

- New Flubird Database – Platform for Data Exchange and Knowledge Building in Avian Influenza Surveillance

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Outline:

➤ Background

- New FluBird

(Network for Early Warning of Influenza Viruses in Migratory Birds in Europe)

- Challenges

➤ Database

- Design / Technical aspects
- „Walk through“ / Data flow
- Integration of International Waterbird Census

➤ Outlook

- Upcoming developments

New FluBird - Objectives:

- Interdisciplinary approach
- Integration of different data sources
- Evidence based surveillance



Better understanding of avian influenza
ecology

Basis for predictive modelling

More effective risk assessment

Project participants:

CO	1	Erasmus MC (EMC)	NL
CO	2	Wetlands International (WI)	NL
CR	3	Friedrich-Loeffler-Institut (FLI)	D
CR	4	Kalmar University (Kalmar)	S
CR	5	Danish Institute for Food and Veterinary Research (DFVF)	DK
CR	6	National Veterinary Research Institute (NVRI)	PL
CR	7	National Veterinary Institute (NVI)	N
CR	8	Istituto Zooprofilattico Sperimentale delle Venezie (IZSV)	I
CR	9	Station Biologique de la Tour du Valat (Tour Valat)	F
CR	10	Veterinary Laboratories Agency (VLA)	GB
CR	11	Centre de coopération internationale en recherche agronomique pour le développement (CIRAD)	F
CR	12	Wildfowl and Wetland Trust (WWT)	GB
CR	13	Oiseaux Migrateurs du Paléarctique Occidental (OMPO)	F

Avian influenza (AI) in wild birds

Reservoir of AIV:

Birds of the genus
Anseriformes and
Charadriiformes (water
associated habitat)

[image removed]

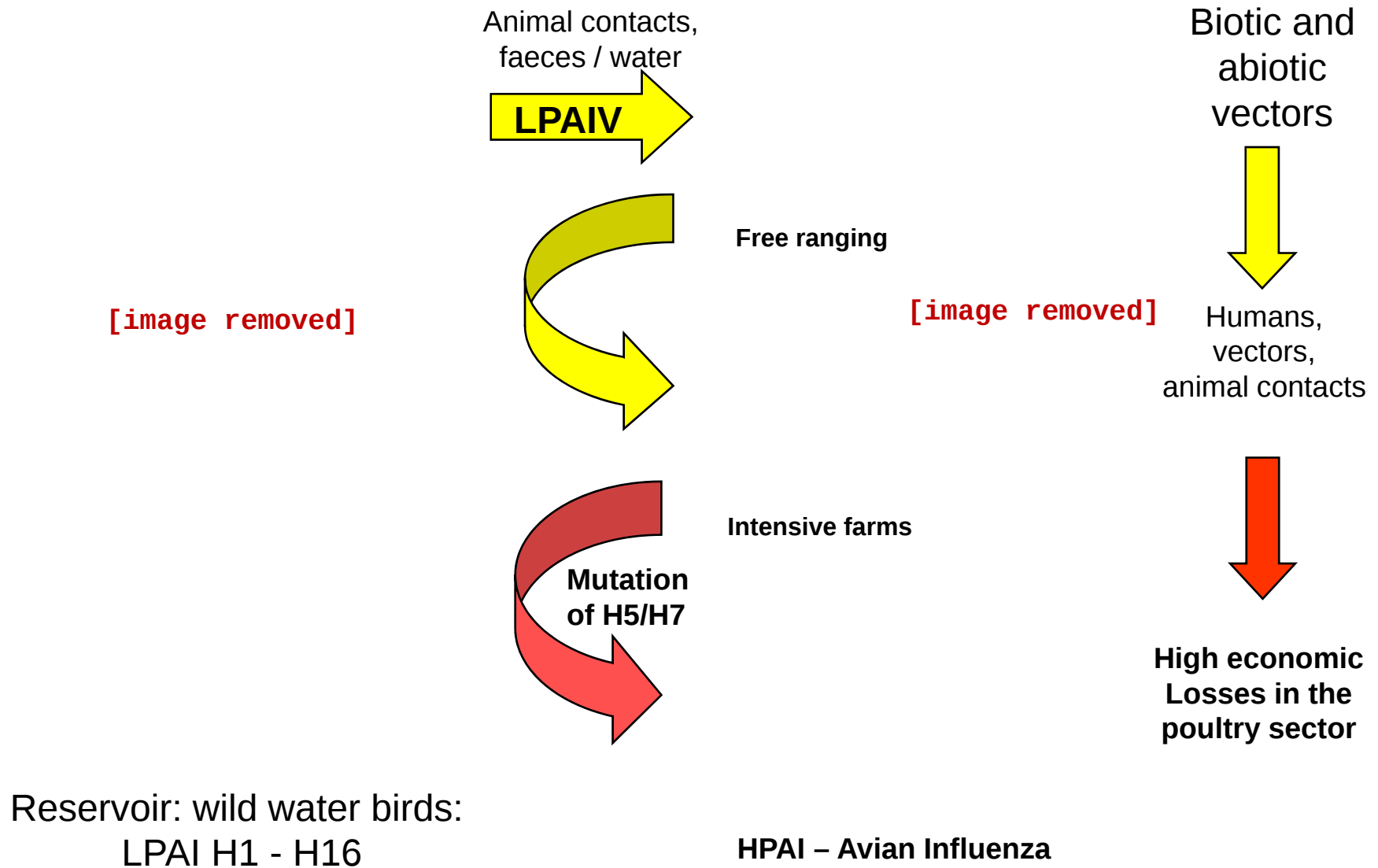
Isolation of all 16
HA- and 9 NA
subtypes

[image removed]

Virus are usually
low pathogenic

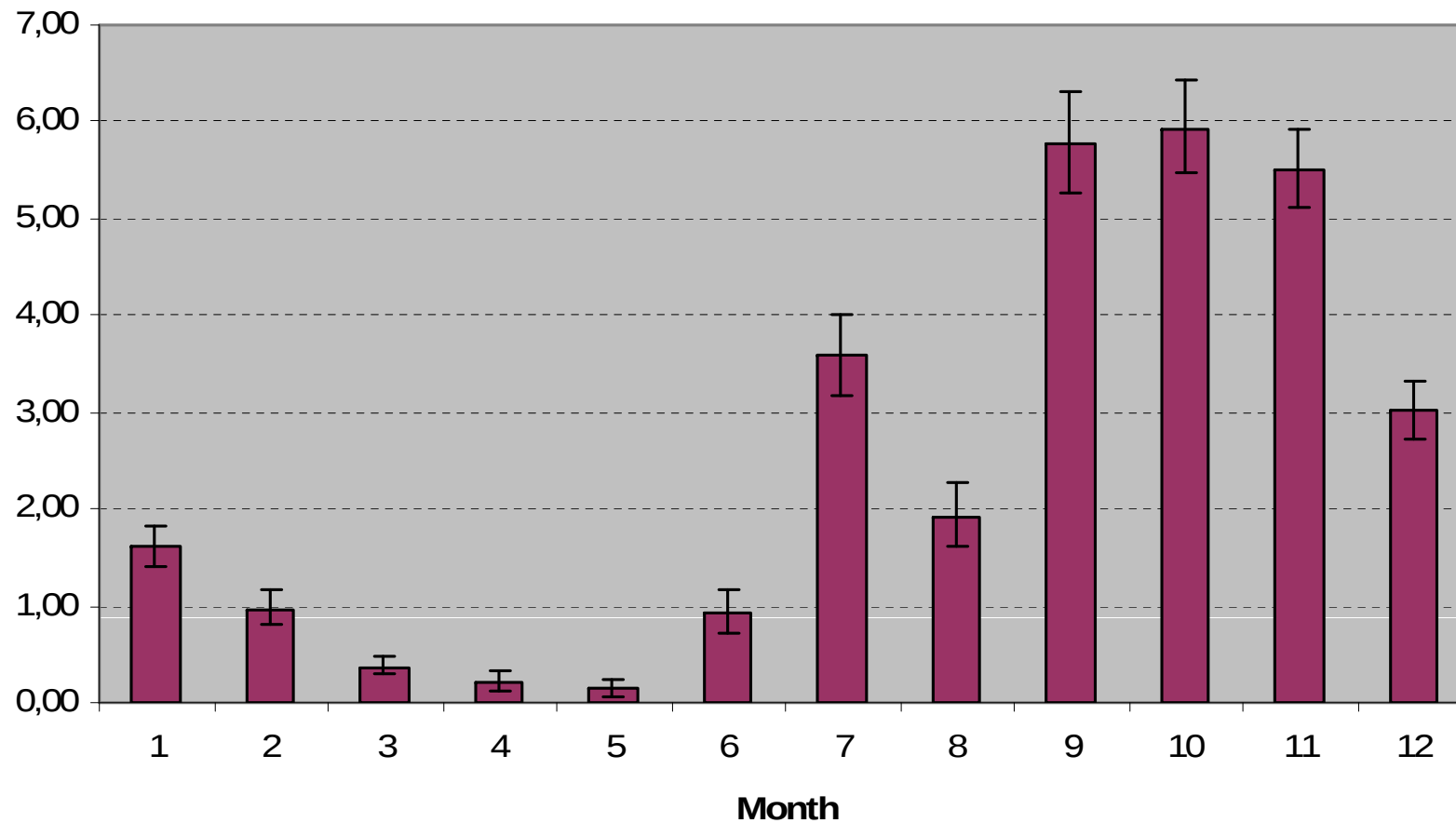
Genetic
reassortment

Transmission Cycle of AI



[image removed]

