

MUSIT seminar:

Trenger de naturhistoriske museene egne portaler for tilgjengeliggjøring av samlingsdata?

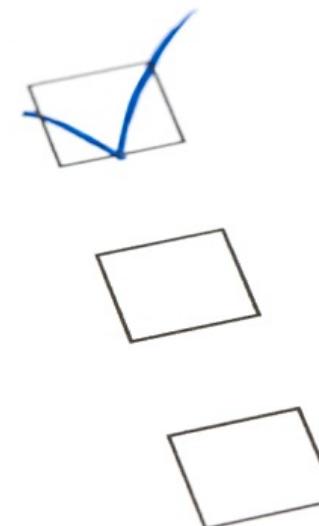
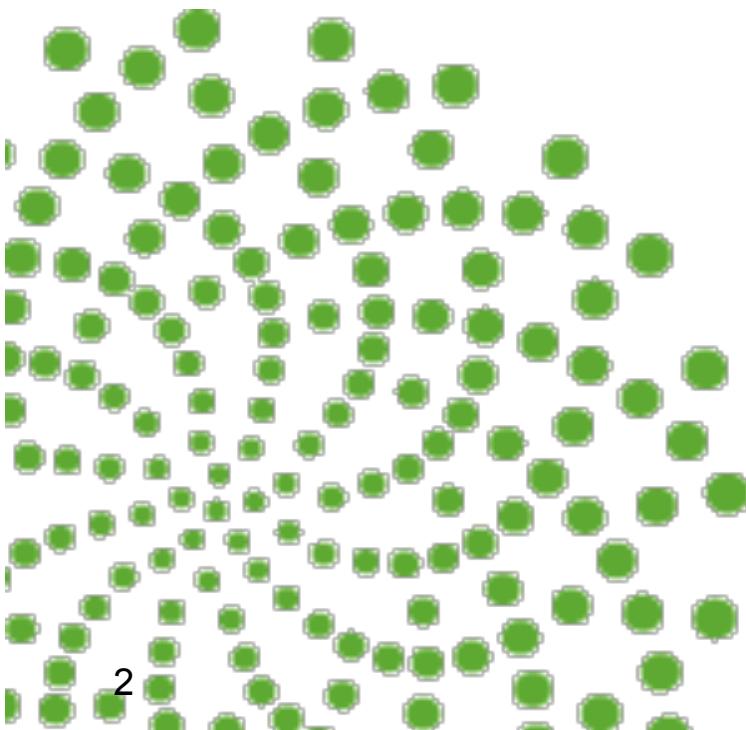
Global Biodiversity Information Facility GBIF Norge

Dag Endresen og Christian Svindseth
GBIF Norge, NHM-UiO
Naturhistorisk museum, Universitetet i Oslo (NHM-UiO)
Global Biodiversity Information Facility (GBIF)

6 februar 2013

Emner

- Hva er GBIF?
- GBIF data portal
- Portal toolkit (NPT)
- Darwin Core (DwC), DwC arkiv
- Stabile ID nøkler (UUID)
- Data manuskript, sitering for datasett



HVA ER GLOBAL BIODIVERSITY INFORMATION FACILITY (GBIF)?

GBIF arbeider for *frei og åpen tilgang til biodiversitetsdata online*.

Vi er et internasjonalt og statlig initiert og finansiert nettverk med fokus på å bidra til at biodiversitetsdata er tilgjengelig for alle og enhver, for vitenskapelig forskning, bevaring og bærekraftig utvikling.

