

Overview

- Background
- Partners
- Functionality
- Problems & Workarounds
- Architecture
- Reality
- Conclusions

Background

- JRC proposed doing a Biodiversity Mashup
- Show possibilities of INSPIRE in year of Biodiversity 2010
- Integrate other services
- Prepare before INSPIRE Conference in Krakau 23-25 June
- Workshop at INSPIRE Conference on June 22

Partners

Implemented within the Twinning Project: Preparing to implement the environment-related themes of Directive 2007/2/EC "INSPIRE" with focus on Annex I.9 "Protected Areas"

Twining Project Number: BG/2007/IB/EN/01/UE/TWL

Contract Number: 2007/019-303.07.03.0010

- Ministry of Environment and Water (Bulgaria)
- Umweltbundesamt (Environment Agency Austria)
- Slovenská agentúra životného prostredia (Slovak Environmental Agency)

Mashup Functionality

- Simple map viewer showing Protected Sites in BG & SK
- List of species names
- Select Species → Sites with that species shown
- Select Species Info → Encyclopedia of Life page shown
- Download data

As Protected Sites data is currently not available as INSPIRE compliant services first step is to configure such services

Mashup Functionality

Choose Species

Wolf (*Canis lupus*)

Bear (*Ursus arctos*)

Otter (*Lutra lutra*)


Lynx (*Lynx lynx*)

...




Mashup Functionality

IMAGES
MAPS
COMMENTS



IMAGES



CLASSIFICATION [What's this?](#)

Species 2003 & ITC Catalogue of Life: Annu...

- Animalia +
- Chordata +
- Mammalia +
- Carnivora +
- Carnidae +
- Canis +
- Canis lupus Linnaeus, 1758
 - Canis lupus lupus Linnaeus, 1758 +
 - Canis lupus albus Kerr, 1792 +
 - Canis lupus alces Goldman, 1941 +
 - Canis lupus arabs Pocock, 1934 +
 - Canis lupus arctos Pocock, 1935 +
 - Canis lupus baileyi Nelson and Goldman
 - Canis lupus cedrorum G. M. Allen and
 - Canis lupus chancoi Anderson, 1943
 - Canis lupus campestris Owiguboki, 190
 - Canis lupus chancoi Gray, 1863 +
 - Canis lupus colymbianus Goldman, 19
 - Canis lupus crassodon Hall, 1932 +

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GENERAL DESCRIPTION

Description

SUPPLIER: [flickr](#)

AUTHOR: [flickr](#)


Colorado Wolf and Wildlife Divide CO

TABLE OF CONTENTS

- Description
- General Description
- Physical Description
- Barcode
- Nucleotide Sequences
- Morphology
- Reproduction and Life History

SOURCE AND ADDITIONAL INFORMATION

SUPPLIER: [Colorado Wolf and Wildlife Divide](#)



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SOURCE URL: [View original data sheet](#)

Gray wolves usually live in packs, led by an "alpha pair." The pack includes some of the alpha pair's offspring and may include some unrelated wolves. A

CONTRIBUTE

[This page has 1 update](#)

Last update: 10 Oct 2009

- Latest Changes
- Submit an image
- Submit text
- More information on how to help

Problems & Workarounds

No INSPIRE Services for Protected Sites with Protected Species

→ Put up our own INSPIRE PS WFS

GML 3.2.1 & Complex Features not possible

→ regress schema to GML 3.1.1

Problems getting GeoServer to map to proper Schema

→ Adjust schema to GeoServer mapping

Problems & Workarounds

GeoServer cannot filter on qualified attributes like `xlink:title="Ursus arctos Linnaeus, 1758"`

→ shift species name to element

GeoServer cannot filter on elements with multiplicity > 1

→ concatenate species names and filter on `*Ursus*`

OpenLayers has difficulties displaying complex GML

→ Use simple GML to query which sites for protection of specific species, then request these sites via WMS from EEA