Year-round prevalence of LPAI

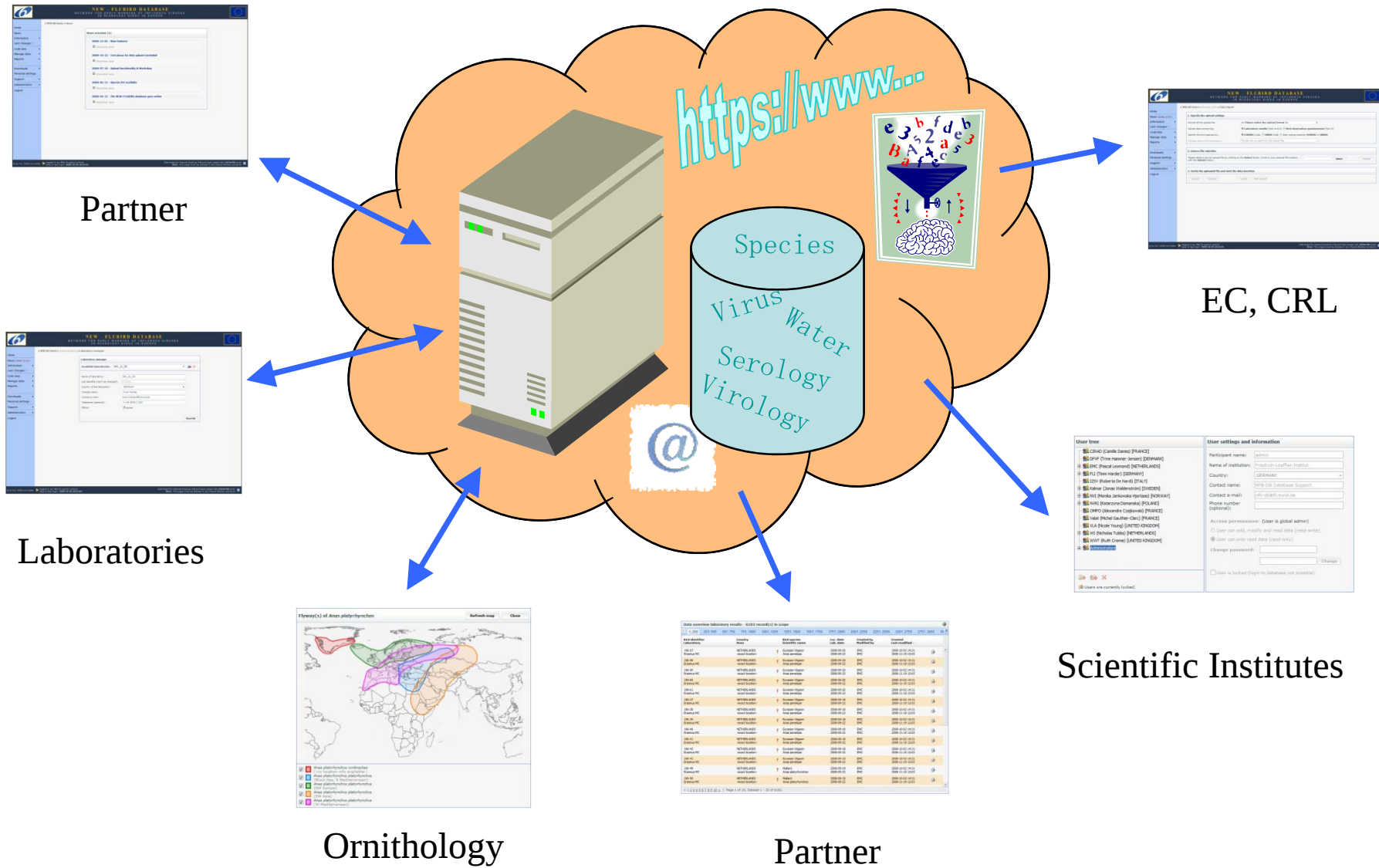


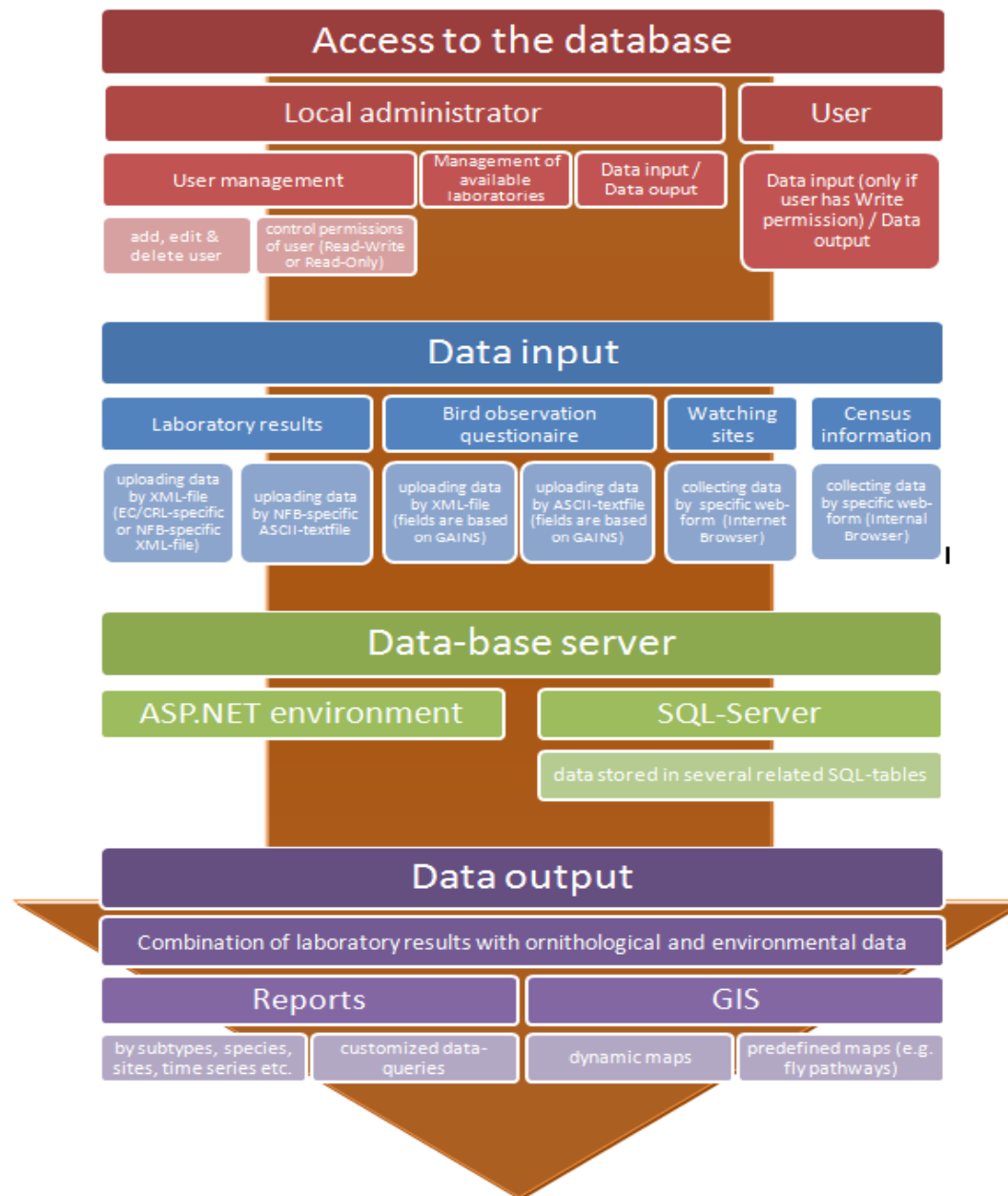
Challenges:

- Compatibility to external initiatives for possibility of data exchange (e.g. EC, Wetlands International)
 - Adapted database structure and upload interfaces
 - Code bridges, e.g. bird species codes (i.e. WBDB, EURING)
- Diverse and large user community
 - User manager: flexible, decentralized user account administration
 - User-based, configurable data access rights
 - Possibility of including “User groups”, e.g. External Advisory Board, EC, EFSA?
- Interactivity, Transparency, Integration
 - User friendly software modules for data interaction
 - Visualization via map server

Database structure:

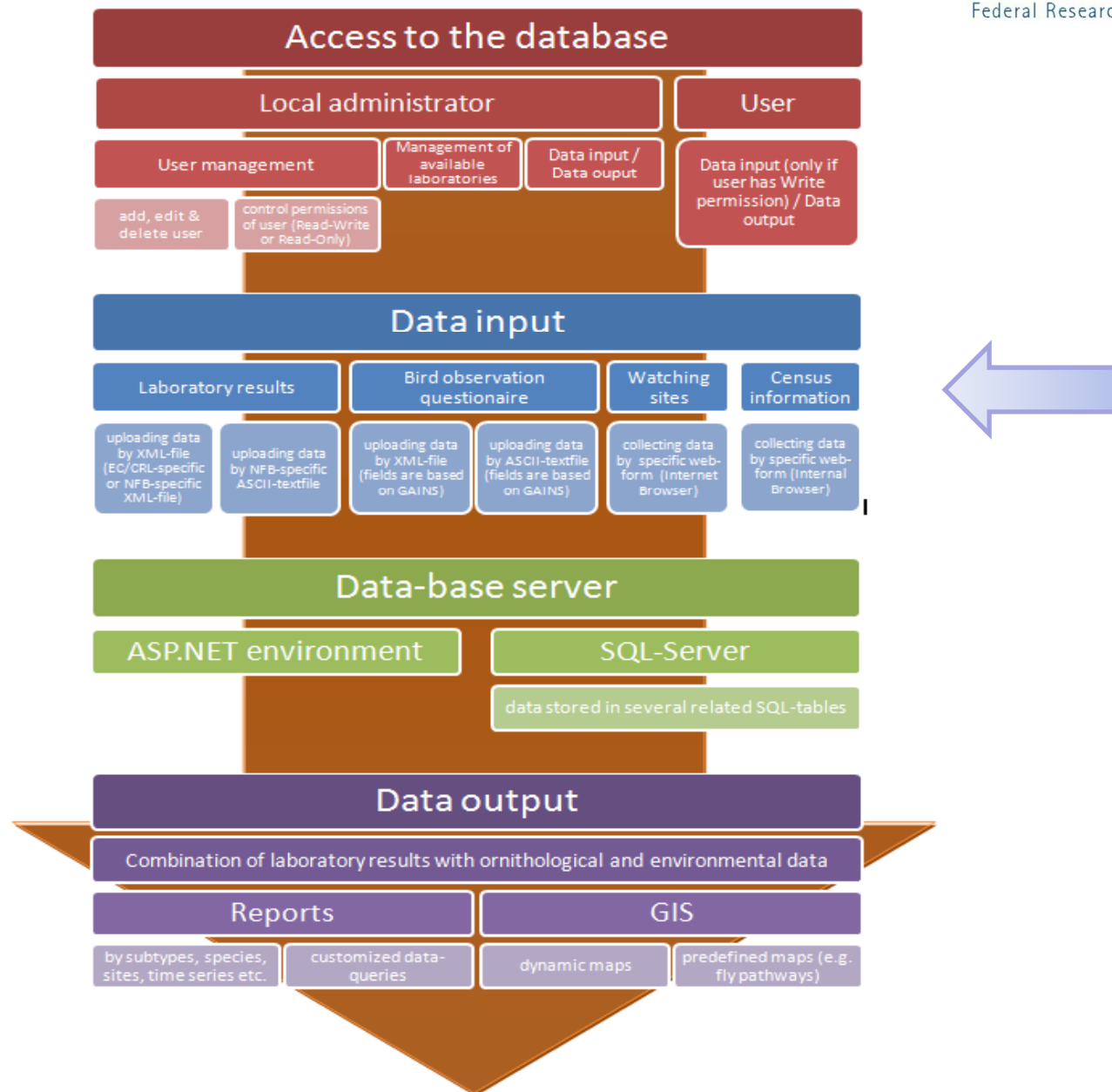
- Table 1a/b: Laboratory results
compatible with EC/CRL
- Table 2: Bird observation questionnaire
compatible with GAINS (e.g. census data)
- Table 3: Bird watching site description
compatible with GAINS (e.g. CSN tool)
- Table 4: Bird observation missions
background data (addition to table 2)





User manager:

User tree	User settings and information
- CIRAD (Camille Danes) [FRANCE] - DFVF (Trine Hammer-Jensen) [DENMARK] + EMC (Pascal Lexmond) [NETHERLANDS] + FLI (Timm Harder) [GERMANY] - IZSV (Roberta De Nardi) [ITALY] + Kalmar (Jonas Waldenström) [SWEDEN] + NVI (Monika Jankowska Hjortaas) [NORWAY] + NVRI (Katarzyna Domanska) [POLAND] - OMPO (Alexandre Czajkowski) [FRANCE] - Valat (Michel Gauthier-Clerc) [FRANCE] - VLA (Nicole Young) [UNITED KINGDOM] + WI (Nicholas Tubbs) [NETHERLANDS] - WWT (Ruth Cromie) [UNITED KINGDOM] + Administrators Users are currently locked	Participant name: admin Name of institution: Friedrich-Loeffler-Institut Country: GERMANY Contact name: NFB-DB Database Support Contact e-mail: nfb-db@fli.bund.de Phone number (optional): Access permissions: (User is global admin) ☐ User can add, modify and read data (read-write) ☒ User can only read data (read-only) Change password: Change ☐ User is locked (login to database not possible)



