
	Fukushima	Tufted duck (5), Tundra swan (1)
	Tochigi	Peregrine falcon (1), Goshawk (1)
	Aichi	Peregrine falcon (1)
	Toyama	Mute swan (1)
	Kyoto	Peregrine falcon (1)
	Hyogo	Common pochard (1), Little grebe (1), Mute swan (1), Great crested grebe (1)
	Tottori	Tundra swan (1), Black-headed gull (1), Tufted duck (2), Common pochard (1), Peregrine falcon (1)
Shimane	Tufted duck (2), Common pochard (1)	
Yamaguchi	Tufted duck (1), Black swan (1)	

(Cont'd)



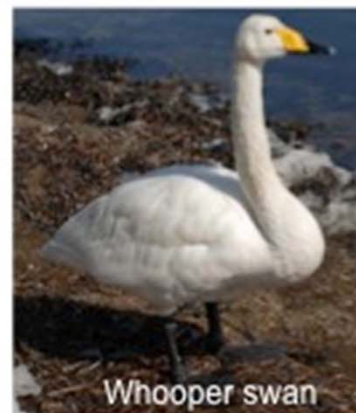
Tufted duck



Common pochard



Pintail duck



Whooper swan



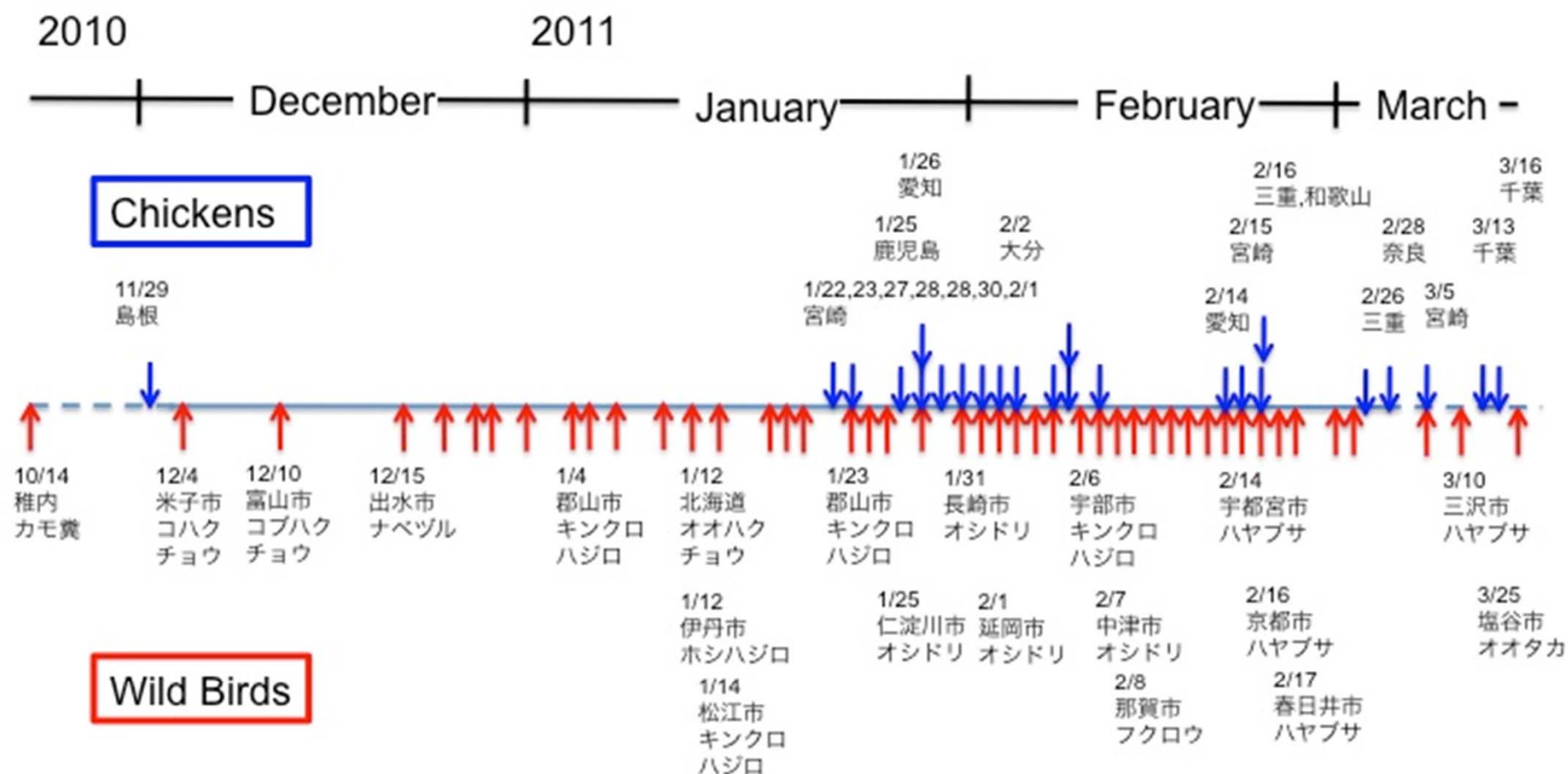
Tundra swan

Case of infection with H5N1 HPAI virus in Japan in 2010-2011 winter season (2)

Areas	Prefectures	Species of birds (number of reported birds)
Shikoku	Tokushima	Ural owl (1)
	Kochi	Mandarin duck (1)
Kyushu	Nagasaki	Mandarin duck (3), Peregrine falcon (1)
	Oita	Mandarin duck (4), Grey heron (1)
	Miyazaki	Mandarin duck (3), Peregrine falcon (3), Little grebe (1)
	Kagoshima	Hooded crane (7)