Problems & Workarounds

Missing official IDs for each species

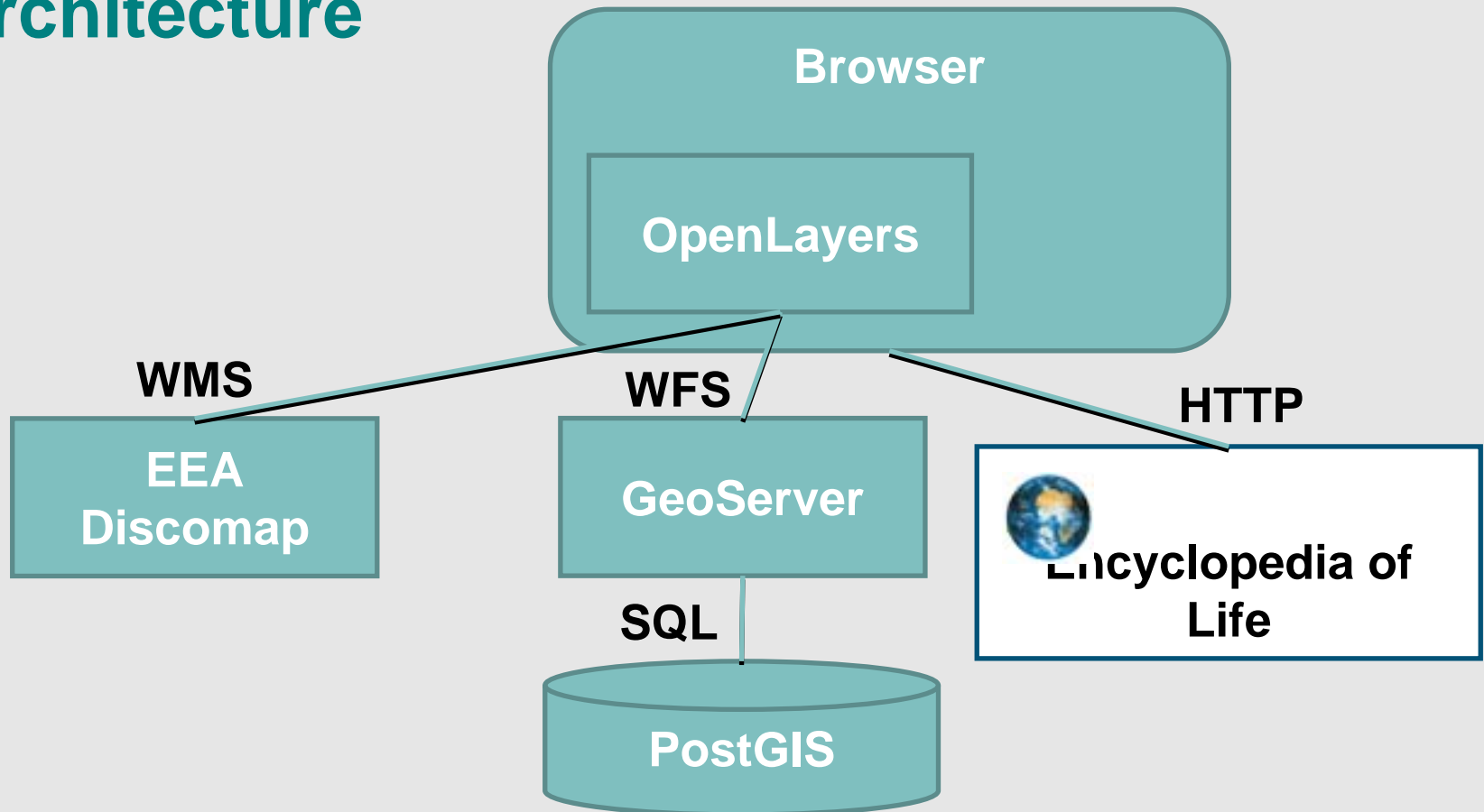
→ Currently using IDs from Encyclopedia of Life

Architecture

Proprietary	GML 3.2.1	Complex Features
ESRI	x	x
InterGraph	x	x
SnowFlake	✓	✓

Open Source	GML 3.2.1	Complex Features
Deegree	✓	~
GeoServer	x	✓
MapServer	x	x

Architecture



Steps Content

- Identification of national datasets
- Identification of attributes INSPIRE - NATIONAL LEVEL DATASETS
- Prepare national datasets for transformation (reference systems and datasets itself)
- Identify common species for both countries
- Identify common ID's for species - we decided for Encyclopedia of Life ID's