*Status data portal
Februar 2013*

383,027,468 indexed records

9,962 datasets

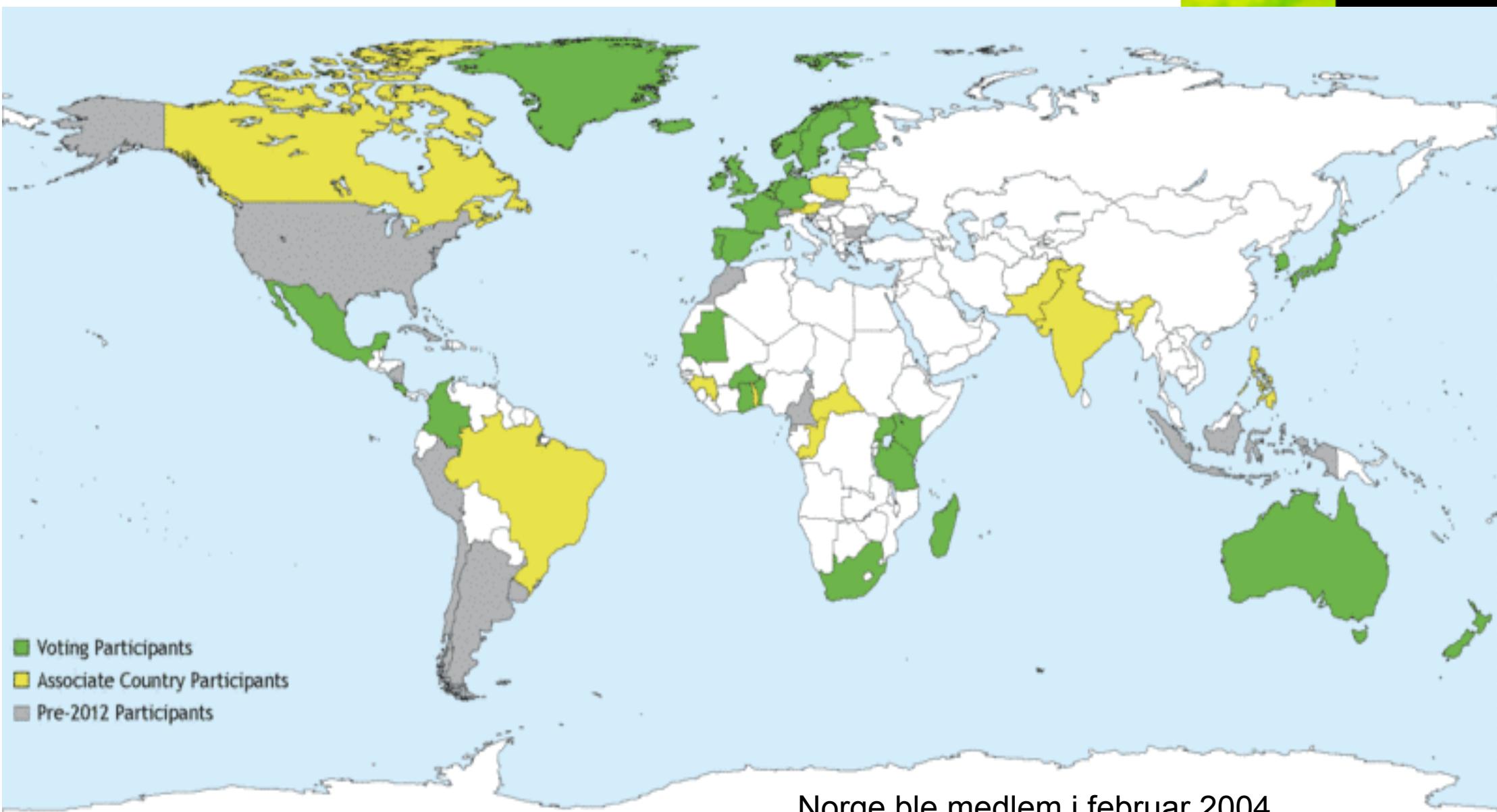
456 publishers

Access data portal



GBIF MEDLEMMER

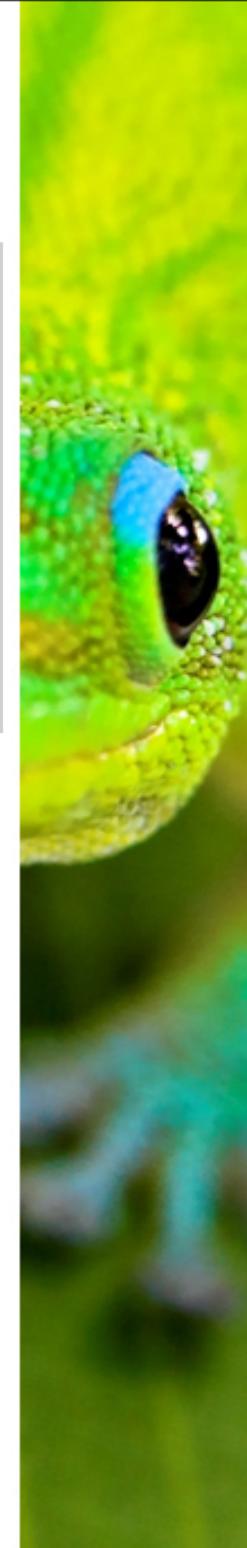
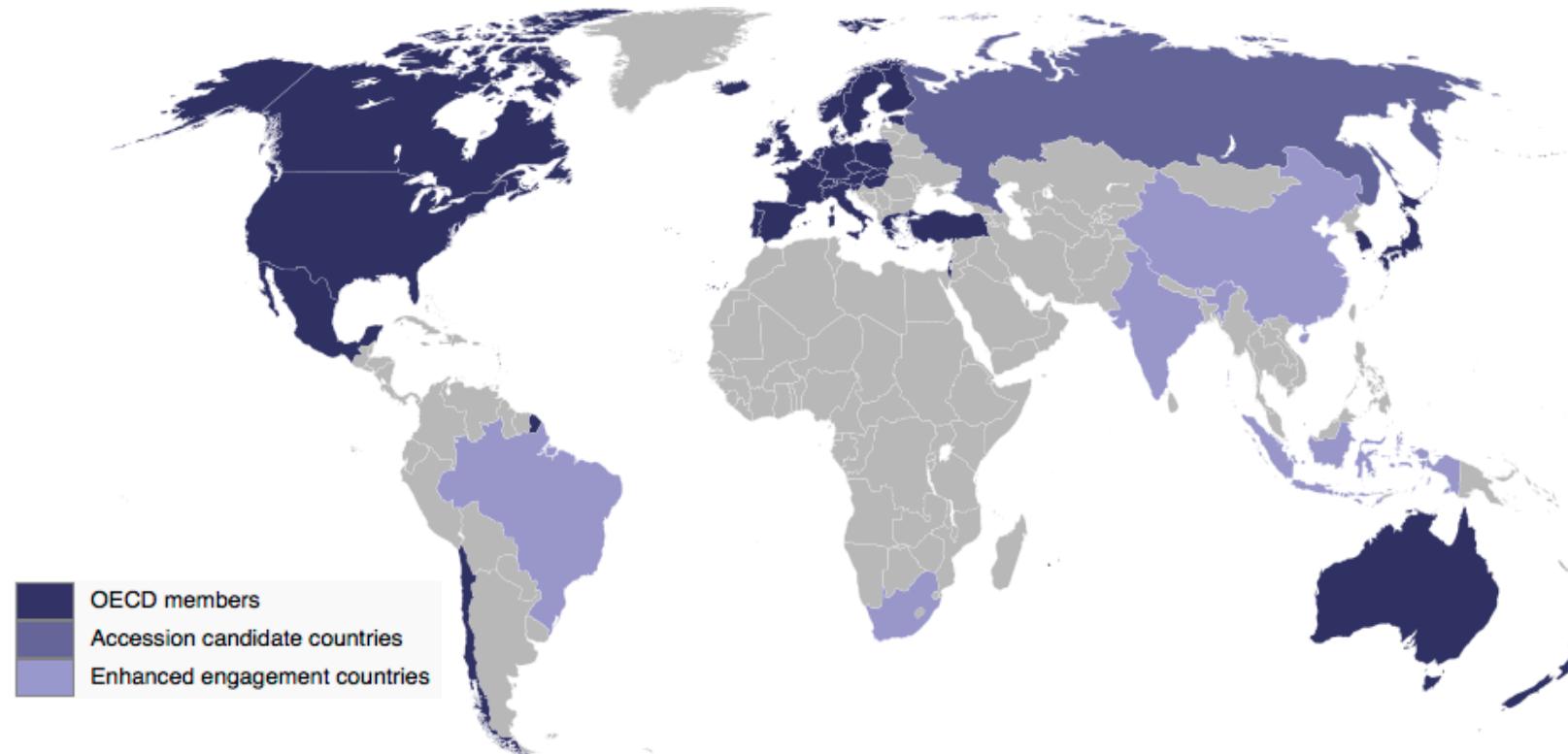
38 LAND MED STEMMERETT
20 ASSISTERTE LAND
46 ORGANISASJONER



Norge ble medlem i februar 2004.

Etter anbefaling fra OECD Global Science Forum (1999):

*“[E]stablish and support a distributed system of interlinked and interoperable modules (databases, software and networking tools, search engines, analytical algorithms, etc.) that together will form a **Global Biodiversity Information Facility (GBIF)**”.*



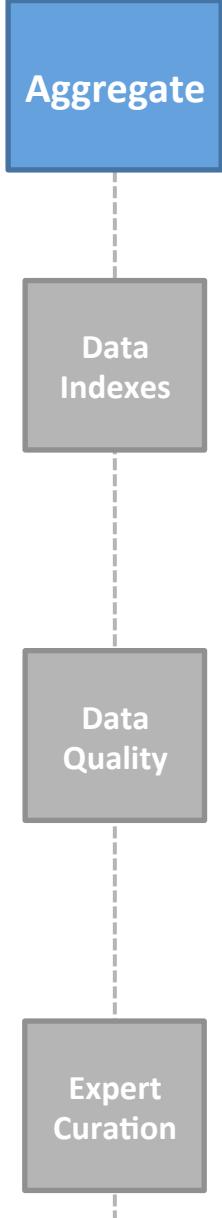


GBIF's unike rolle

- Register for biodiversitet data ressurser.
- Verktøy og support for publisering av biodiversitetsdata.
- Nettverk på nasjonalt, regionalt og globalt nivå.
- Ett globalt virtuelt naturhistorisk datasett.
- Tverrsektoriell lenke mellom data fra samlinger, økologi og genetikk.
- Tilgang til biodiversitetsdata for GIS analyse og miljøovervåking.
 - Aggregerte data for stedfestede artsobservasjoner.



Forbedrer "fitness-for-use"



- Progressiv forbedring
 - Dataindeks
 - Sentralisert søkesystem.
 - Standardisering av stabile nøkler.
 - Konsekvensanalyse for metadata.
 - Datakvalitet
 - Uoverenstemmelser innenfor poster.
 - Validering av poster mot metadata.
 - Identifisering av avvikende data.
 - Statistikk per post og per datasett.
 - Ekspert korrigering
 - Interface med fagmiljø for artsnavn.
 - Rapportering av feil og annoteringer fra databrukere.



Basert på ett lysbilde av Donald Hobern (2012)

Samarbeidspartnere



– Biologisk litteratur

- Biodiversity Heritage Library (BHL).
- Annoteringer fra brukere for å ekstrahere stedfestede artsobservasjoner.
- Lenke mellom artsbeskrivelser fra litteratur til taxonomi og artsnavn.

– Artsinformasjoner

- Encyclopedia of Life (EOL).
- Assistere EOL som global aggregator av artsbeskrivninger.
- Include EOL summary box on each GBIF species page

– Artsnavn, nomenklatur

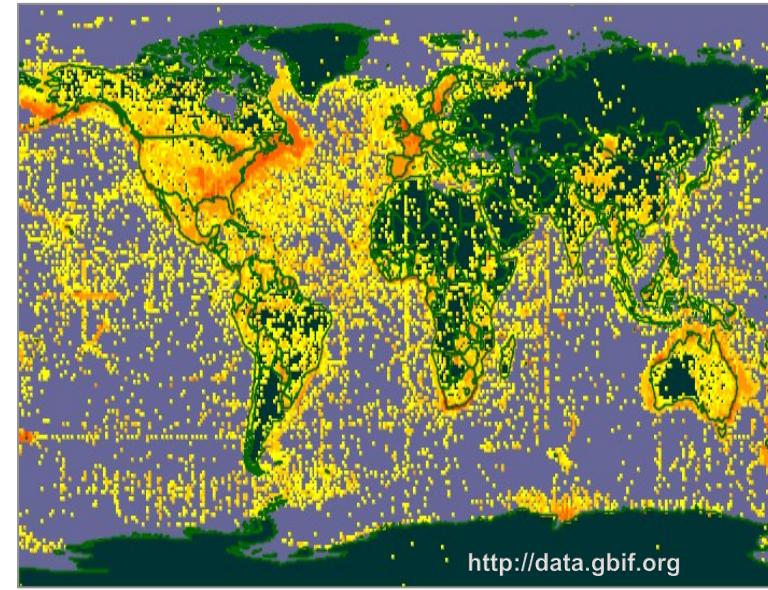
- Catalogue of Life (CoL), etc.
- Publisere globale og regionale datasett med artsnavn.
- GBIF infrastruktur kan levere artsnavn til CoL (etc.).

GBIF LEVERER TRE KJERNE-TJENESTER OG PRODUKTER:

1. Informasjonsinfrastruktur – en Internet-basert indeks for et globalt distributert nettverk av interoperative databaser som inneholder primær biodiversitet data.

2. Programvare, standarder og protokoller – verktøy som dataleverandører behøver for å formattere og publisere data.

3. Opplæring – og tilgang til et globalt nettverk med eksperter.





<http://data.gbif.org/>

SPECIES COUNTRIES DATASETS OCCURRENCES SETTINGS
ABOUT

... free and open access to biodiversity data

Welcome to the GBIF Data Portal
Access 388,680,911 data records (340,362,391 with coordinates) shared via the GBIF network.
To learn how to use this site, please see [About](#).
To tune this site for smaller displays, see [Settings](#).
Version 1.2.6 - click here to see what is new!

Search species/country/dataset

Explore Species

Find data for a species or other group of organisms.

Species

Information on species and other groups of plants, animals, fungi and micro-organisms, including species occurrence records, as well as classifications and scientific and common names.

Example species:

Puma concolor (Linnaeus, 1771)

Explore Countries

Find data on the species recorded in a particular country, territory or island.

Countries

Information on the species recorded in each country, including records shared by publishers from throughout the GBIF network.

See data for:

Norway

Explore Datasets

Find data from a data publisher, dataset or data network.