Time line of H5N1 avian influenza outbreak in Japan 2010 - 2011

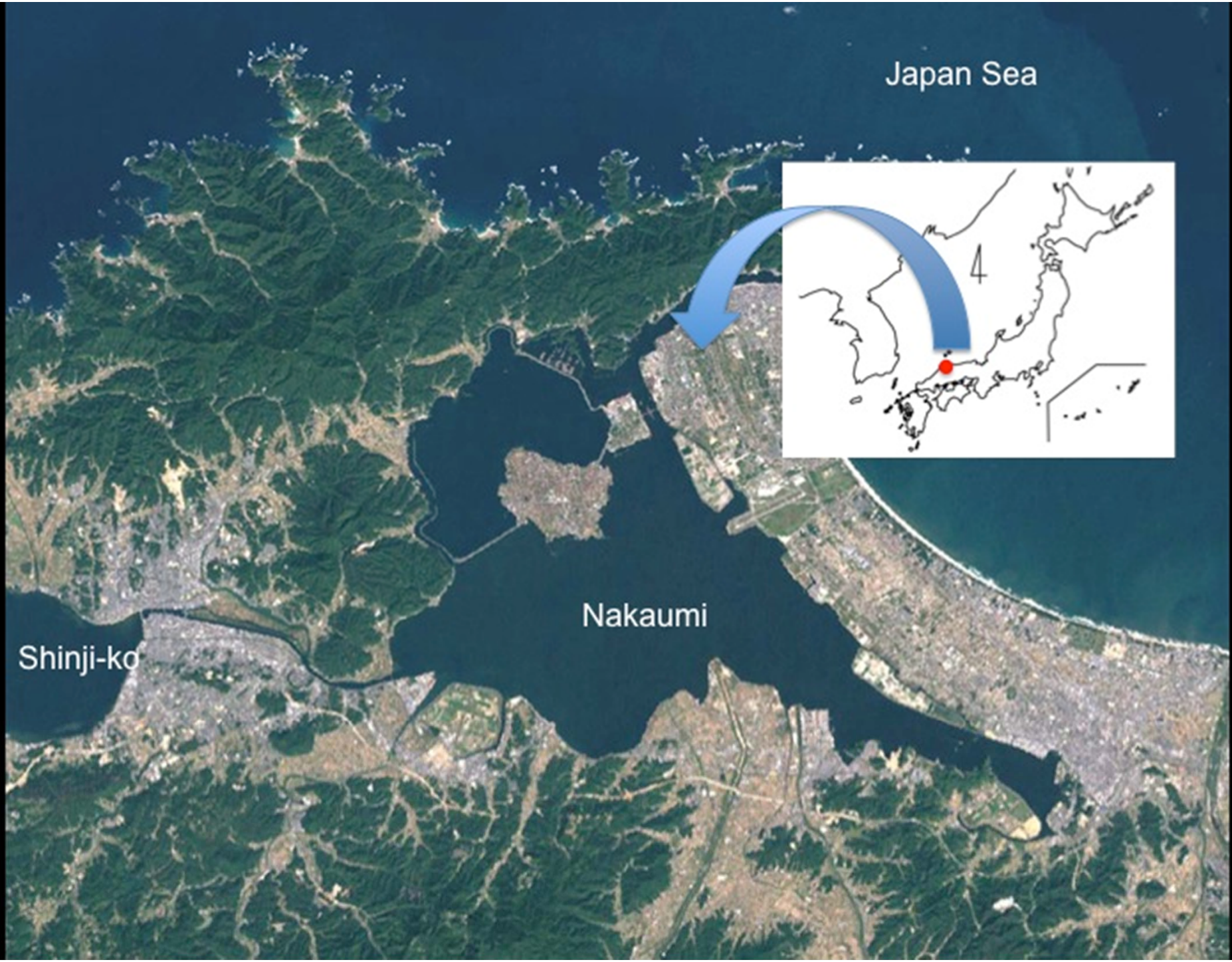