AI-DB (Wildvogelmonitoring) - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse <http://ai-db.fli.bund.de/Login.aspx?ReturnUrl=%2fDefault.aspx> Wechseln zu

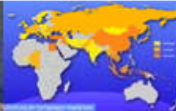
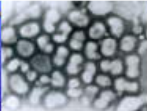
Links Google Deutsche Bank Fliegenfischer - Forum ! DSL-Konfiguration Microsoft Outlook Web Access

 Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz

**Wildvogelmonitoring
Datenbank
zur Aviäre Influenza**

FRIEDRICH-LOEFFLER-INSTITUT
FLI
Bundesforschungsinstitut für Tiergesundheit

**Willkommen auf den Internetseiten der Wildvogelmonitoring Datenbank
zur Aviären Influenza**

Anmelden

Benutzername:

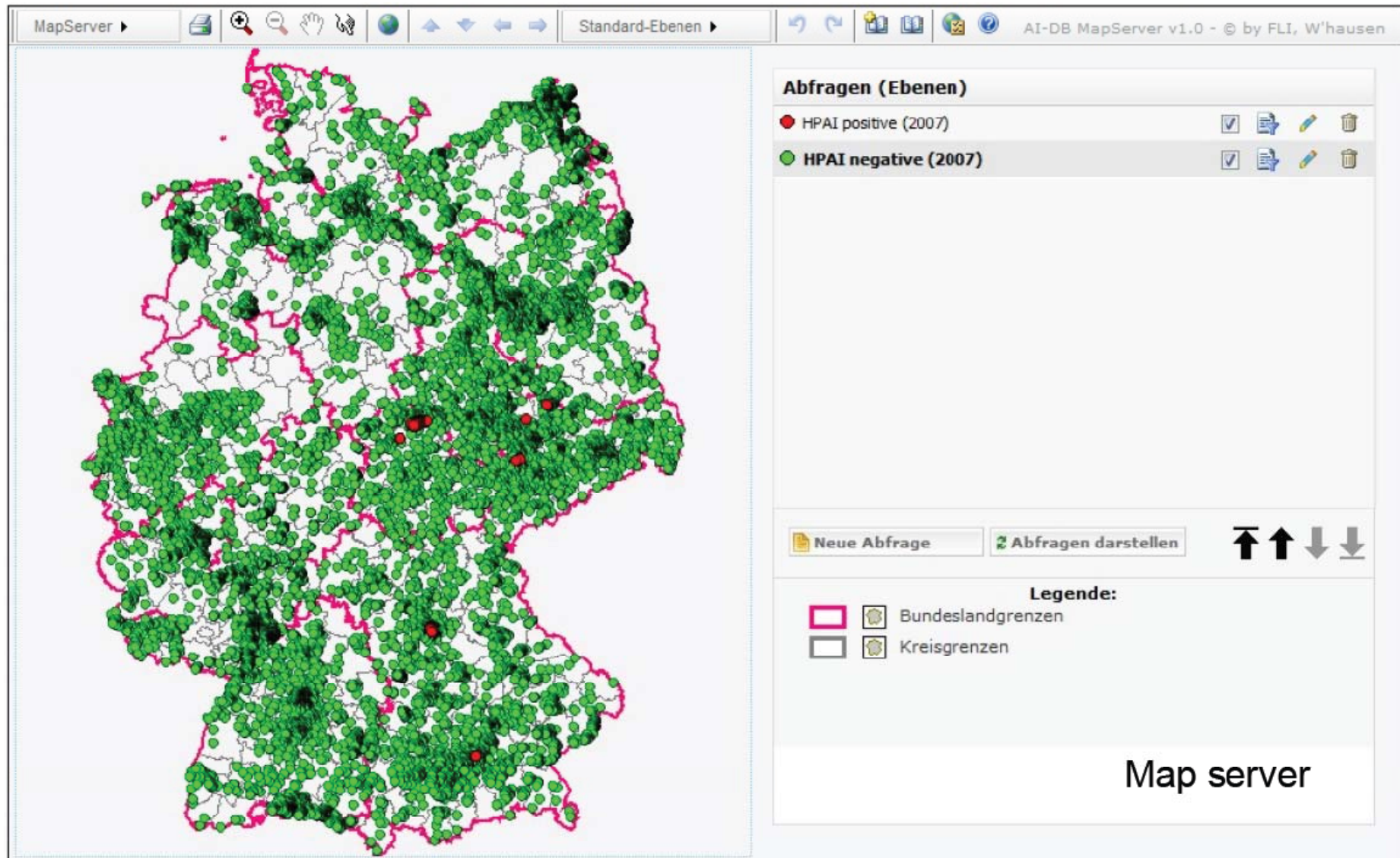
Kennwort:

Anmelden

(c) FLI, 2006

Optimiert für IE7 und eine Auflösung von 1024x768

Fertig Internet



German surveillance database

Number of Records per year and status of birds

Bird status	Active sampling			Passive sampling		
	alive	hunted	Pos. H5N1	dead	sick	Pos. H5N1
2006	5.800	1.136	0	23.104	40	316
2007	15.819	1.782	1	7.892	101	331
2008	14.454	2.883	0	4.744	35	0
2009	6.430	648	1	2.389	53	0

Report of all investigations of wild birds regarding AI in charge of the Federal States to the EC by FLI

1. XML EU-Report

Datum von: bis: oder

zusätzliche Parameter (SQL-Query):

2.

```
<?xml version="1.0" encoding="UTF-8" ?>
- <content>
- <Report schemaurl="AIWB-0.10.xsd" submissionNumber="DE200907_
- <Metas>
- <DB xmlTable="t_xml_bodi_soap" attachTable="t_soap_attach"
- <errorList att_used_for_autogeneration_in_pdf="1" />
- </Metas>
- <BirdCase id="DEU0302PA 20090663">
- <LaboratoryID>DEU0302</LaboratoryID>
- <RingNumber>unapplicable</RingNumber>
- <StatusOfBird>found dead</StatusOfBird>
- <BirdSpecies>
- <EuringCode>05910</EuringCode>
- </BirdSpecies>
- <BirdLocalisation>
- <LocalisationDate>2009-07-01</LocalisationDate>
- <NUTSCode CodeType="NUTS 5">04011000</NUTSCode>
- <AreaStatus>area not under restriction</AreaStatus>
- </BirdLocalisation>
- <Sample id="ID-1">
- <ReceptionDate>2009-07-01</ReceptionDate>
- <SampleType>tissue</SampleType>
- <PCRTTest>
- <Type>Real-time RT-PCR</Type>
- <Result>negative</Result>
- </PCRTTest>
- <VirusIsolation>not performed</VirusIsolation>
- <SubType>
- <Subtype>Pathogenic</Subtype>
- <HSubtype>H not de</HSubtype>
- <NSubtype>N not</NSubtype>
- </SubType>
- </Sample>
- </BirdCase>
```

3.

XmlGate

XML File selection Page

Select the XML file you want to validate.

File:

Submission for tests only ☐

Real data submission ☐

© DG SANCO 2006

Data upload dialog: lab data

1. Specify the upload settings

Format of the upload-file: << Please select the upload format >>

Upload data concerning: ☒ **Laboratory results** (Part Ia & b) ☐ **Bird observation questionnaire** (Part II)

Identify the bird species by: ☒ **EURING-Code** ☐ **WBDB-Code** ☐ Both coding-systems (**EURING** or **WBDB**)

Allocate data to this laboratory: The lab-key is read from the import-file.

2. Source file selection

Please select a source upload-file by clicking on the **Select** button. Confirm your entered file location with the **Upload** button.

Select

Upload

3. Verify the uploaded file and start the data insertion

Import

Continue

Logfile

New upload

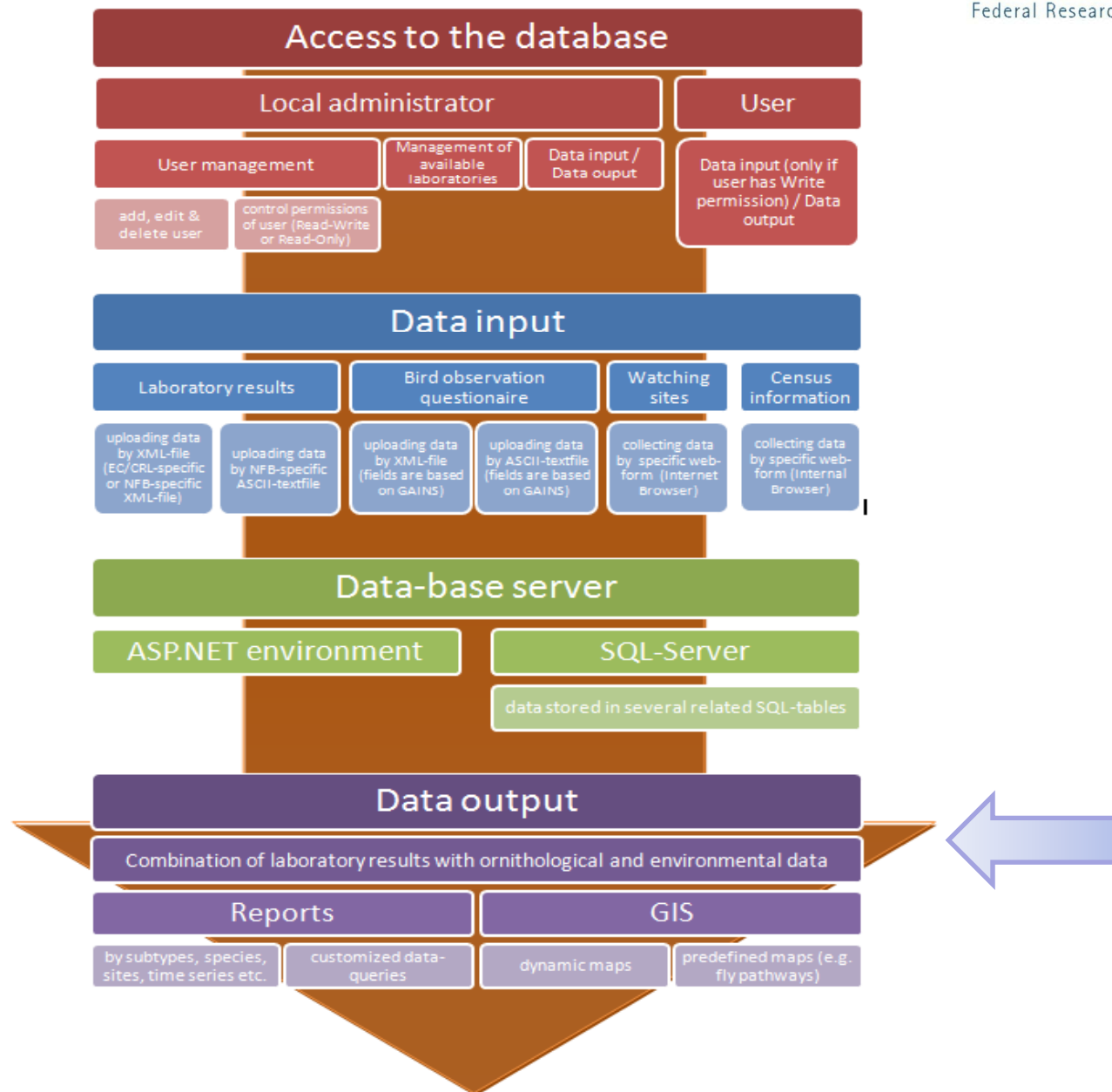
„Upload“ Files:

XML-File

```
<?xml version="1.0" encoding="UTF-8" ?>
- <content>
- <Report schemaurl="NFB-DB1_XML_labres.xsd" submissionNumber="TestLabResults2008/01">
  - <BirdCase Bird_ID="2007/12345678Test1">
    <Country>DE</Country>
    <Lab>FLIL001</Lab>
  - <Location>
    - <XYCoordinates>
      <LatX>12.348993</LatX>
      <LongY>53.059951</LongY>
    </XYCoordinates>
  </Location>
  - <DateType>
    <Date>2007-12-07</Date>
  </DateType>
  <Species>01860</Species>
  <Specimen>1</Specimen>
  <BoScore>3</BoScore>
  <Age>1</Age>
  <Sex>1</Sex>
  <Tag>B1A2345F234Z567</Tag>
  - <Sample Sample_Nr="1">
    <Sample_Type>1</Sample_Type>
    <Infa>2</Infa>
```

ASCII text file

```
COUNTRY;LAB;BIRD_ID;SITEKEY;AREA;LAT_X;LONG_Y;DATE;LAB_DATE;SPECIES;SPECIMEN;BOSCORE;AGE;SEX;TAG;SAMPLE_NR;
DE;FLIL001;T249324234243;;;12.3456;53.0546;2007-12-07;;01234;1;3;0;0;B1A2345678;1;1;2;0;0;0;0;0;0;""
NL;FLIL002;T249324234244;;;12.3456;53.0546;;2007-12-07;01234;1;3;0;0;B1A2345678;1;1;2;0;0;0;0;0;0;""
NL;FLIL002;T249324234244;;;12.3456;53.0546;;2007-12-07;01234;1;3;0;0;B1A2345678;2;3;2;0;0;0;0;0;0;""
IT;FLIL003;T249324234245;;;12.3456;53.0546;;2007-12-07;01234;1;3;0;0;B1A2345678;1;1;2;0;0;0;0;0;0;""
```



Data access and digestion:

- Mining of data on basis of complex queries
 - User friendly interface to handle queries; stored for re-use
 - Any database field can be selected as search criteria
 - single filter conditions can be flexibly combined by 'AND' or 'OR' logical links
 - Linking of different data types based on shared criteria
(e.g. spatial, temporal, species related)
- Output of data / Visual integration
 - Predefined reports, automatically generated
 - Presentation of user defined queries in table view
 - Visualization of query-results in map-server, e.g. combined with selected flyway map layer, census data, etc.

» NFB-DB Home » Reports » Laboratory results » Data overview

Specify species filter - Windows Internet Explorer bereitgestellt von FLI

https://nfb-db.fli.bund.de/Tools/SpeciesFilter.aspx?Cat=0

Build bird species filter

Species filter collection [+]

- Family: **Anatidae** [+]
 - Genus: **Branta** [+]
 - Genus: **Anas** [+]
 - Anas platyrhynchos (Mallard)

Note that all species belonging to an activated (checked) taxon will be added to the filter collection

* click 'Apply' to save permanently

Bird species query tool - Windows Internet Explorer bereitgestellt von FLI

https://nfb-db.fli.bund.de/Tools/SpeciesSelection.aspx?Mode=2&Cat=0&sf=NEW_SPC8

Bird species selection

Search species by keyword(s):

Type of search:

Sort the result list by:

Result list options: ☒ preselect High Risk species ☐ use advanced

Results (82)

Accipiter gentilis
Accipiter nisus
Aquila chrysaetos
Aquila clanga
Aquila heliaca
Buteo buteo
Buteo lagopus
Circus aeruginosus
Haliaeetus albicilla
Milvus migrans
Milvus milvus
Anas acuta
Anas clypeata
Anas crecca
Anas penelope
Anas platyrhynchos
Anas querquedula
Anser albifrons
Anser anser
Anser brachyrhynchus
Anser erythropus
Anser fabalis

☒ indicates the High Risk species (HR82)

» NFB-DB Home » Reports » Laboratory results » Data overview

Data overview laboratory results - Filter selection

Build user filter - Windows Internet Explorer bereitgestellt von FLI
https://nfb-db.fli.bund.de/Tools/UserFilter_Builder.aspx?Cat=0&RecordID=22

<< Date range >>

Build or write user-defined filter

Filter description: Test filter

Use Query Builder Use my own SQL-query

Main filter: Result of molecular Influenza-A screening assay is equal (=) 'positive' ☐

Additional OR-condition(s): (optional)

Additional OR-condition
Click here to add new OR-condition to selected filter.

* last added OR-condition (click 'Apply filter' to save)

Save Back

Formulation of the user-defined filter condition

- 1. Select the database field:**
Result of molecular Influenza-A screening assay
- 2. Choose the comparison operator:**
is equal (=)
- 3. Enter/select the comparative value:**
positive
<< Please select a value >>
positive
negative
not performed (default)
inhibited (not analysable)

Apply

Internet | Geschützter Modus: Inaktiv 100%

» NFB-DB Home » Reports » Ornithological data » Overview of a

Overview of available flyways - 47 record(s) in scope

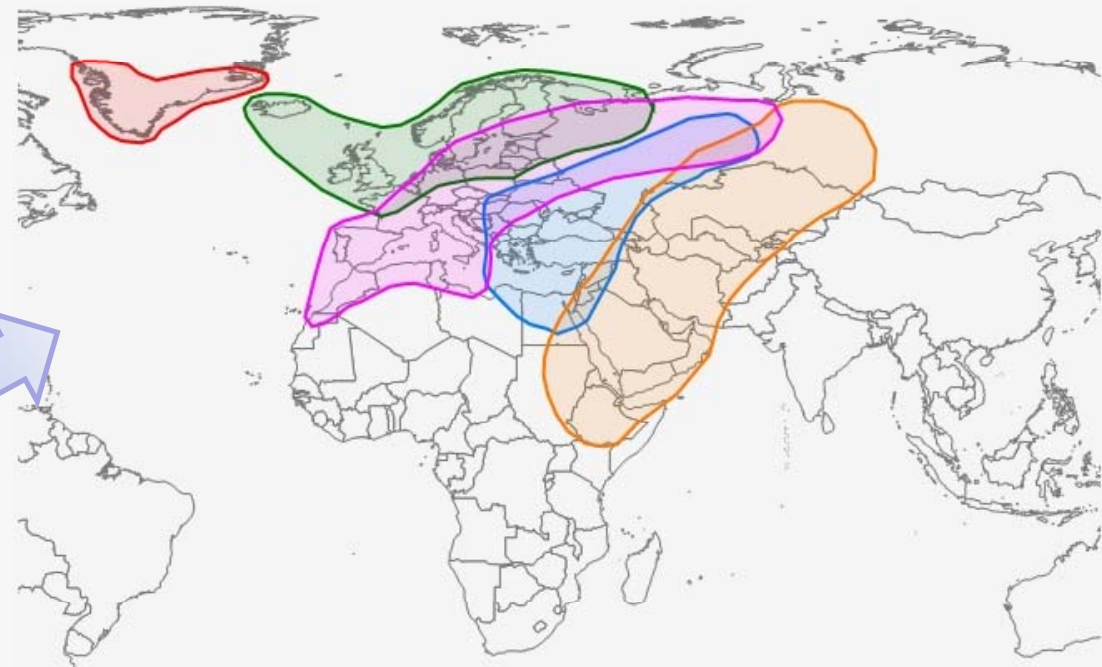
1..47

WBDB code	Family name of species	Bird species Scientific name
457	Anatidae	Northern Pintail <i>Anas acuta</i>
448	Anatidae	Northern Shoveler <i>Anas clypeata</i>
31027	Anatidae	Common Teal <i>Anas crecca</i>
429	Anatidae	Eurasian W... <i>Anas pe...</i>
435	Anatidae	Mallard <i>Anas platyrhynchos</i>
460	Anatidae	Garganey <i>Anas querquedula</i>
376	Anatidae	Greater White-fronted <i>Anser albifrons</i>
378	Anatidae	Greylag Goose <i>Anser anser</i>
374	Anatidae	Pink-footed Goose <i>Anser brachyrhynchus</i>
377	Anatidae	Lesser White-fronted <i>Anser erythropus</i>
375	Anatidae	Bean Goose <i>Anser fabalis</i>
472	Anatidae	Common Pochard <i>Aythya ferina</i>
480	Anatidae	Tufted Duck <i>Aythya fuligula</i>
386	Anatidae	Brent Goose <i>Branta bernicla</i>

Flyway(s) of *Anas platyrhynchos*

Refresh map

Close

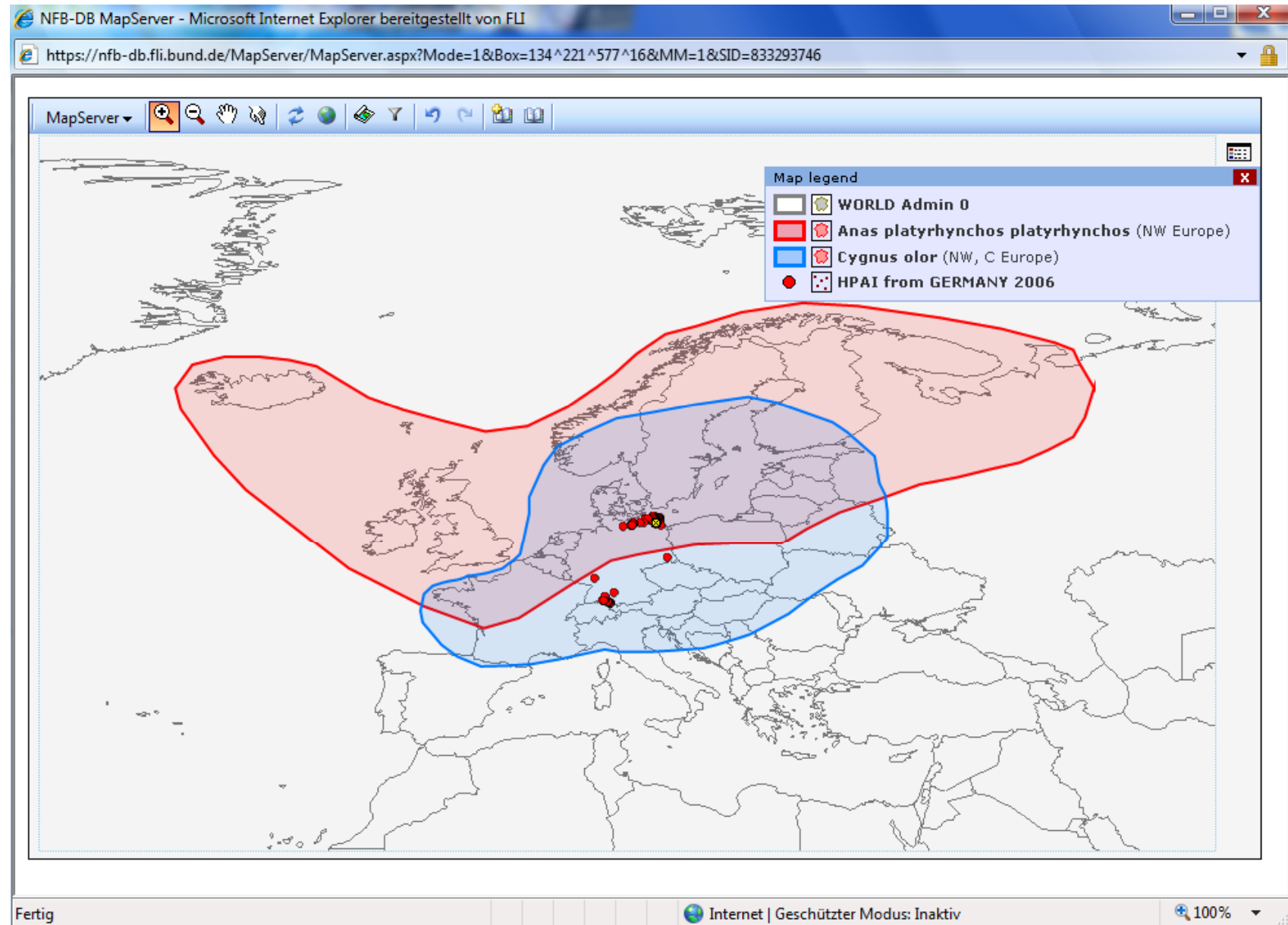


- ☒ ■ *Anas platyrhynchos conboschas* (<no location info available>)
- ☒ ■ *Anas platyrhynchos platyrhynchos* (Black Sea, E Mediterranean)
- ☒ ■ *Anas platyrhynchos platyrhynchos* (NW Europe)
- ☒ ■ *Anas platyrhynchos platyrhynchos* (SW Asia)
- ☒ ■ *Anas platyrhynchos platyrhynchos* (W Mediterranean)

< 1 2 > | Page 1 of 2, Dataset 1 - 25 of 47.