Steps Technical

- Data scheme 3.2.1 to 3.1.1
- Select software for publishing web services: postgres - postgis - geoserver (+ add on) – tomcat; installation
- Create mapping algorithm to geoserver
- Import data to postgis
- Publish complex WFS service
- Publish simple WFS table and WMS service because of issues...but use the same tables as are in complex WFS
- Select software for web application: openlayers - javascript - independent configuration which can be used with any WWW server
- Web development with all WFS issues

Reality – Mashup Start Page

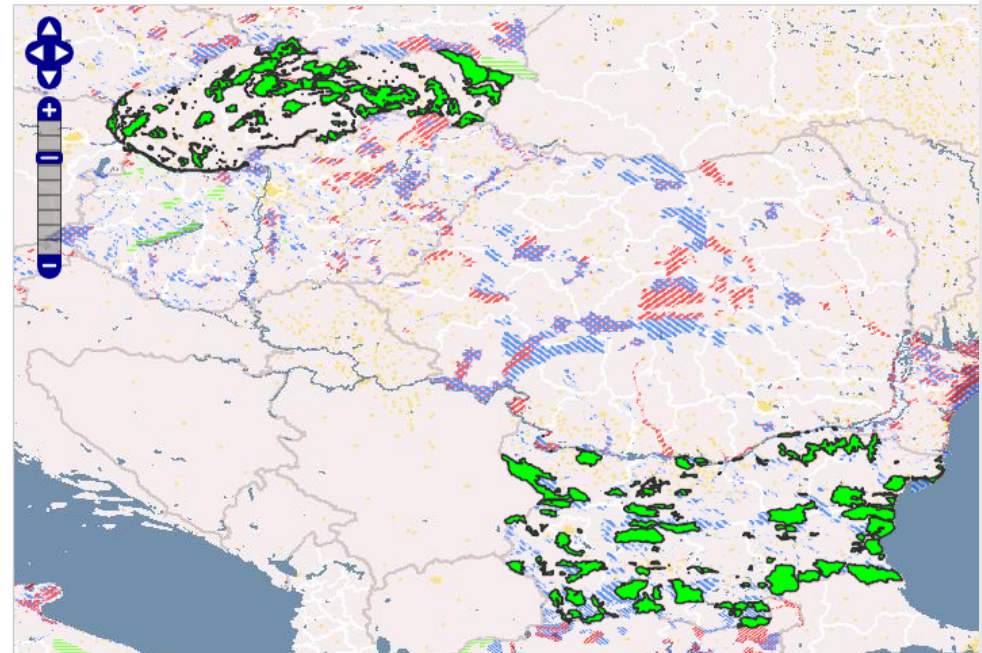
INSPIRE Mash-up Biodiversity web application

[Restart applic.](#)

Species list

- Accipiter gentilis (Goshawk)**
[Display on map](#) [Display species info](#)
- Accipiter nisus (Eurasian Sparrowhawk)**
[Display on map](#) [Display species info](#)
- Alcedo atthis (Common Kingfisher)**
[Display on map](#) [Display species info](#)
- Aquila chrysaetos (Golden Eagle)**
[Display on map](#) [Display species info](#)
- Aquila pomarina (Lesser Spotted Eagle)**
[Display on map](#) [Display species info](#)
- Ardea cinerea (Mauritanian Heron)**
[Display on map](#) [Display species info](#)
- Bonasa bonasia (Hazel Grouse)**
[Display on map](#) [Display species info](#)
- Bubo bubo (Eagle Owl)**
[Display on map](#) [Display species info](#)
- Buteo buteo (Common Buzzard)**
[Display on map](#) [Display species info](#)
- Ciconia ciconia (White Stork)**
[Display on map](#) [Display species info](#)
- Ciconia nigra (Black Stork)**
[Display on map](#) [Display species info](#)

Map



GML

[Download all protected sites features](#)

Reality – Ciconia nigra (Black Stork)