Japan Sea

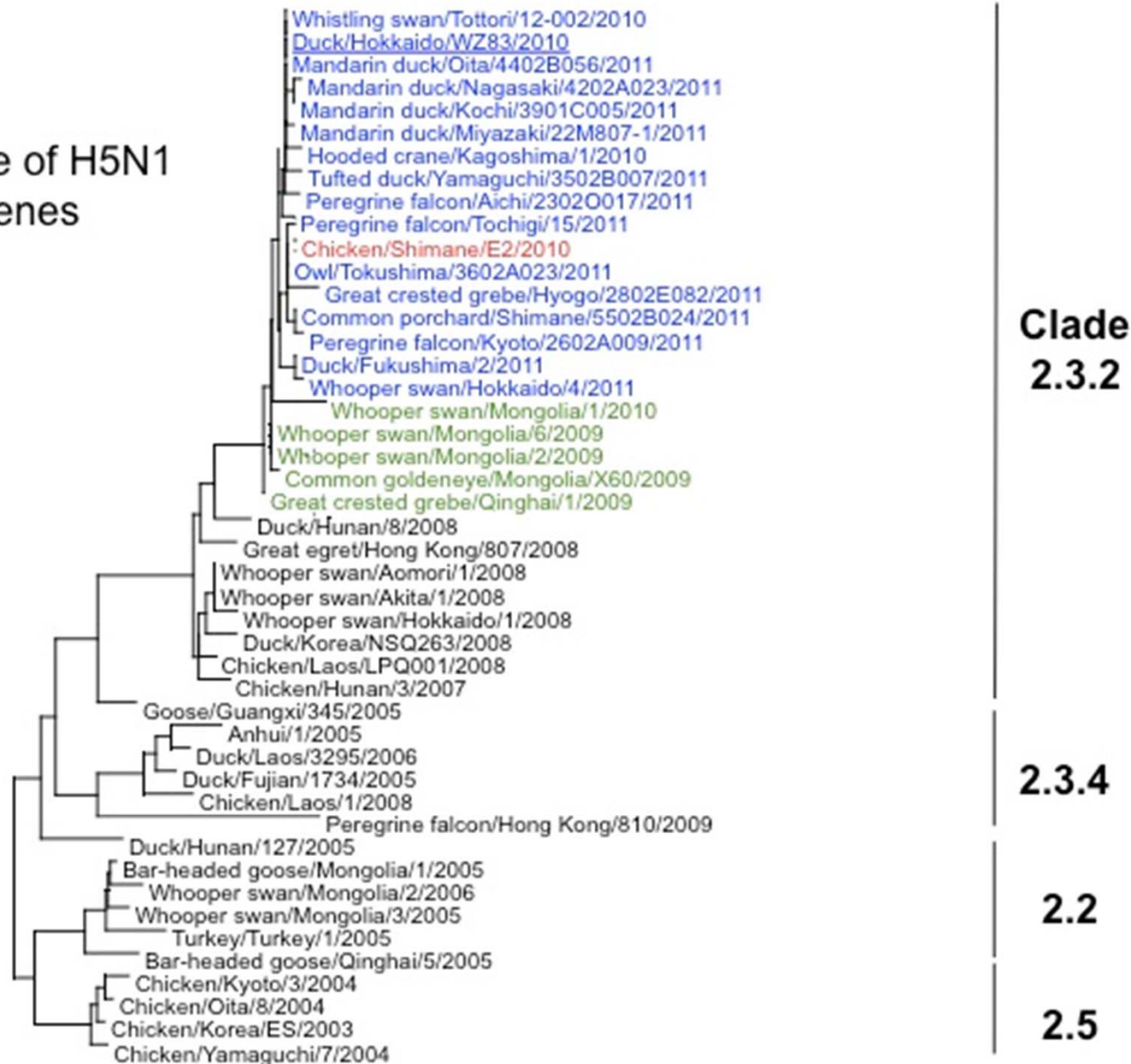


Nakaumi

Shinji-ko



Phylogenetic tree of H5N1