Datasets

Information on the data publishers, datasets and data networks that share data through GBIF, including summary information on 10067 datasets from 422 data publishers.

Latest dataset added:

[Vietnam Type Culture Collection](#)

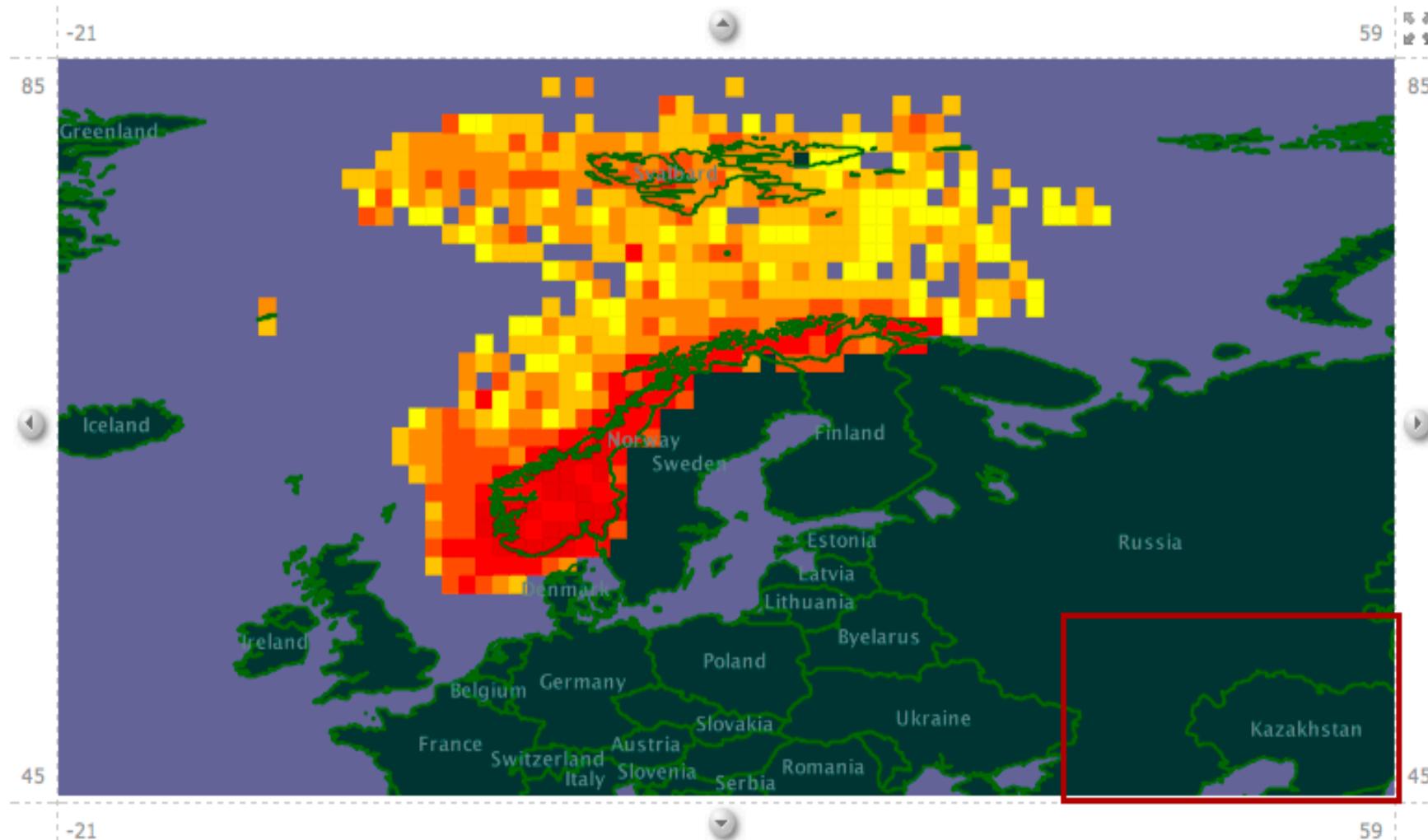




Countries, territories and islands: Norway

Northern Europe

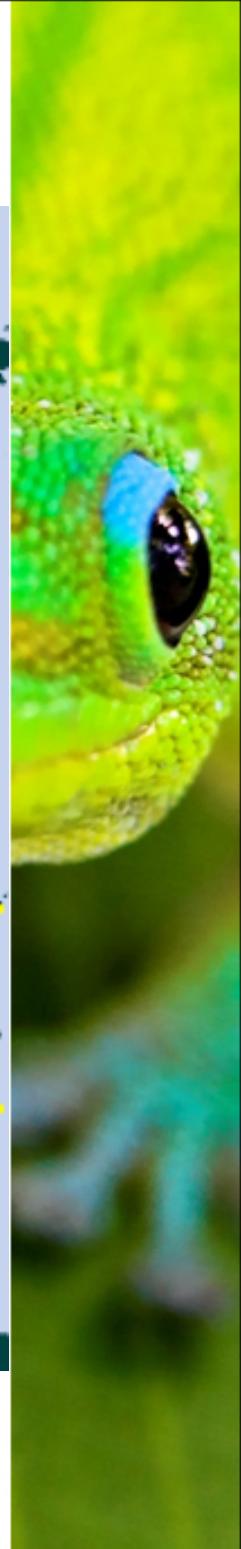
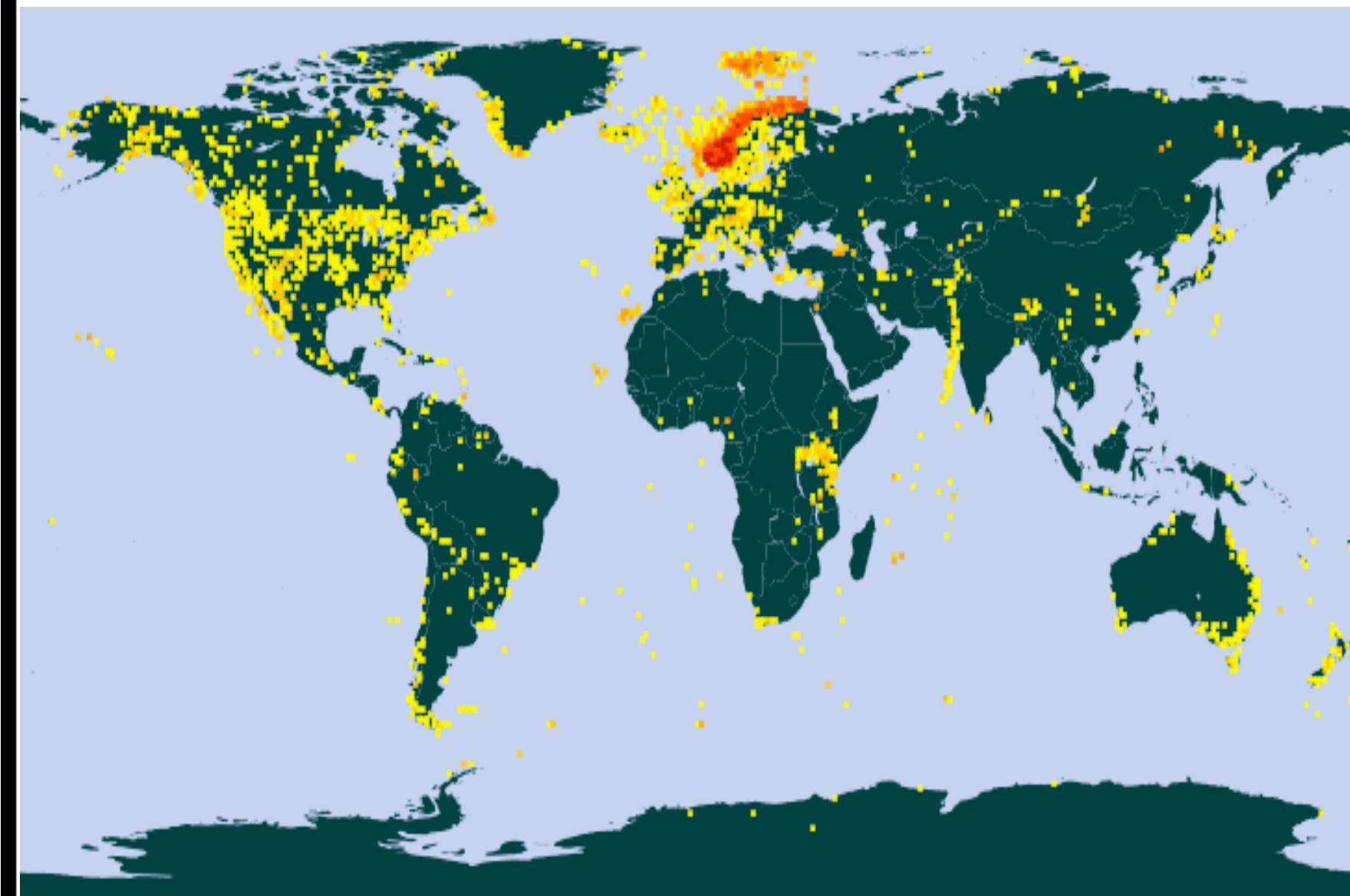
Occurrence overview



GBIF portal: **17,281,052** artsobservasjoner og objekter (**16,076,604** med koordinater).