Clicking the right-hand symbol to open the flyway maps.

! indicates a High Risk species



Spatial filter manager - Microsoft Internet Explorer bereitgestellt von FLI

https://nfb-db.fli.bund.de/Tools/SpatialFilter_Manager.aspx

Set spatial filter for...

...Flyway(s) ...Watching Site(s) ...Single point with buffer

Please note that queries containing spatial joins (here: testing which sample events are contained in a defined area / polygon) is computationally intensive and can take a while!

☒ Use watching site's geographical coordinates (point) ☐ Use polygons associated with watching sites

Search buffer (radius): 50 (km) or choose a pre-defined buffer: << choose a value >>

FRANCE
CAMARGUE (CAMARGUE, long: 4.556734 lat: 43.544152)

GERMANY
Oder-valley at Lake Felchow (Brandenburg) (DEU2_BB, long: 14.135000 lat: 53.052500)
Ruegen on Isle of Koos (Mecklenburg-Northern Pomerania) (DEU1_MP, long: 13.403056 lat: 54.355000)

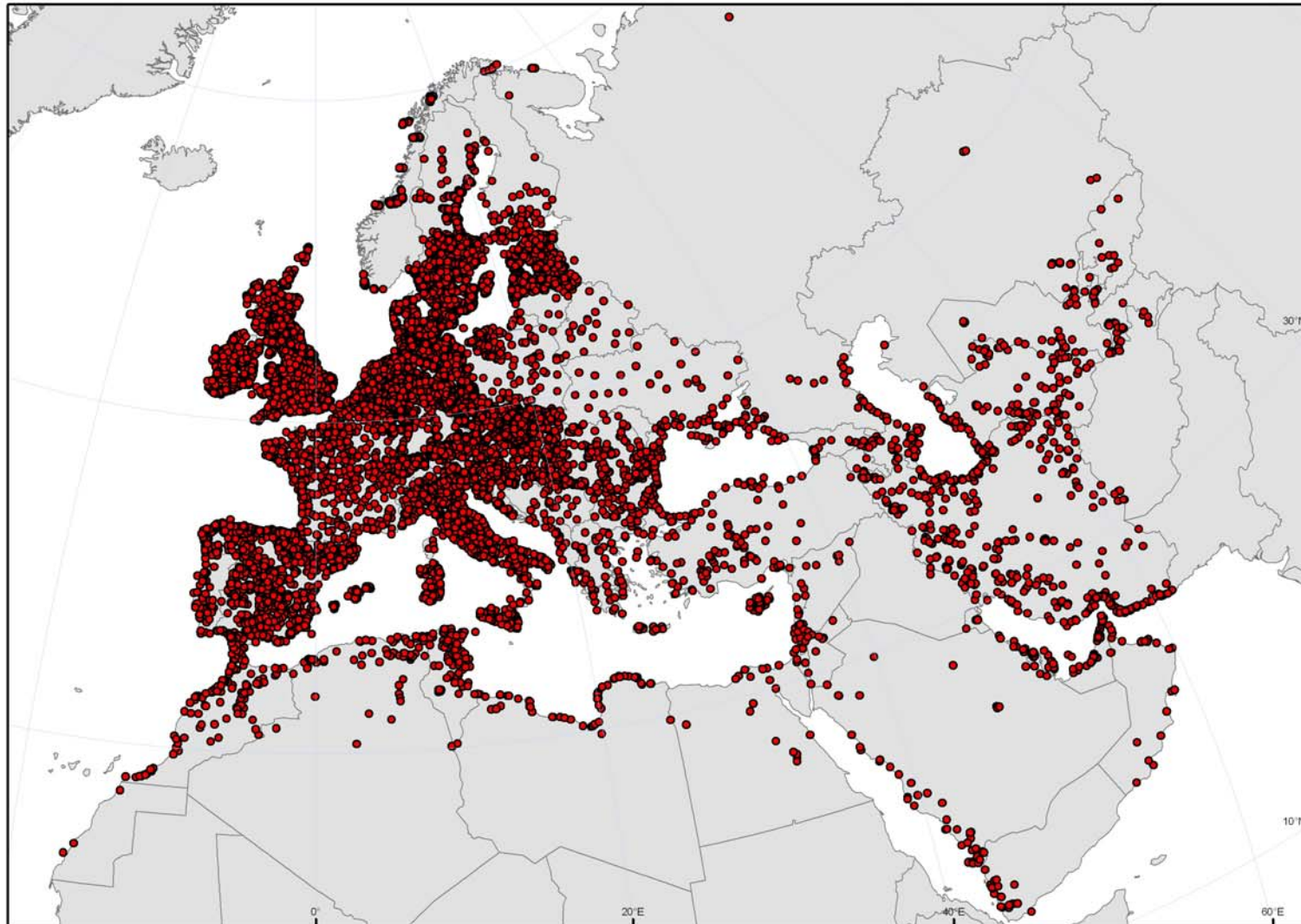
POLAND
Jeziorsko reservoir (PL01, long: 18.633333 lat: 51.700000)
Pawlowice Vistula river valley (PL03, long: 21.675000 lat: 51.606667)
Vistula river mouth (PL02, long: 18.940833 lat: 54.355000)

To select multiple watching sites, please click on the list-items while keeping the CTRL-key on your keyboard pressed.

Set spatial filter Deactivate spatial filter ☐ Use 'spatially not within' mode Close

Fertig Internet | Geschützter Modus: Inaktiv 100%

IWC sites in WP & SW Asia 1990 - 2007:



IWC data selection by area

» NFB-DB Home » Reports » Data analysis » IWC data viewer

Browse for IWC (International Waterbird Census) data [non-public beta]

Get IWC data using filters Get IWC data of a known site (SiteCode) [IWC data viewer (21)]

Show species for selected areas Show areas for selected species

- GERMANY
- SPAIN
- SWEDEN
- BELGIUM
- CZECH
- ITALY
- SLOVAKIA
- IRELAND
- FRANCE
- LATVIA

1. >>

Click here to
apply the
selected country.

- Baden-Württemberg [DE1]
- Bayern [DE2]
- Berlin [DE3]
- Brandenburg [DE4]
- Bremen [DE5]
- Hamburg [DE6]
- Hessen [DE7]
- Mecklenburg-Vorpommern [DE8]
- Niedersachsen [DE9]
- Nordrhein-Westfalen [DEA]

2. >>

Click here to
show all species
within the
selected region
(s).

☐ by name ☒ by number of sites ☒ Nuts 1 ☐ Nuts 2 ☐ Nuts 3 ☐ Admin 1

Species selection:

To select multiple bird species, please click on the list-items while keeping the CTRL-key on your keyboard pressed.

Species found: 71

☒ High Risk species

- Accipitridae**
 - Accipiter gentilis (Northern Goshawk)
 - Accipiter nisus (Eurasian Sparrowhawk)
 - Buteo buteo (Common Buzzard)
 - Circus cyaneus (Northern Harrier)
 - Haliaeetus albicilla (White-tailed Eagle)
- Alcedinidae**
 - Alcedo atthis (Common Kingfisher)
- Anatidae**
 - Aix galericulata (Mandarin Duck)
 - Aix sponsa (Wood Duck)
 - Anas acuta (Northern Pintail)
 - Anas americana (American Wigeon)

Narrow down species list:

Hover over the help-symbol to get more information.

☐ High Risk species only

Filter based on statistical parameters:

Number of years greater or equal (>=) 2

Sort by:

Number of years descending

3. Get data

☒ display additional location info ☒ display species info ☒ use static header in data viewer

IWC – Tabular presentation of count aggregates

» NFB-DB Home » Reports » Data analysis » IWC data viewer

Browse for IWC (International Waterbird Census) data [non-public beta]

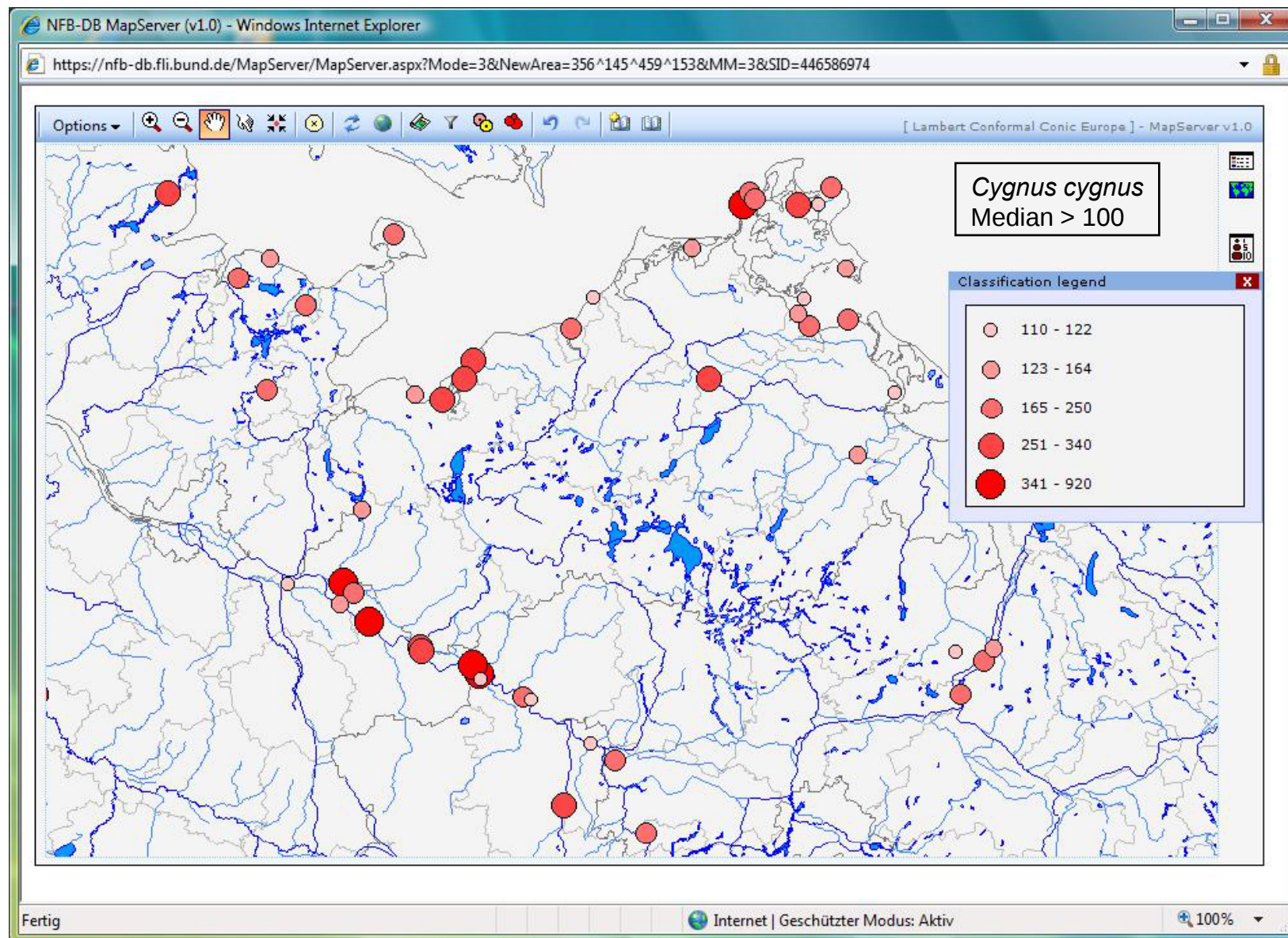
Get IWC data using filters Get IWC data of a known site (SiteCode) [IWC data viewer (1785)]

⚠ The overview contains a great number of IWC datasets. Please use the filter settings (e.g. selection of one species or one region etc.) to optimize the navigation-handling within the result table.