HPAI Virus HA genes

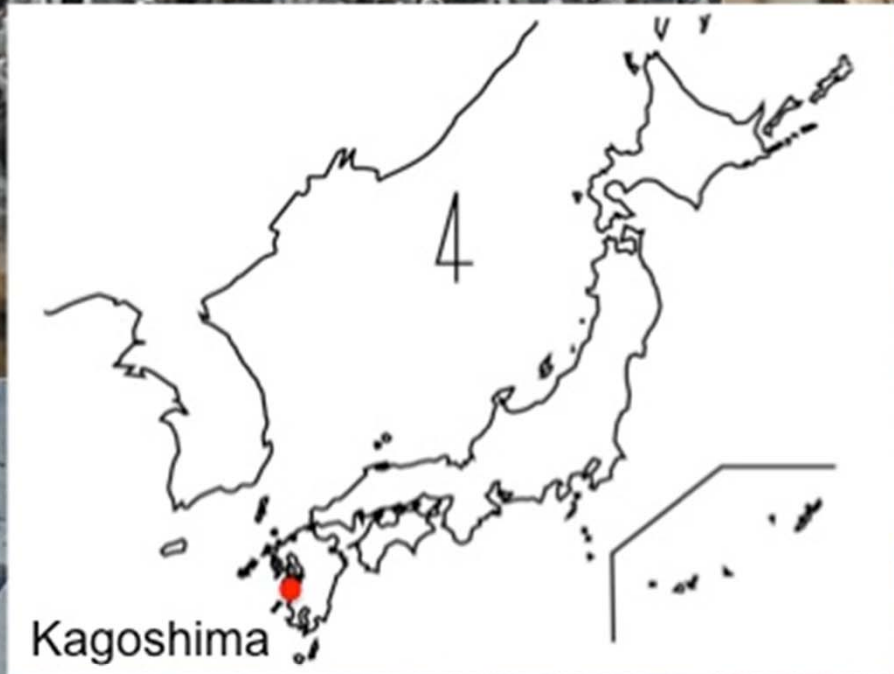
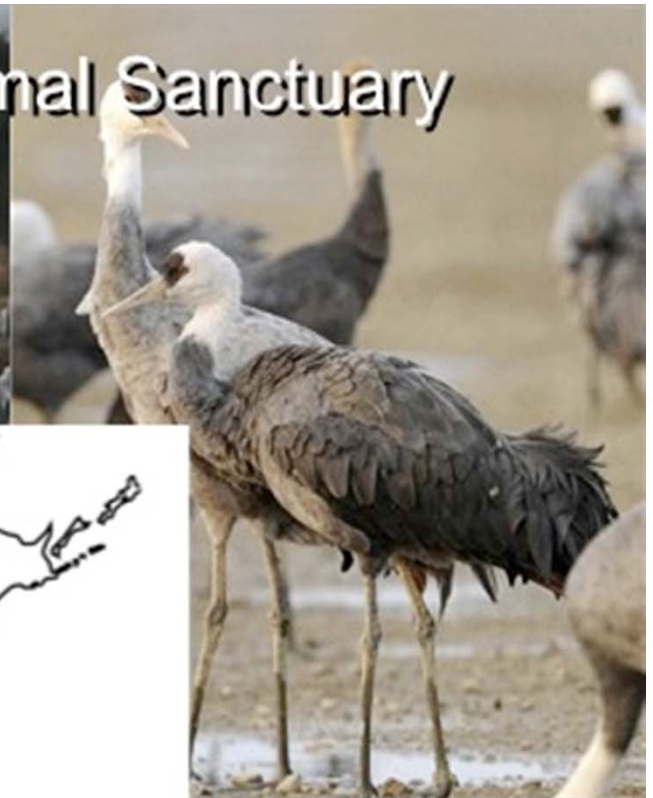