GBIF Norge: **11,777,738** artsobservasjoner og objekter er publisert FRA norske dataleverandører.

BIODIVERSITETSDATA PUBLISERT FRA NORGE



GBIF portal: **17,281,052** artsobservasjoner og objekter (**16,076,604** med koordinater).

GBIF Norge: **11,777,738** artsobservasjoner og objekter er publisert FRA norske dataleverandører.

GBIF Norway
[Home](#)
[GBIF and GBIF Norway](#)
[Personnel](#)
Services
[Our datasets](#)
[Search our datasets](#)
[WAP service](#)
GBIF data portal
[GBIF Norway provider page](#)
[All Norwegian data](#)
[Overview of records hosted in Norway](#)
[Overview of records relevant to Norway](#)
**Other Norwegian
GBIF data providers**
[MUSIT: Dataset](#)
[NINA: Dataset](#)
Search our datasets
1. Choose a data source
 or
2. Please enter at least one search criterion.
Taxonomy
Class: Order: Family: Genus: Species: Subspecies: Norwegian Name:
 Limit results to georeferenced records:
 No Yes

Geospatial
Country: County (Fylke): Municipality (Kommune): Locality (%):
Other details
Collector (%): Collection year: to Catalog Number:
 Coordinate precision: Equal to or less than
 meters:
3. Add or remove fields from search result (Optional)
[Show available fields...](#)
4. Return results as...
 HTML CSV XML

All data is shared according to the [GBIF Data Use Agreement](#).
 ~

DATA PORTAL

GBIF NORGE

Ta gjerne kontakt med oss med tilbakemeldinger og forslag til endringer og forbedringer for denne portalen!



[Home](#) [Search](#) [TaxonTree](#) [Map](#) [ObjectInfo](#) [Statistics](#) [About](#)

 Choose symbolizing:
 Species Category Institution

Legend:
Species/groups

- fugler Aves (Class)
- no coordinate - only municipality
- only observations

Occurrence types:

- Specimen
- Observations

Source:

- Artsobservasjoner.no
- Sustain.no

Predator database
Coordinate precision :

- All

- Precision not given

Categories: All

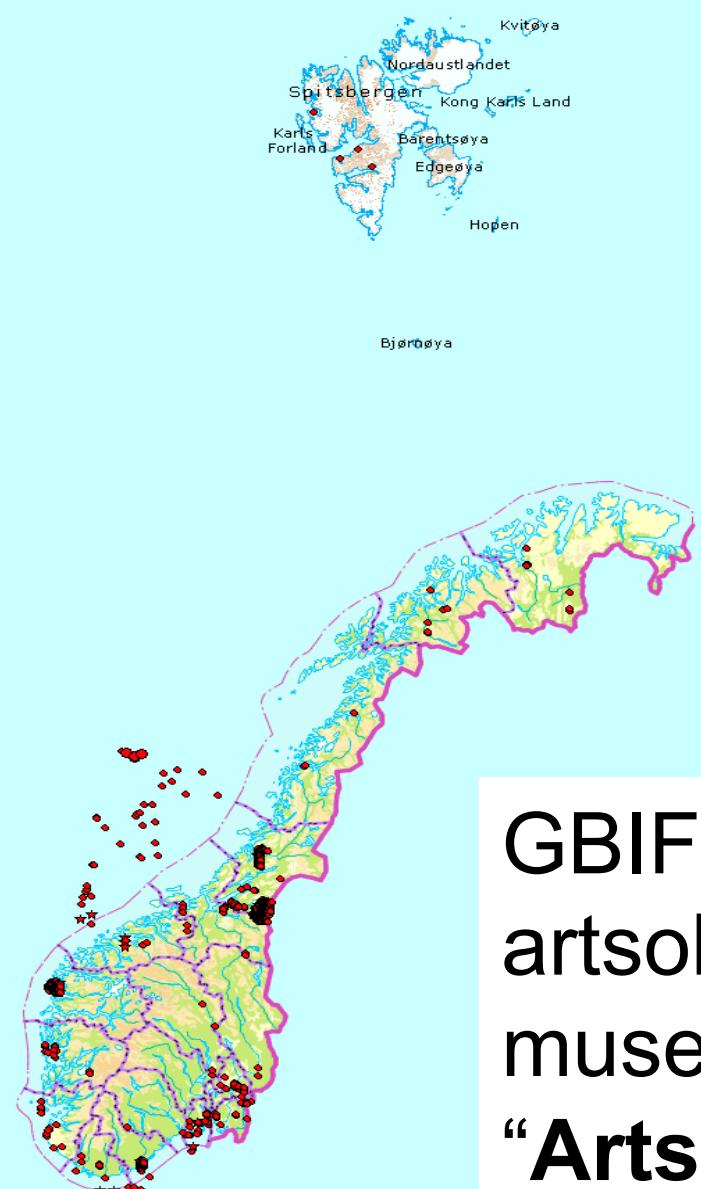
[Change Categories](#)
Time span: No time limit

[Change time span](#)
Geographical selection: All

[Change geographical range](#)
Institutions: All

[Change institutions](#)
Map Layers:
[Choose grid](#)

- Coordinate precision
- Mark uncertain and human distributions
- Protected areas
- Topographic rastermap
- Topographic map
- Grayscale map
- Photographic maps


ARTSDATABANKEN


GBIF leverer data for
artsobservasjoner og
museumsobjekter til
“Artskart”.

NODES PORTAL TOOLKIT

- Programvare fra GBIF for å implementere online dataportaler for biodiversietsdata.
 - Nasjonal, tematisk eller regional.
- Åpen kildekode, fritt tilgjengelig (Google Code).
- Drupal 7 (PHP, Javascript).
- Bygger videre på Scratchpads 2 .
 - ViBRANT, NHM London, EU 7th framework.
 - <http://scratchpads.eu/>





GBIF Guinea (NPT Startup Site)

A Biodiversity Hotspot in Western Africa

Home Species Country Data Map Protected Area Blog Contact

DEMO

<http://npt-demo.gbif.org>

Introduction to Biodiversity in Guinea

The Guinean Forests of West Africa hotspot encompasses all of the lowland forests of political West Africa, stretching from Guinea and Sierra Leone eastward to the Sanaga River in Cameroon. This includes the countries of Liberia, Côte d'Ivoire, Ghana, Togo, Benin, and Nigeria, which maintain remnant fragments of the forests. The hotspot also includes four islands in the Gulf of Guinea: Bioko and Annobon, which are both part of Equatorial Guinea, and São Tomé and Príncipe, which together form an independent nation. Bioko is a continental-shelf island, whereas the remaining three are oceanic.

The hotspot includes two distinct sub-regions, which incorporate several important forest refugia created by the retraction and fragmentation of forests during the Pleistocene Epoch. The first sub-region, Upper Guinea, stretches from southern Guinea into eastern Sierra Leone and through Liberia, Côte d'Ivoire and Ghana into western Togo. The second sub-region, Nigeria-Cameroon, extends along the coast from western Nigeria to the Sanaga River in southwestern Cameroon. The two sub-regions are separated by the Dahomey Gap in Benin, an area of farmland, savanna and highly degraded dry forest. The hotspot supports several important montane regions, including the Cameroon Highlands (Mt. Cameroon, at 4,095 meters, is the highest peak in West Africa) and the Nimba Highlands.

The Guinean forests consist of a range of distinct vegetation zones varying from moist forests along the coast, freshwater swamp forests (for example, around the Niger Delta), semi-deciduous forests inland with prolonged dry seasons. Of all West African countries, only Liberia lies entirely within the moist forest zone, although a substantial portion of Sierra Leone also falls within the boundaries.