Site code Site name	Scientific name Common name	Country Region name ^[1]	Years Sites	Min Max	Mean Median	Q1 Q3	D1 D2
247300920 Bodensee-Obersee-D	Anas platyrhynchos * Mallard	GERMANY <not available>	10 10	3794 7796	5695.500 5712.000	4756.000 6466.000	4266.000 7183.000
247400900 Bodensee-Untersee-D	Anas platyrhynchos * Mallard	GERMANY <not available>	10 10	1206 3850	2404.300 2278.500	1797.000 3158.000	1378.000 3728.000
267101 Elbe: Geesthacht bis Zollenspieker	Anas platyrhynchos * Mallard	GERMANY Hamburg	9 9	265 1024	500.111 322.000	266.000 644.000	265.000 1024.000
267103 Norderelbe: Holzhafen bis Kaltelhofe	Anas platyrhynchos * Mallard	GERMANY Hamburg	9 9	96 969	334.111 262.000	181.000 329.000	96.000 969.000
267106 Mühlenberger Loch	Anas platyrhynchos * Mallard	GERMANY Hamburg	9 9	45 1301	667.667 657.000	378.000 776.000	45.000 1301.000
371008 Peenestrom: Peenebrücke Wolgast - Lassan - Quilitz - Warthe - Möw	Anas platyrhynchos * Mallard	GERMANY Mecklenburg-Vorpommern	9 9	213 3250	1700.667 1853.000	580.000 2505.000	213.000 3250.000
371004 Gothensee, Kachliner See	Anas platyrhynchos * Mallard	GERMANY Mecklenburg-Vorpommern	9 9	1 282	95.222 40.000	2.000 210.000	1.000 282.000
371005 Rhein bei Wiesbaden- Amöneburg (Rhein-km 501.3- 502;5)	Anas platyrhynchos * Mallard	GERMANY Mecklenburg-Vorpommern	9 9	2 650	94.000 31.000	2.000 50.000	2.000 650.000
371055 Ostsee Prerow (Hohe Düne) - Ahrenshoop	Anas platyrhynchos * Mallard	GERMANY Mecklenburg-Vorpommern	9 9	3 610	279.556 246.000	130.000 387.000	3.000 610.000
170502 Großer Plöner See	Anas platyrhynchos * Mallard	GERMANY Schleswig-Holstein	9 9	352 1760	945.000 710.000	650.000 1275.000	352.000 1760.000
170701 Neustädter Binnenwasser	Anas platyrhynchos * Mallard	GERMANY Schleswig-Holstein	9 9	220 600	407.556 421.000	280.000 500.000	220.000 600.000
170704 Barkauer See	Anas platyrhynchos * Mallard	GERMANY Schleswig-Holstein	9 9	58 1200	318.222 200.000	66.000 320.000	58.000 1200.000

< 1 2 3 4 5 6 7 8 9 10 ... | Page 1 of 36, Dataset 1 - 50 of 1785.

- [1] Region names based on NUTS1-level, * indicates a High Risk species
- Abbreviations: Q1 = 1st Quartile, Q3 = 3rd Quartile, D1 = 1st Decile, D2 = 9th Decile

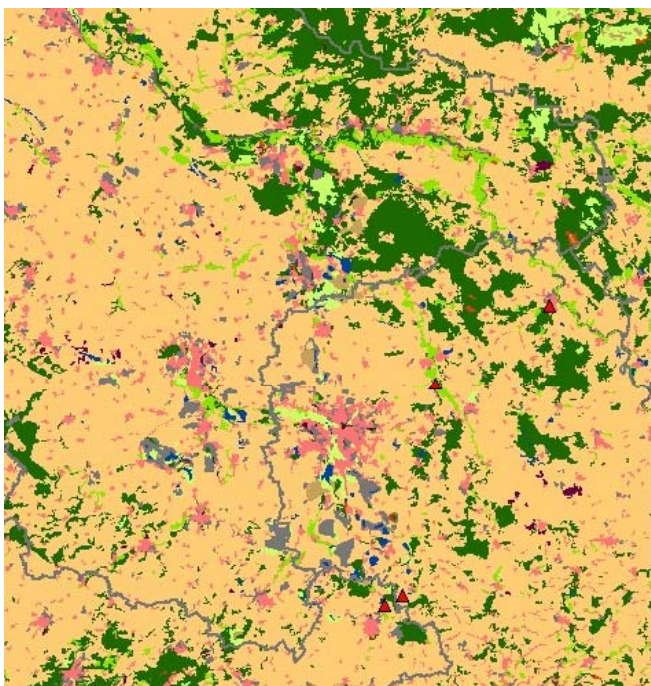


Integration of CLC data

- Corine Land Cover
 - 44 classes of land coverage
 - 1:100,000 mapping scale, minimum mapping unit 25 hectares
- Background data for Map Server
 - Aim: Visual integration by overlaying with e.g. lab result layers, ornithological data layers, etc.
- Coverage profiles per geographical / administrative unit
 - Appropriately grouped categories => coverage profiles
 - Aim: enable filtering of sample events based on adjoin environmental parameters
 - *Example query:*
 - *Select all M-PCR positive samples from areas with X % surface covered by wetlands, agriculture, etc.*

CORINE Landcover data

Map



Filter

Set CLC (CORINE Land Cover) filter

To configure an environmental profile for areas (administrative units) from which you wish to select laboratory results, please enter the corresponding surface percentage values below. At least one field has to contain a value greater than 0% for the CLC-filter to be activated (multiple entries are possible and will be connected by a logical AND). The entered values correspond to the respective land cover class's percentage of the total surface area of administrative units.

Land cover class

Percentage share based on ☒ NUTS level 3 ☐ NUTS level 5

Urban:	30 %	☒ Min ☐ Max ☐ Range
Grassland:	%	☒ Min ☐ Max ☐ Range
Pasture:	%	☒ Min ☐ Max ☐ Range
Agriculture:	25 %	☒ Min ☐ Max ☐ Range
Forest:	%	☒ Min ☐ Max ☐ Range
Scrub:	%	☒ Min ☐ Max ☐ Range
Sparsely vegetated areas: (steppes, tundra and badlands)	%	☒ Min ☐ Max ☐ Range
Wetland:	%	☒ Min ☐ Max ☐ Range

Browse for available CLC (CORINE Land Cover) data

Area selection and sorting [\[CLC data viewer \(2\) \]](#)

Region name ^[1] Region code (country-specific)	Urban Grassland	Pasture Agriculture	Forest Scrub	Wetland Water	Sparsely vegetated areas
LK Ortenaukreis 08317	7.45 % 0.03 %	10.20 % 32.84 %	46.69 % 1.88 %	0.00 % 0.90 %	0.00 %
LK Ostprignitz-Ruppin 12068	3.52 % 1.95 %	14.06 % 45.31 %	31.14 % 1.76 %	0.11 % 2.12 %	0.03 %

ally, please set the option to 'Range' and enter a start value followed by the end character. Example: 5-15.