Sequence Homology among H5N1 HPAI isolates from wild birds and chickens

Virus	Nucleotide (%)				
	WZ83	Ck/Shima	Tottori	Kagoshima	Shimane
Duck/Hokkaido/WZ83/2010		99.6	100	99.7	99.6
Chicken/Shimane/E1/2010	99.2		99.5	99.4	99.7
Tundra swan/Tottori/12-002/2010	100	99.6		99.8	99.4
Hooded crane/Kagoshima/1/2010	100	99.6	100		99.3
Porchard/Shimane/5502B024/2011	99.6	99.4	99.5	99.5	

Amino acid (%)

Izumi-Takaono National Bird and Animal Sanctuary





← White-naped Crane

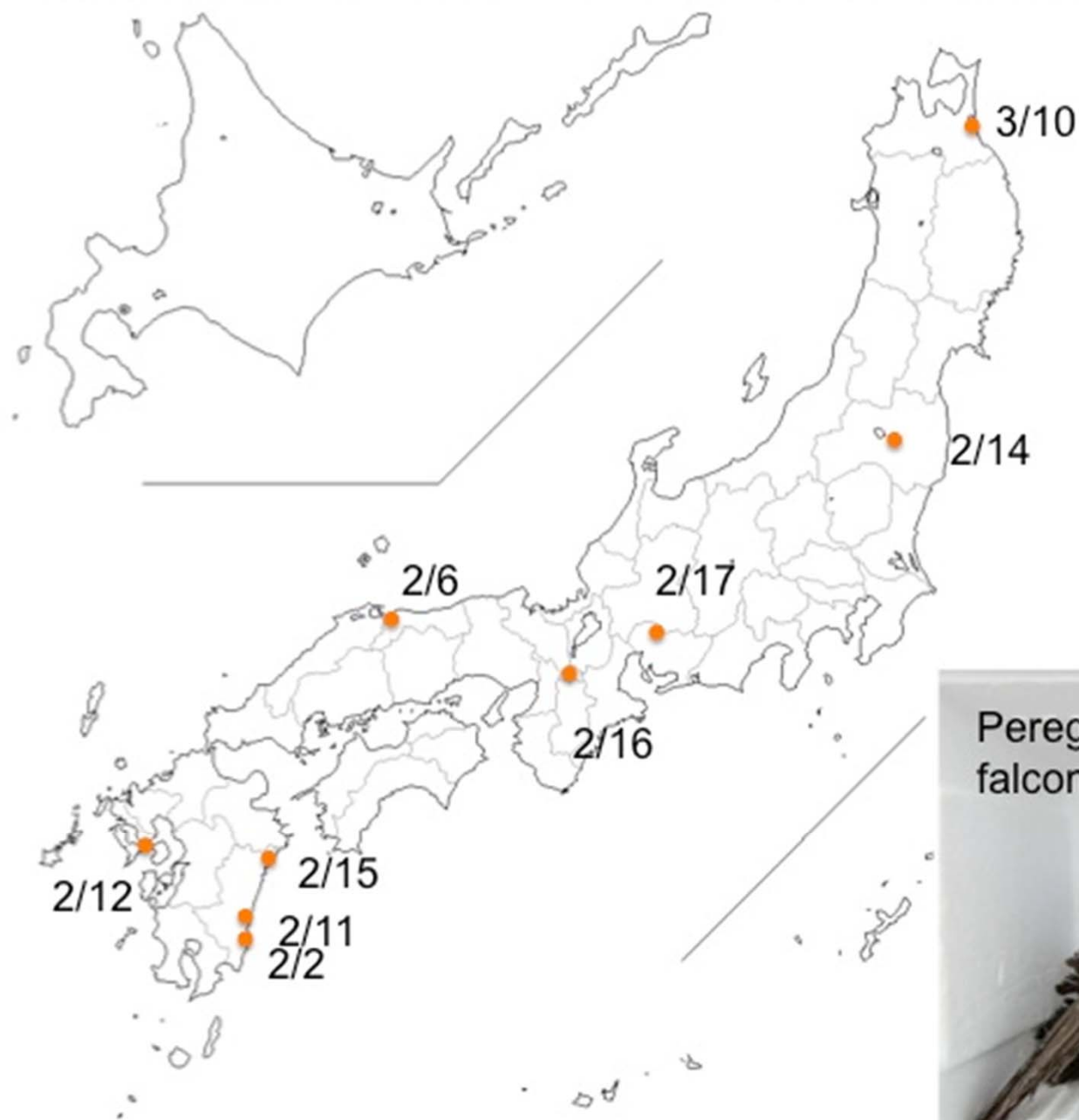
Just 7 hooded cranes were H5N1 virus positive !