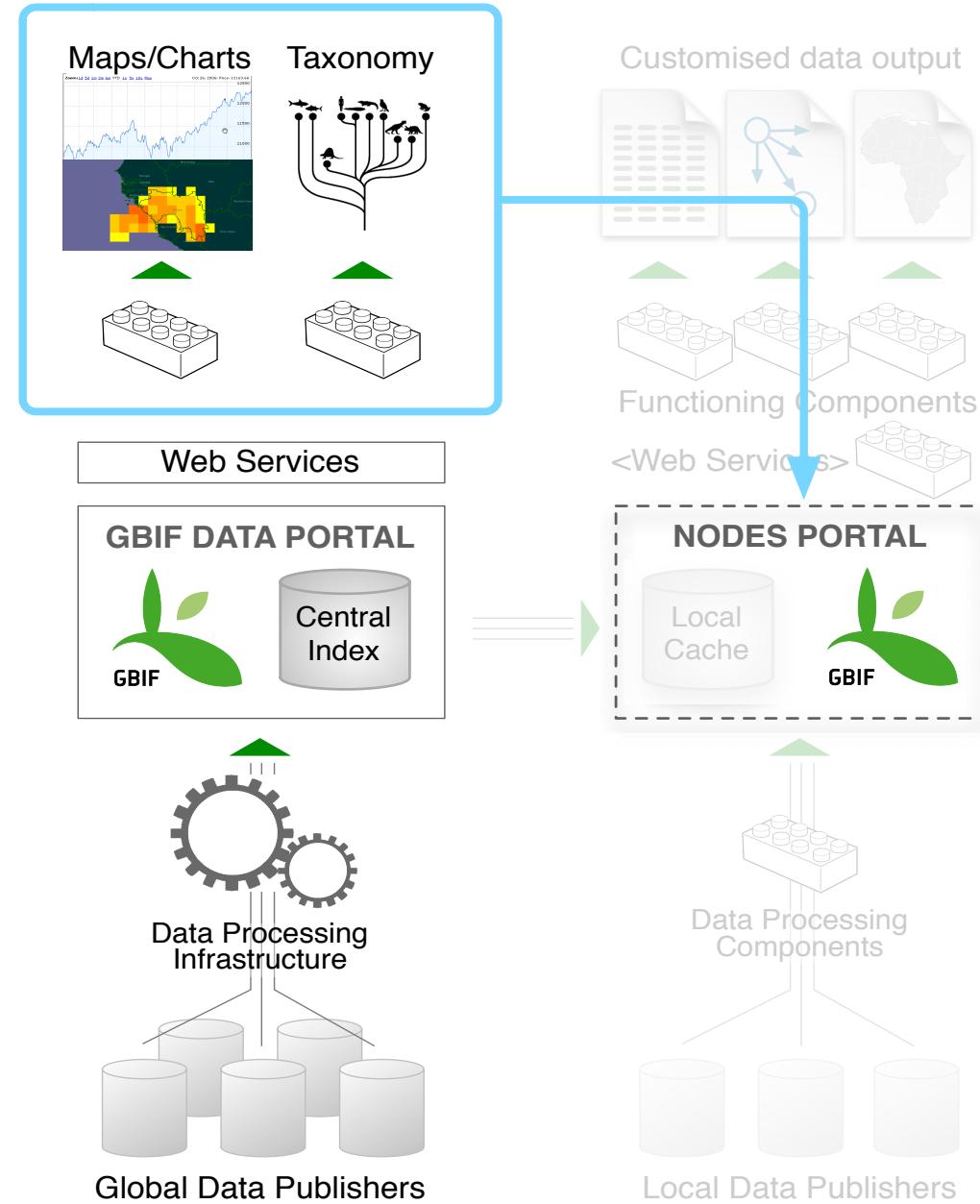
About NPT Startup Site

This is a concept site designed to show what a country portal would look like using NPT/Drupal and how it could be used. Upon finishing the installation of the portal, you will have some biodiversity contents retrieved from the GBIF information services and some ready-to-use common portal functionalities, such as news, blog, image gallery, ...etc. All the content would be controlled by you and you would distribute this across a range of registered users.

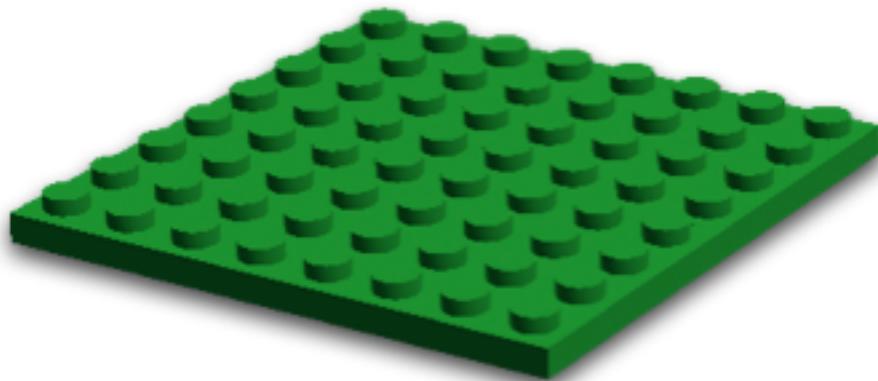
The text example of this page is retrieved from [biodiversity hotspot](#).