ivate CLC filter

Reset fields

Close

Data records on NUTS level

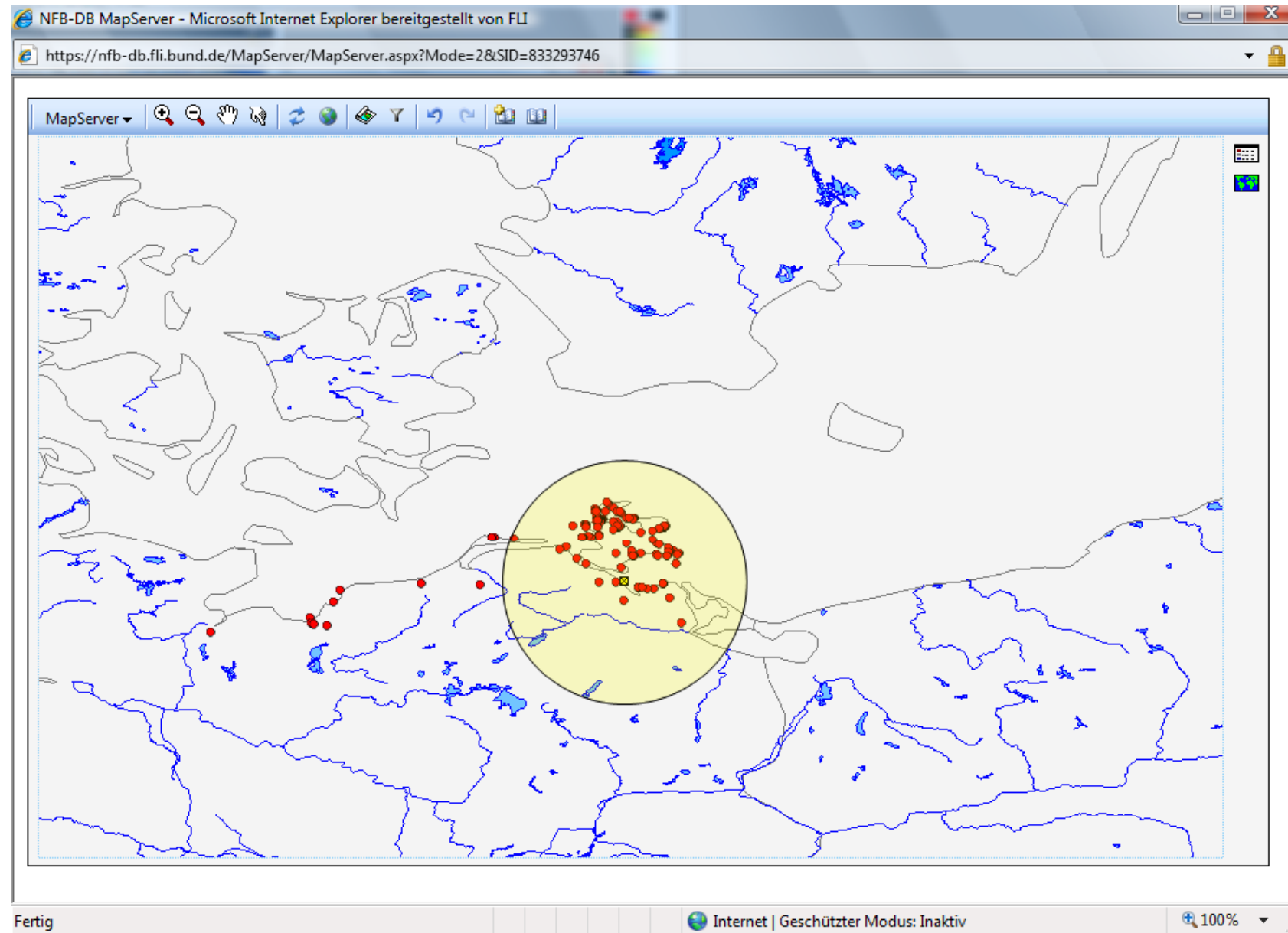
Activate/deactivate layer in map

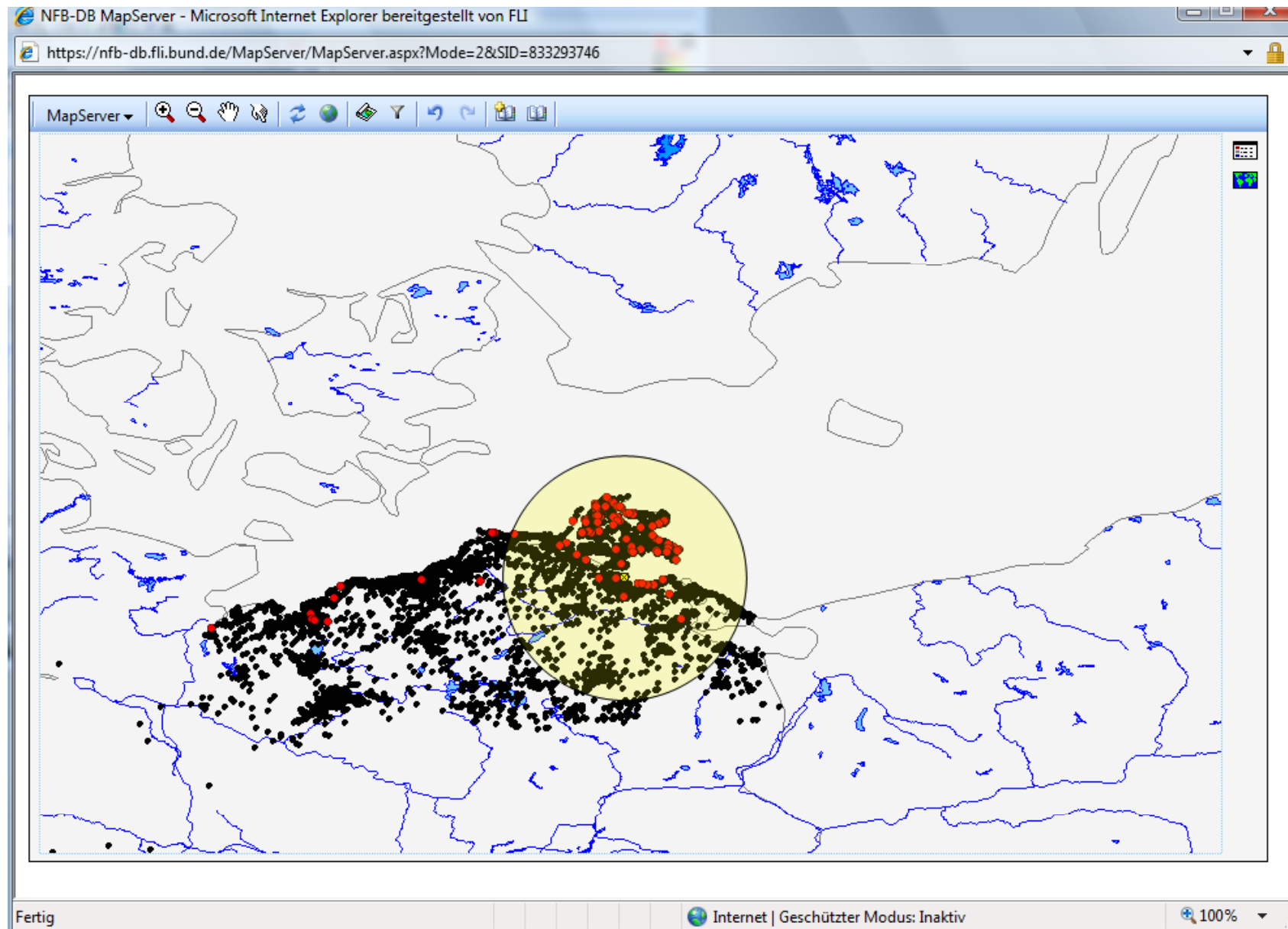


Activate or deactivate layer in map

- ☐ Roads
- ☐ Images
 - ☐ World background image
 - ☐ Elevation 1km (GTOPO)
- ☒ User queries (point layer)
- ☐ Flyway maps [0 flyway(s) selected]
 - ☒ Configure flyway list
 - ☐ Anatidae
 - ☒ Anas platyrhynchos
 - ☒ Anser erythropus
- ☐ Watching sites
 - GERMANY
 - ☒ Ruegen on Isle of Koos (Mecklenburg-Northern Pomerania) (DEU1_MP)
 - ☐ Oder-valley at Lake Felchow (Brandenburg) (DEU2_BB)
 - FRANCE
 - ☐ CAMARGUE (CAMARGUE)
 - POLAND
 - ☐ Jeziorsko reservoir (PL01)
 - ☐ Pawlowice Vistula river valley (PL03)
 - ☐ Vistula river mouth (PL02)

Save and reload map **Save and close** **Cancel**





Spatial filter manager - Microsoft Internet Explorer bereitgestellt von FLI

https://nfb-db.fli.bund.de/Tools/SpatialFilter_Manager.aspx

Set spatial filter for...

...Flyway(s) ...Watching Site(s) ...Single point with buffer

Please note that queries containing spatial joins (here: testing which sample events are contained in a defined area / polygon) is computationally intensive and can take a while!

☒ Use watching site's geographical coordinates (point) ☐ Use polygons associated with watching sites

Search buffer (radius): 50 (km) or choose a pre-defined buffer: << choose a value >>

FRANCE
CAMARGUE (CAMARGUE, long: 4.556734 lat: 43.544152)

GERMANY
Oder-valley at Lake Felchow (Brandenburg) (DEU2_BB, long: 14.135000 lat: 53.052500)
Ruegen on Isle of Koos (Mecklenburg-Northern Pomerania) (DEU1_MP, long: 13.403056 lat: 54.355000)

POLAND
Jeziorsko reservoir (PL01, long: 18.633333 lat: 51.700000)
Pawlowice Vistula river valley (PL03, long: 21.675000 lat: 51.606667)
Vistula river mouth (PL02, long: 18.940833 lat: 54.355000)

To select multiple watching sites, please click on the list-items while keeping the CTRL-key on your keyboard pressed.

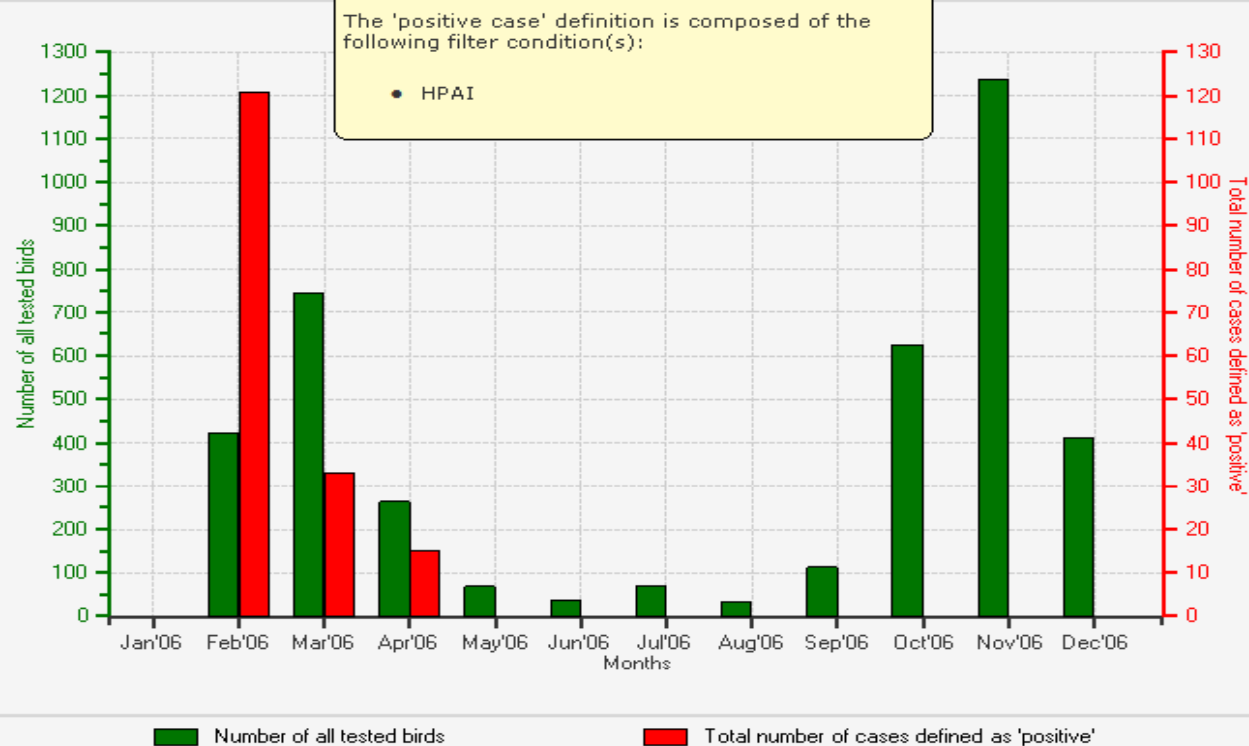
Set spatial filter Deactivate spatial filter ☐ Use 'spatially not within' mode Close

Fertig Internet | Geschützter Modus: Inaktiv 100%

» NFB-DB Home » Reports » Data analysis » Dynamic charts (time series)

Dynamic charts by time series (tested birds with positive cases)

Positive case definition: [1 user-defined condition(s) activated]

[Refresh](#)[Get data table as Microsoft Excel file:](#)