Hooded Crane →





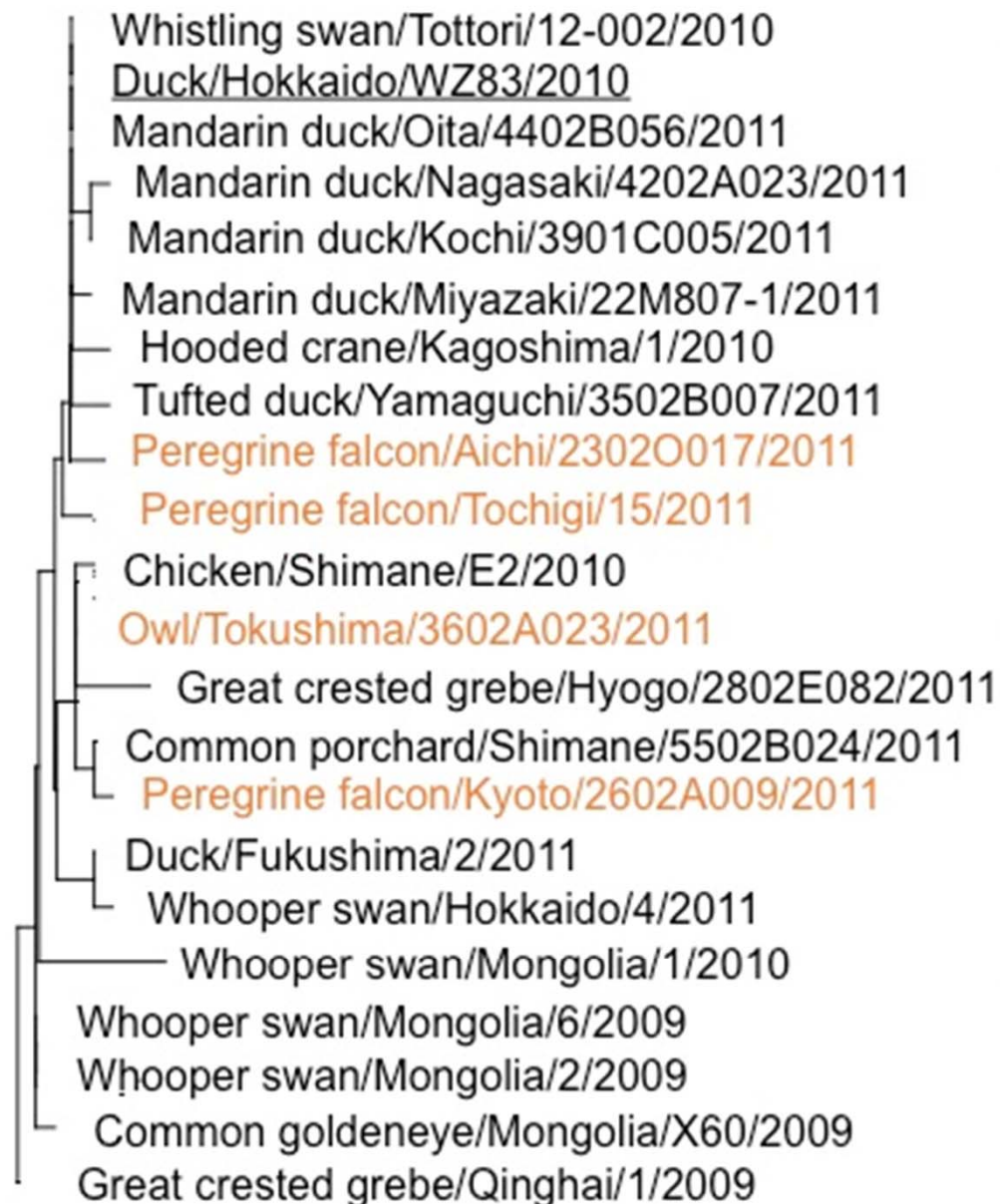
Distribution of peregrine falcon infected with H5N1 HPAI virus