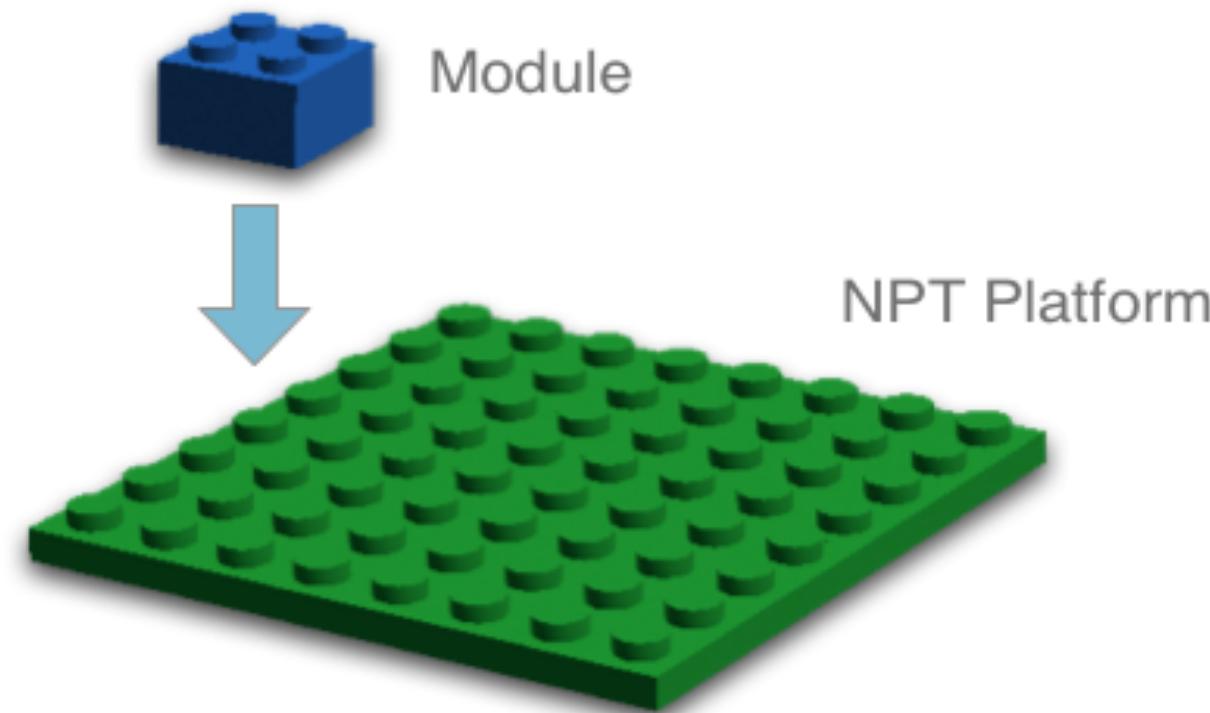
NPT Startup web presence



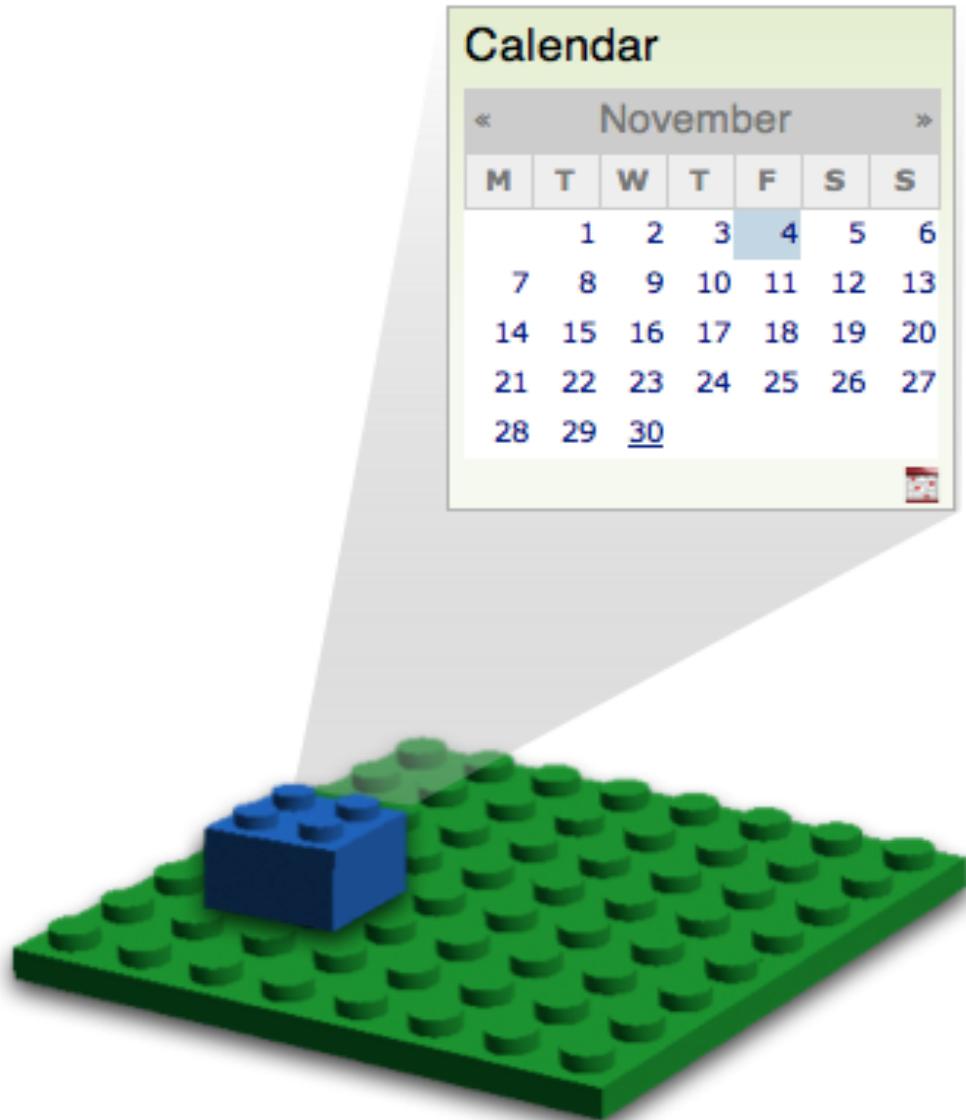
NPT Startup



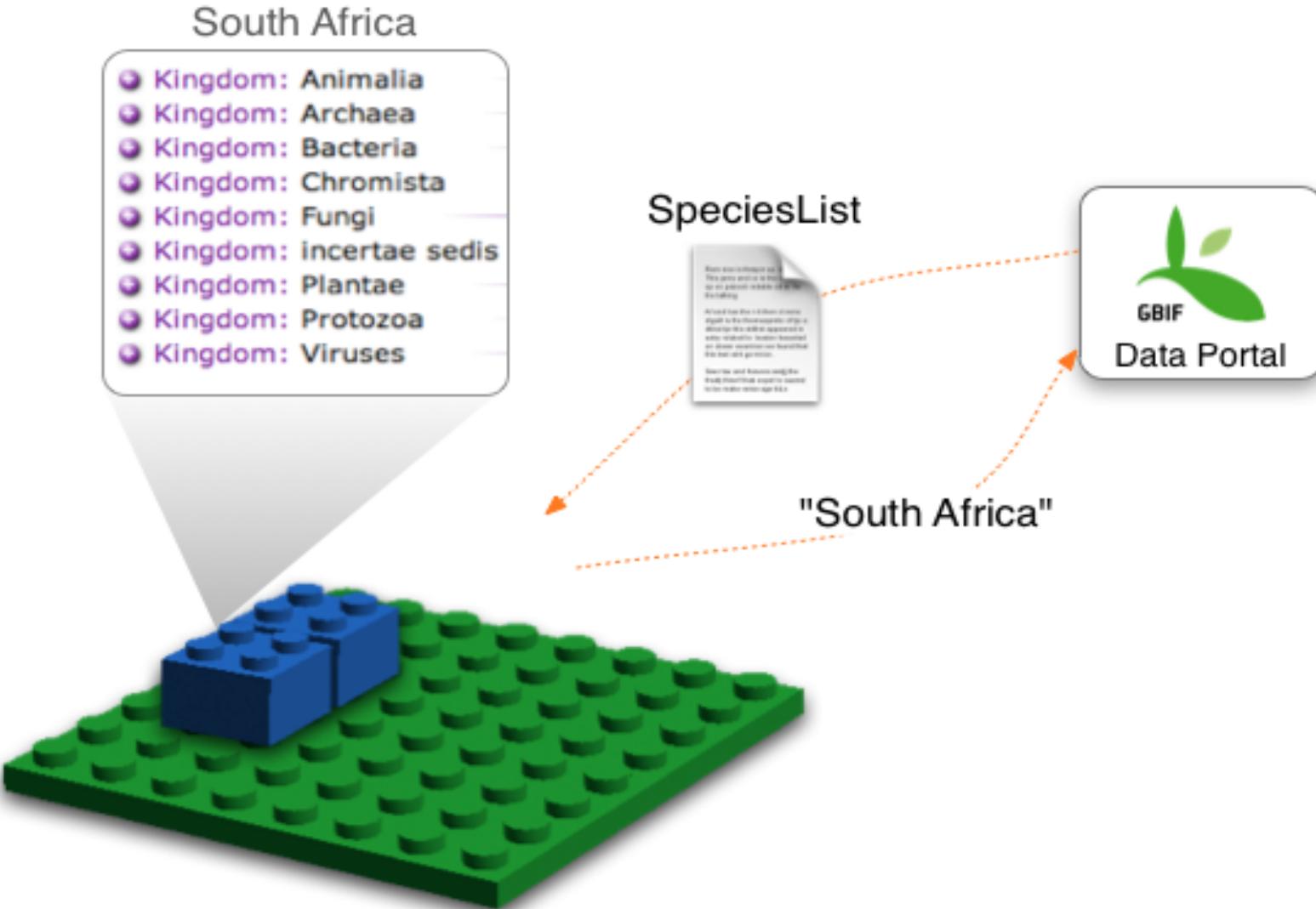
NPT kan utvides ved å utvikle eller installere ferdige **Moduler**.



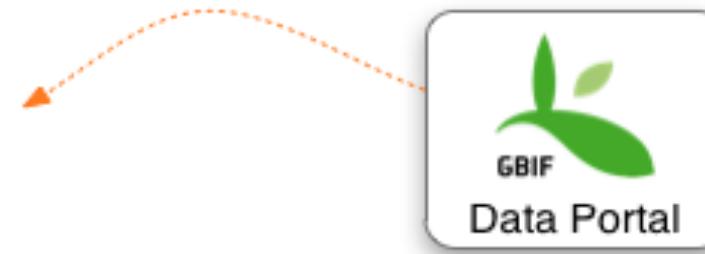
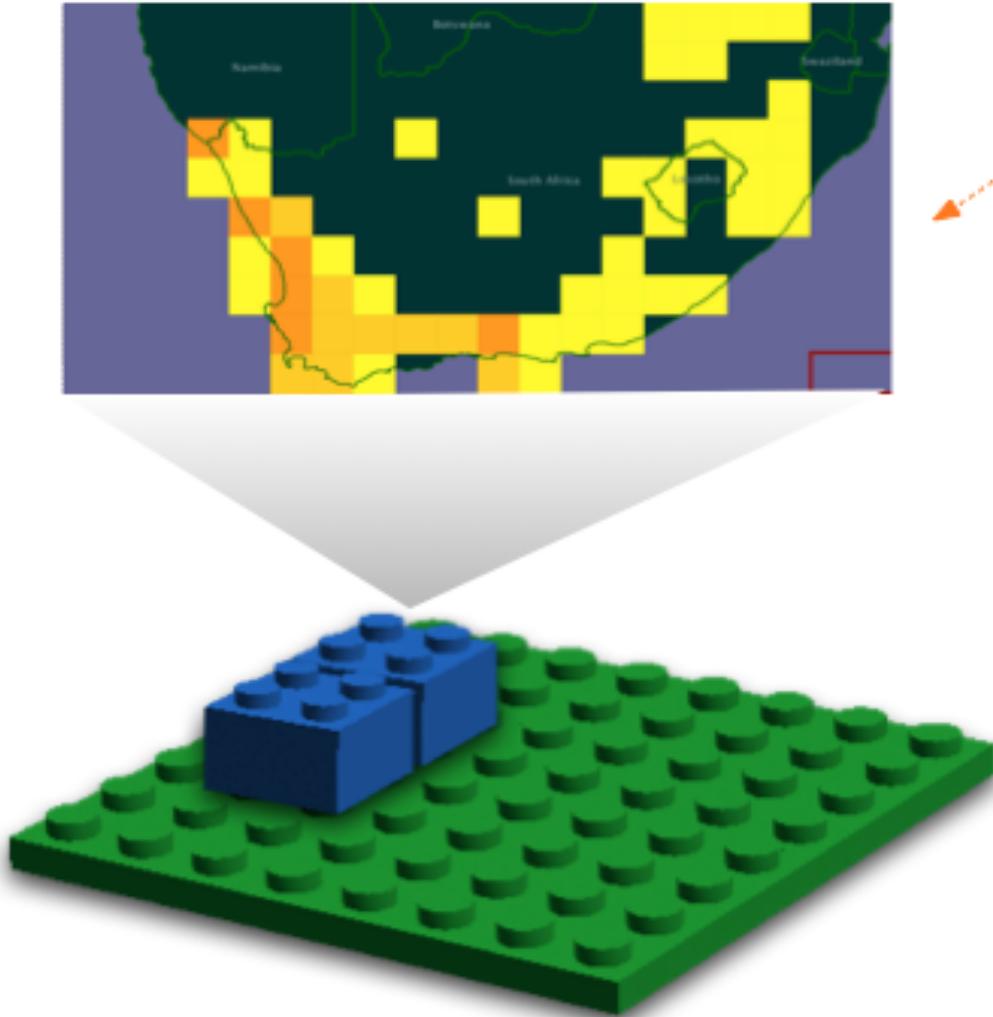
En modul kan vise en kalender på din webportal.



En annen modul kan vise en liste med artsnavn basert på artsobservasjoner rapportert inn til GBIF portalen.