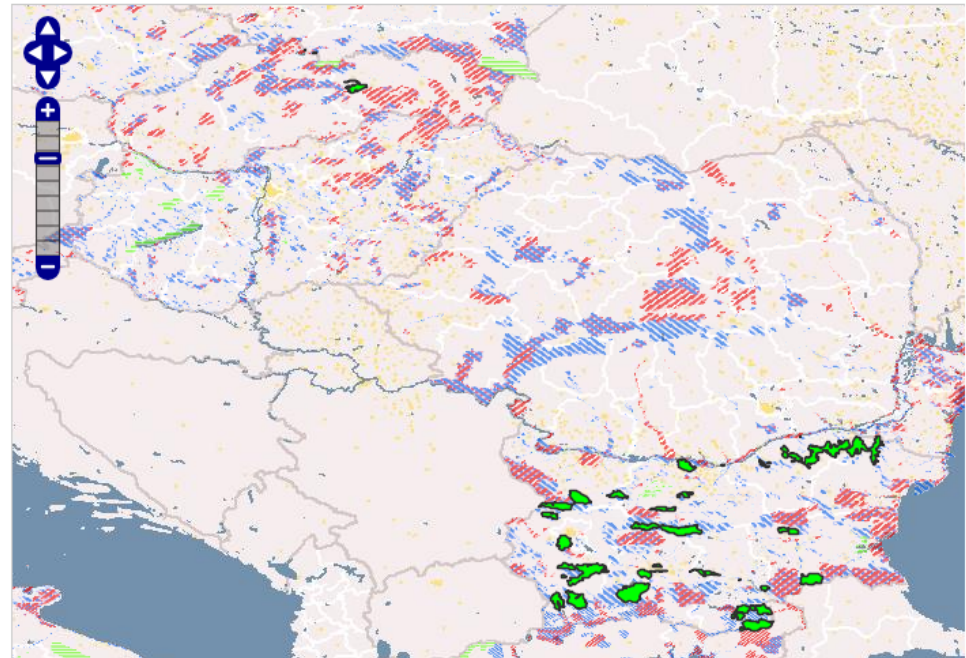
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Map



GML

[Download all protected sites features](#)

Reality – *Ciconia nigra* (Black Stork) EoL



[login](#) | [create an account](#)

SHOWING: [ALL INFORMATION](#)

FIND

Names
 Tags
 Full-text

Ciconia nigra (Linnaeus, 1758)


Black Stork

Species recognized by [The Integrated Taxonomic Information System](#) T. Orrell (custodian) in [Catalogue of Life](#)


IUCN RED LIST STATUS: LEAST CONCERN (LC)


SHOWING: [SCIENTIFIC NAMES](#)

IMAGES
 MAPS
 COMMENTS



IMAGES





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SUPPLIER: [Animal Diversity Web](#)

AUTHOR: David Blank

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CLASSIFICATION: [What's this?](#)

Species 2000 & ITIS Catalogue of Life: Annu:

- [Animalia +](#)
- [Chordata +](#)
- [Aves +](#)
- [Ciconiiformes +](#)
- [Ciconiidae +](#)
- [Ciconia +](#)
- [Ciconia nigra \(Linnaeus, 1758\)](#)

- [Archaea +](#)
- [Bacteria +](#)
- [Chromista +](#)
- [Fungi +](#)
- [Plantae +](#)
- [Protozoa +](#)
- [Viruses +](#)

Conclusions

- Currently almost no SW supports INSPIRE requirements for Download Services
- Difficult to determine if SW conforms to requirements (i.e. WFS supports GML 3.2.1, complex features)
- Filter Encoding Standard specification is too general – profiles could be useful
- Unsure which SW will support which requirements by when
- Missing reference implementation for each standard
- Causing worries in national administrations
- Sometimes causes wrong decision in SW Investments

Recommendations

JRC:

- Reference implementation for each standard
- Reference web services which can be used for developing INSPIRE
- INSPIRE GeoPortal often down

EEA:

- Real interoperable web services of at reported data
- WMS services published by EEA not reference interoperable services! (<http://discomap.eea.europa.eu/ArcGIS/rest/services>)
- Services and data should follow INSPIRE standards