Total 10 cases



Phylogenetic tree of the H5 HA genes of HPAI isolates



Peregrine Falcon

Taxonomy: *Falco peregrinus*

Ecology: Peregrine Falcon lives mostly along mountain ranges, river valleys, coastlines, and increasingly in cities.

Feed: Peregrine Falcon feeds almost exclusively on **medium sized birds** such as doves, **waterfowl**, songbirds, waders and pigeons.
Prey is struck and captured in mid-air.

Movement: It is usually a **permanent resident** in mild-winter regions.



Mandarin Duck



Taxonomy: *Anas galericulata*

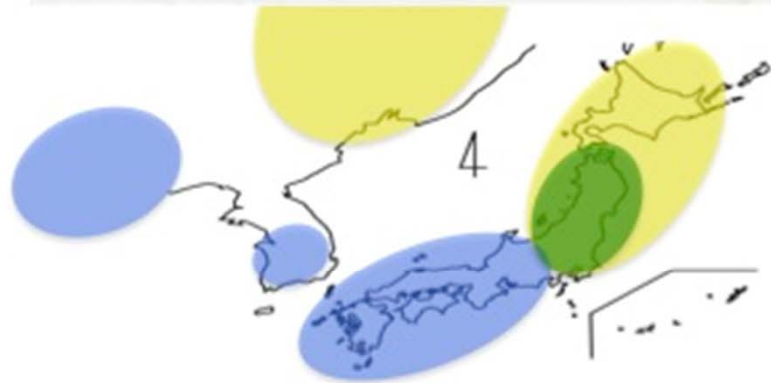
Distribution:

Scattered in SE USSR, NE China, Japan,
Introduced in S England.

Habitat:

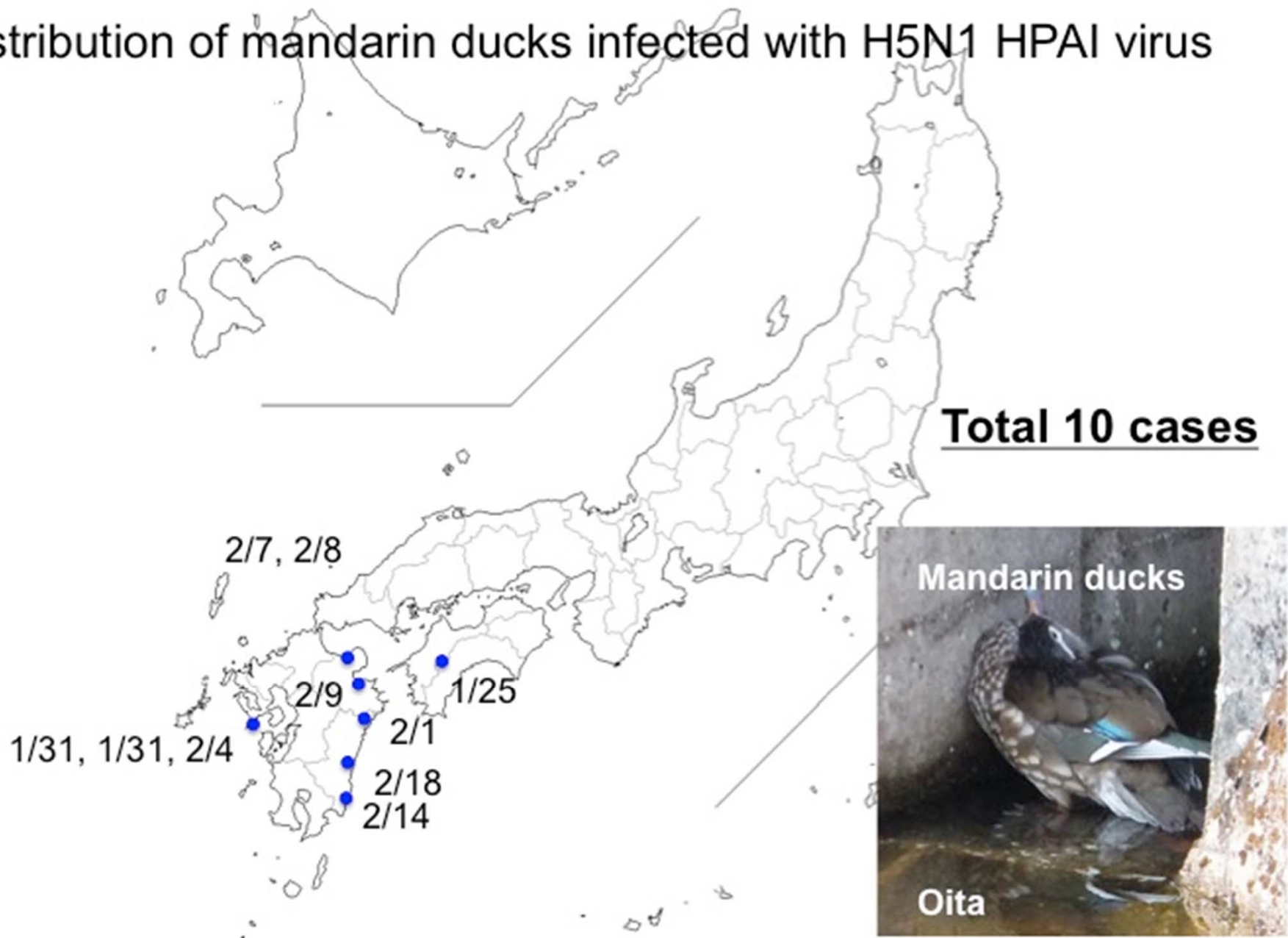
Inhabits **river valleys** with wooded
islands, **forest lakes** and ponds

Food: Seeds, particularly **nuts, acorns
and grain**, aquatic plants and animal
food (land snails, insects, fish).



Movements: Asian population essentially migratory, **wintering at lower latitudes** in eastern China. However, Japanese and British feral birds mostly sedentary.

Distribution of mandarin ducks infected with H5N1 HPAI virus



- Whistling swan/Tottori/12-002/2010
- Duck/Hokkaido/WZ83/2010
- Mandarin duck/Oita/4402B056/2011
- Mandarin duck/Nagasaki/4202A023/2011
- Mandarin duck/Kochi/3901C005/2011
- Mandarin duck/Korea/K10515/2011
- Mandarin duck/Miyazaki/22M807-1/2011
- Hooded crane/Kagoshima/1/2010
- Tufted duck/Yamaguchi/3502B007/2011
- Peregrine falcon/Aichi/2302O017/2011
- Peregrine falcon/Tochigi/15/2011
- Chicken/Shimane/E2/2010
- Owl/Tokushima/3602A023/2011
- Great crested grebe/Hyogo/2802E082/2011
- Common porchard/Shimane/5502B024/2011
- Peregrine falcon/Kyoto/2602A009/2011
- Duck/Fukushima/2/2011
- Whooper swan/Hokkaido/4/2011
- Whooper swan/Mongolia/1/2010
- Whooper swan/Mongolia/6/2009
- Whooper swan/Mongolia/2/2009
- Common goldeneye/Mongolia/X60/2009
- Great crested grebe/Qinghai/1/2009



渡り鳥の飛翔ルート