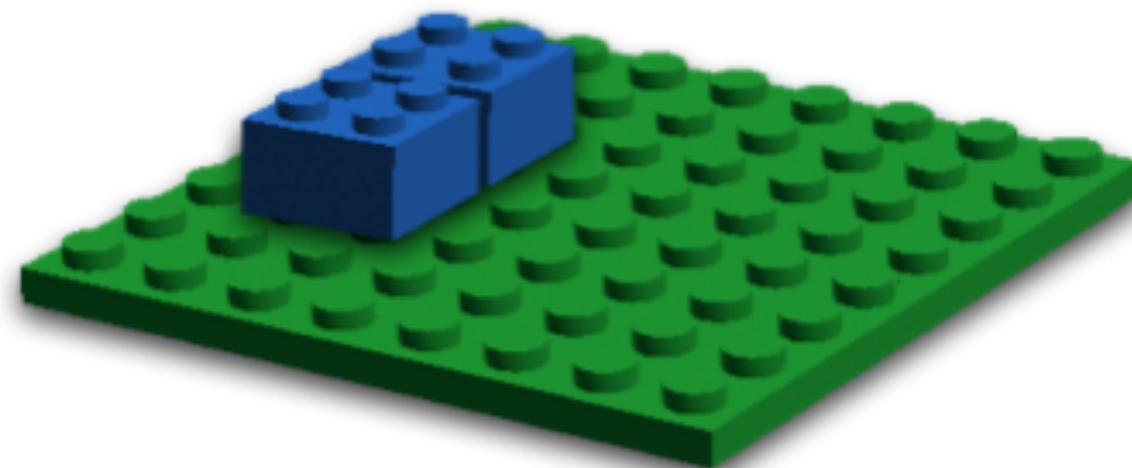


Modul som viser et GBIF data kart for hver taxon i en artsliste

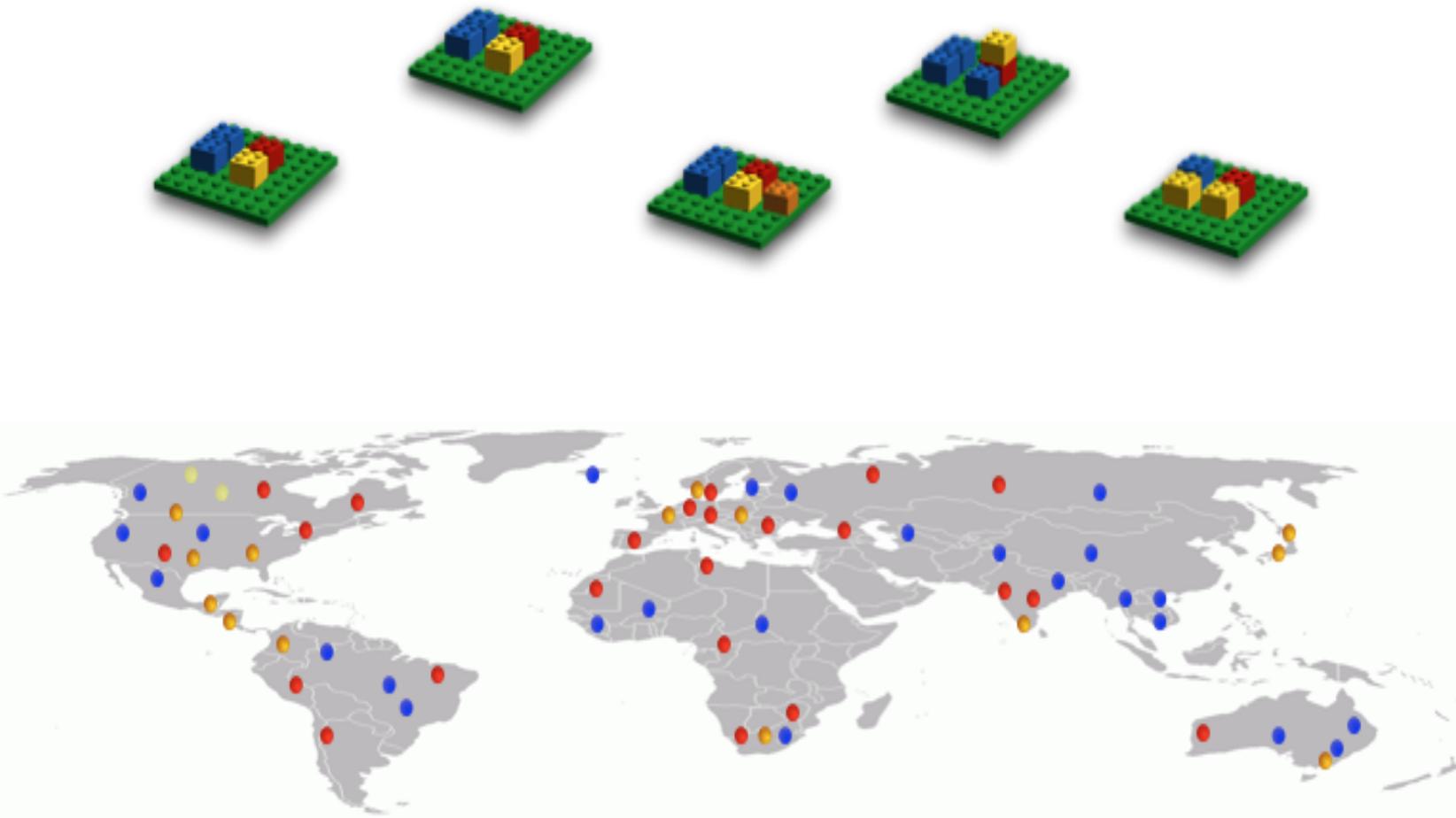


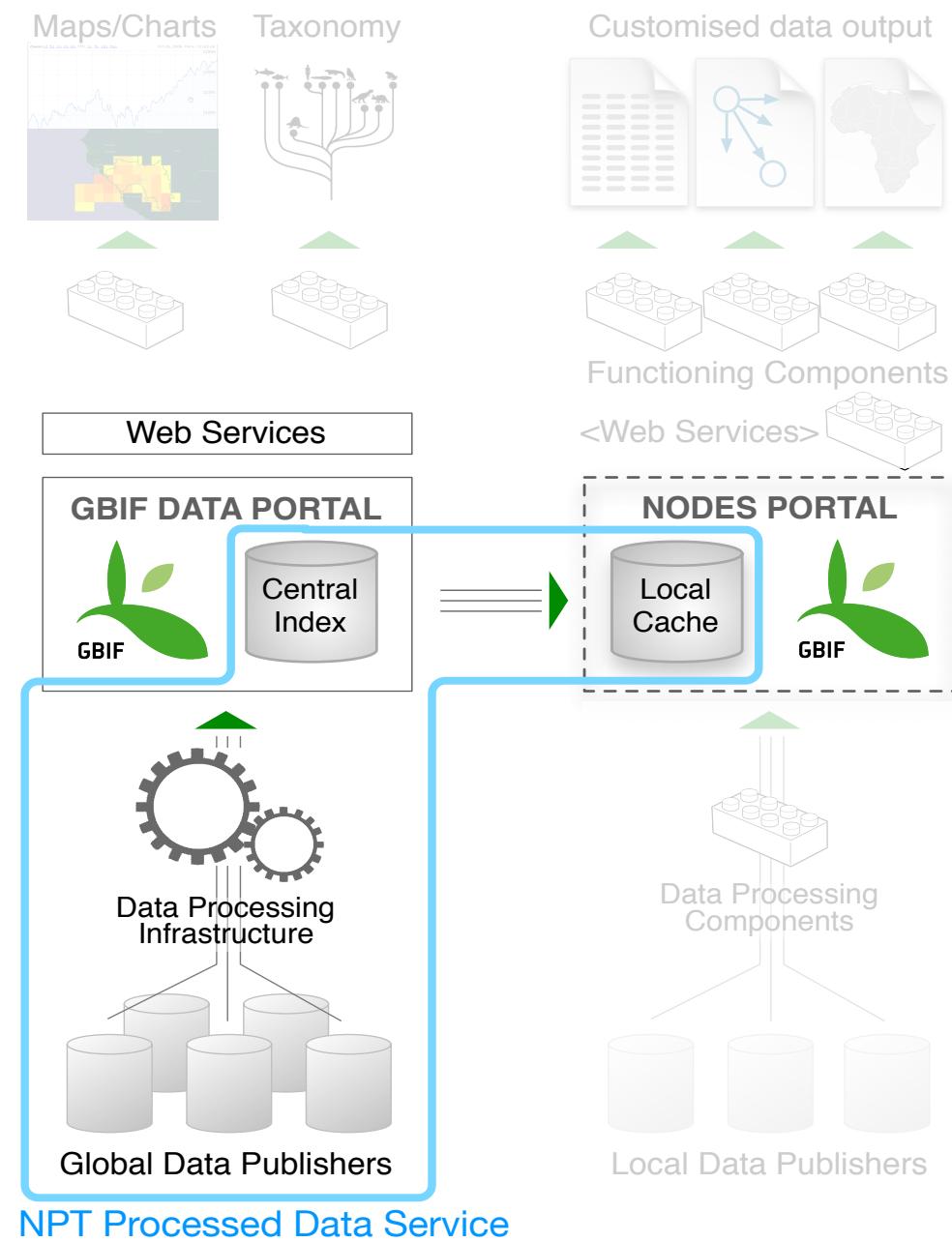
Standard oppsett fra GBIF leverer et startpunkt for videre utvikling.