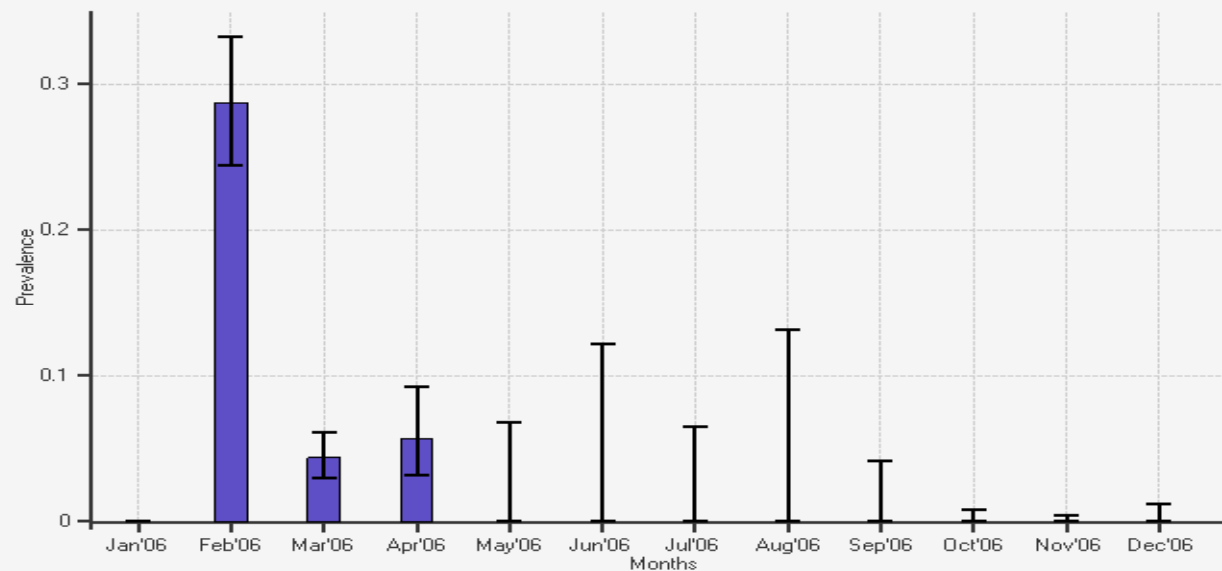
	Totals	Jan'06	Feb'06	Mar'06	Apr'06	May'06	Jun'06	Jul'06	Aug'06	Sep'06	Oct'06	Nov'06	Dec'06
Total number of cases defined as 'positive'	169	0	121	33	15	0	0	0	0	0	0	0	0
Number of all tested birds	4026	0	422	744	263	68	37	71	34	113	626	1236	412

Dynamic charts by time series (prevalence with confidence interval)

Positive case definition (x-value): [1 user-defined condition(s) activated]

Refresh

Confidence level in percent: 95 (50% - 99%) Maximum range of Y-axis: auto (0.0 - 1.0)



Get data table as Microsoft Excel file:

	Jan'06	Feb'06	Mar'06	Apr'06	May'06	Jun'06	Jul'06	Aug'06	Sep'06	Oct'06	Nov'06	Dec'06
CL _u	0	0.33247	0.06174	0.09236	0.06871	0.12171	0.06593	0.13152	0.04209	0.00777	0.00395	0.01178
P	0	0.28673	0.04435	0.05703	0	0	0	0	0	0	0	0
CL _l	0	0.24401	0.03071	0.03223	0	0	0	0	0	0	0	0
x	0	121	33	15	0	0	0	0	0	0	0	0
n	0	422	744	263	68	37	71	34	113	626	1236	412

Explanation: CL_u = upper bound of confidence limit, P = prevalence, CL_l = lower bound of confidence limit, x = total number of cases defined as 'positive', n = number of all tested birds (within the user-defined target population)

Surveillance schemes:

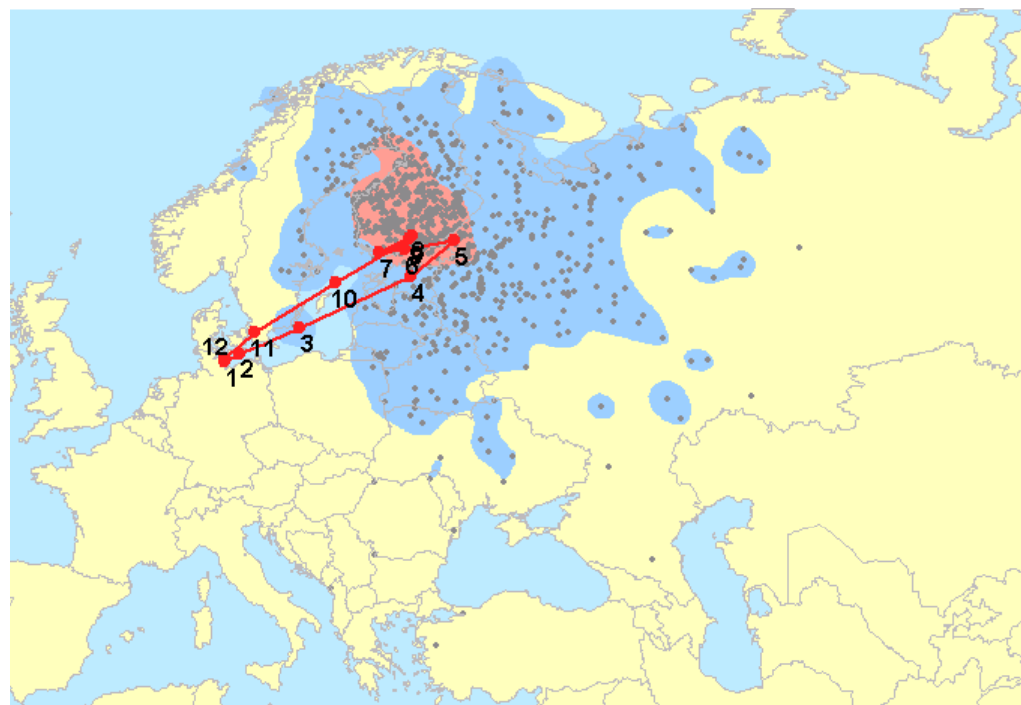
- ✗ **The target of the surveillance must be fixed!**
- ✗ HPAI and LPAI surveillance must be different!
- ✗ Surveillance can then be optimized to achieve these goals and reduce resources
- ✗ HPAI surveillance must focus on dead birds (public awareness, sampling in the breeding areas, cooperation with ornithologists, mortality reporting etc. required)
- ✗ LPAI surveillance could focus on some geographical (“representative”) hotspots, species (e.g. high prevalence and H/N diversity), time periods, specimen, mallard sentinel stations (e.g. Globig et al., 2009, EID)
- ✗ Both sample schemes could also include a small proportions of the other without losing optimization potential

Outlook:

Database

- Expansion of the currently 128,000 records of investigated wild birds in time and space
- Online calculation of raw prevalence maps and maps where the estimate is corrected for the sampling error
- Automated threshold warnings by the database (changes in prevalences, appearance of new subtypes, etc.)
- Integration of dynamic data on wild bird movements

Seasonal movements to and from Germany & Denmark for Mallard (*Anas platyrhynchos*)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Austria	.	.	.	1	.	.	.	1	.	.	.	1
Belarus	.	.	.	.	.	.	.	8	6	1	.	.
Belgium	6	6	9	2	.	2	4	7	1	1	1	10
Russian Federation	.	.	.	41	69	6	1	99	95	39	10	1
Spain	.	1	.	.	.	.	.	.	.	.	.	1
Sweden	38	16	21	13	45	93	120	178	164	175	154	91
Switzerland	13	2	1	.	3	1	3	2	4	.	4	2
The Netherlands	67	23	4	1	1	.	8	24	19	8	13	36
Ukraine	.	.	.	.	.	.	.	1	1	.	1	.

Season mallards
ringed and recorded
in Denmark &
Germany in December
until February

Outlook:

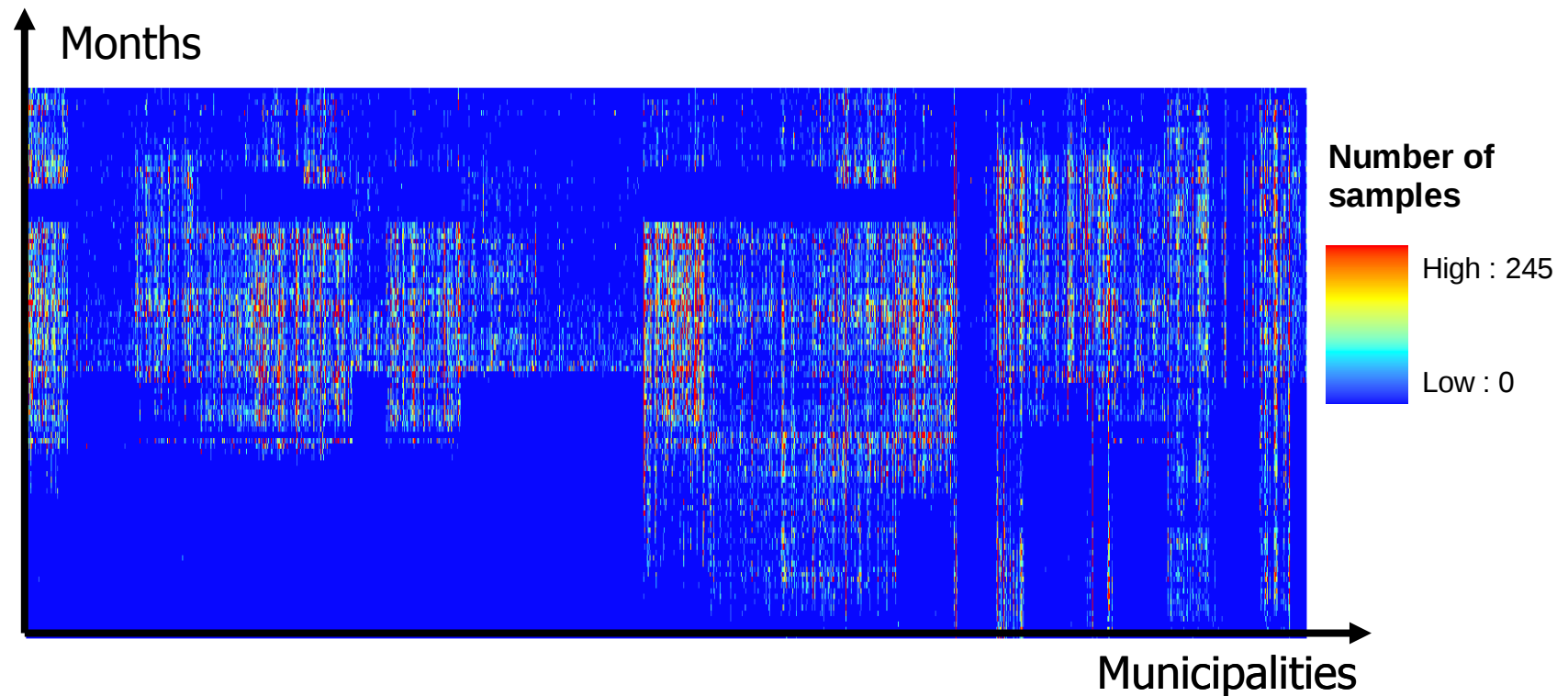
Database

- Expansion of the currently 128,000 records of investigated wild birds in time and space
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- Automated threshold warnings by the database (changes in prevalences, appearance of new subtypes, etc.)
- Integration of dynamic data on wild bird movements

Analysis/Modelling

- Combined space-time analysis/modelling of all data sources to understand better the ecology of AI in wild birds
- Optimize surveillance in space and time incl. identification of hotspots

Distribution of the sample size per time and space



Analysis/Modelling

1. Each bird i has the unknown probability π_i that it is positive or negative depending on area j the bird lives, on the time t and species x , the covariates, $\alpha_{1...n}$
2. The parameter π_i is modeled with a logistic model

$$\log\left(\frac{\pi_i}{1-\pi_i}\right) = \mu + \theta_j + \varphi_t + s_t + \alpha_1 + \dots + \alpha_n + x$$

μ = intercept
 θ_j = spatial effect in the area j
 φ_t = time effect on the time t
 s_t = seasonal effect for the whole region
 $\alpha_{1..n}$ = variables e.g. regarding CLC, high risk, IWC
 $x^{\sim}$ = species