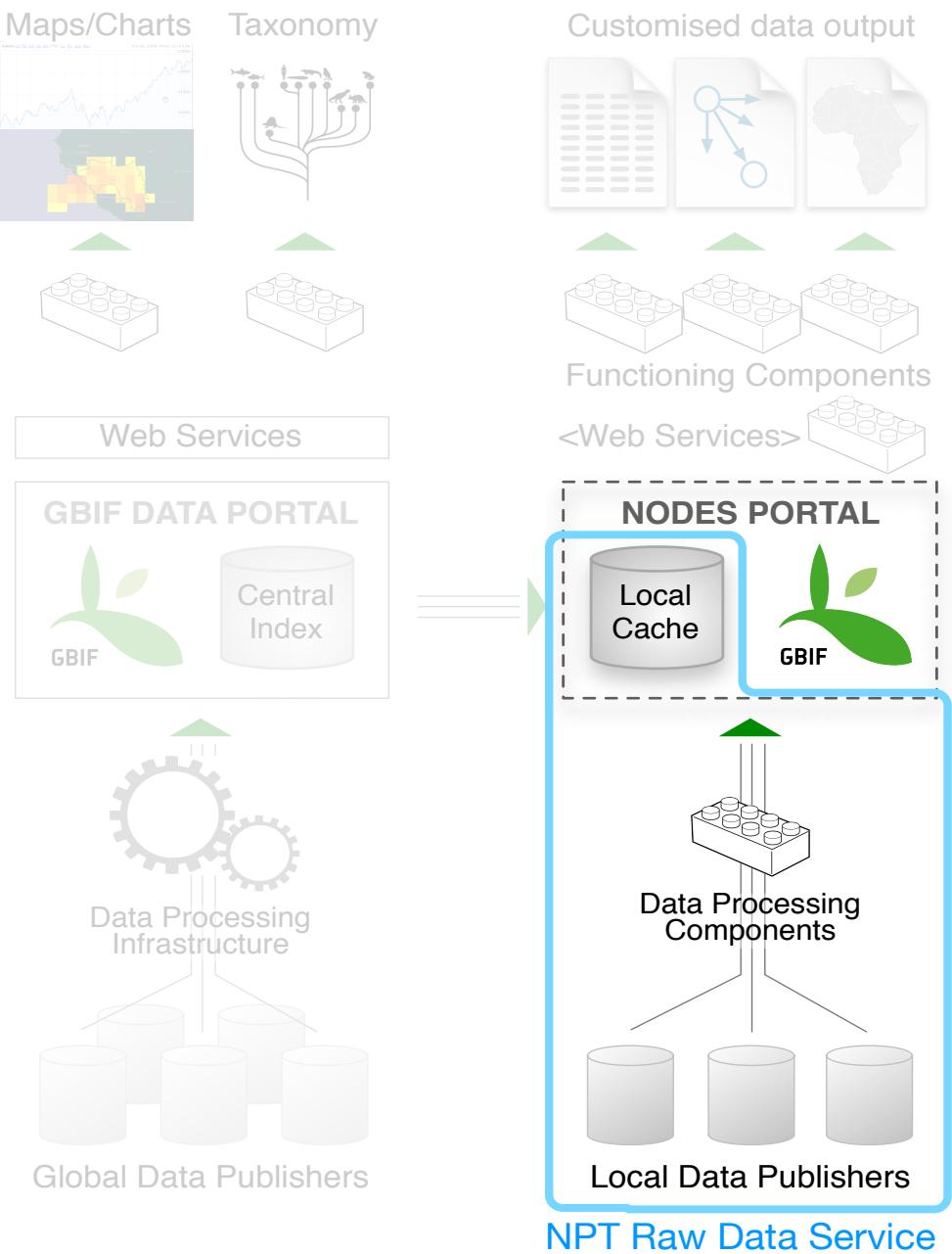
- Leverer en konfigurerbar webportal.
- Leverer et rammeverk for der nye moduler kan legges til.
- Viser GBIF portal data som datakart for ditt land eller din region.



Ulike portaler vil implementere helt
ulike sett av moduler for å
imøtekommne sine egne behov.









Home



Nodes Portal Toolkit (NPT)

The vision driving the development of the GBIF Nodes Portal Toolkit is to bridge the technological gaps existing within the Nodes community and to optimize data flows between potential regional or thematic providers and the Secretariat.

[Subscribe to feed](#)

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[Group discussion](#)

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Username Password

Nodes Portal Toolkit (NPT)



Description:

The Nodes Portal Toolkit (NPT) is envisioned as a suite of informatics tools designed to help GBIF Participants to deploy, maintain and extend biodiversity data portals (at the national, regional or thematic levels).

NPT will allow you to setup your own, customized biodiversity data portal.

[Find out more on our NPT pages](#)

Owner: Bruno Danis

Group members: 38

Brief description: The vision driving the development of the GBIF Nodes Portal Toolkit is to bridge the technological gaps existing within the Nodes community and to optimize data flows between potential regional or thematic providers and the Secretariat.

Tags: [community](#), [webportals](#), [biodiversity](#), [bioinformatics](#), [npt](#), [nodes](#)

Website: <http://npt-demo.gbif.org>

Latest discussion



[Comparing PostgreSQL 9.1 vs MySQL 5.6 on Drupal 7.x](#)

Posts: 1



[A renewed communication strategy](#)

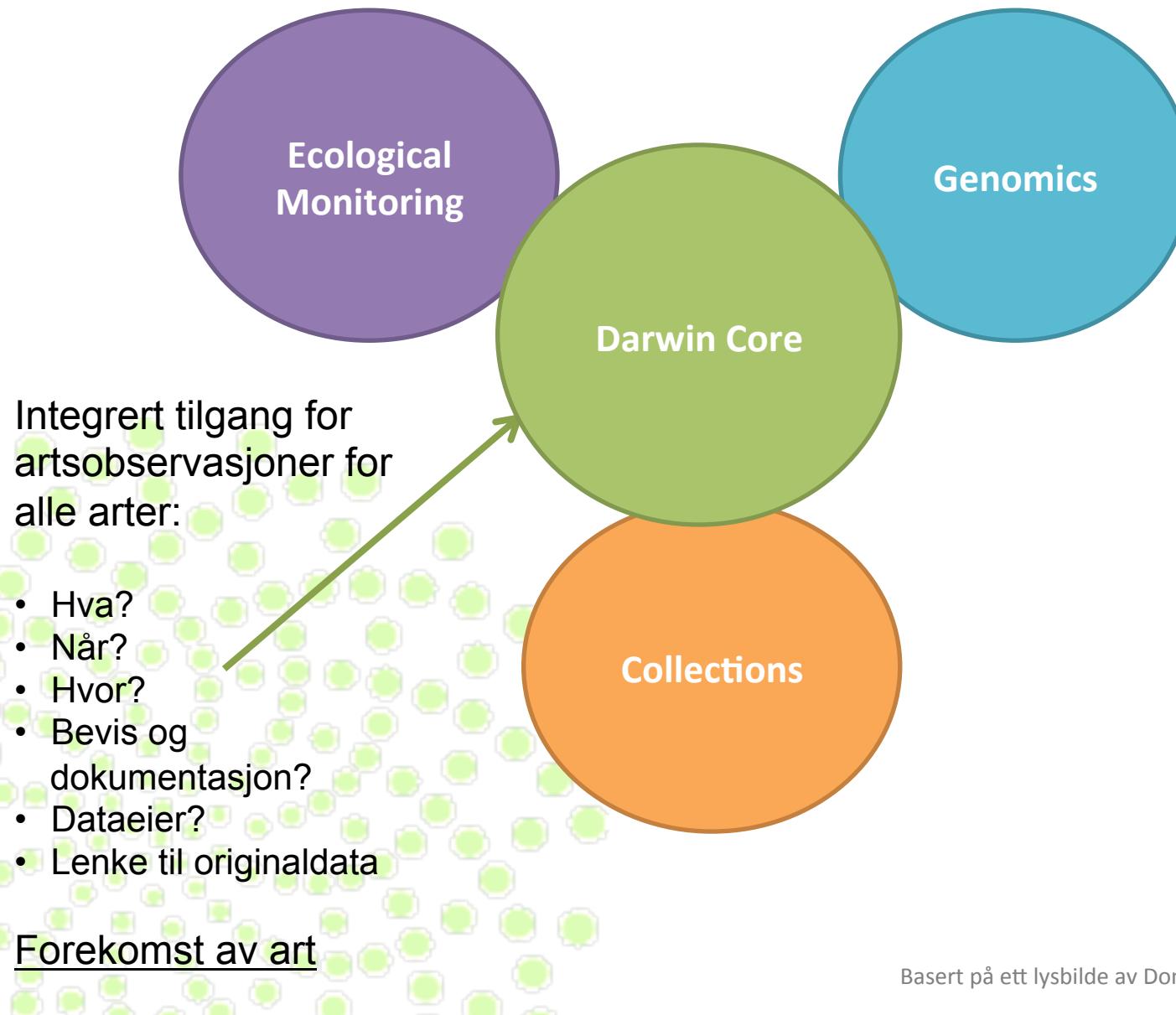
Posts: 1



Darwin Core - terminologi, vokabulær

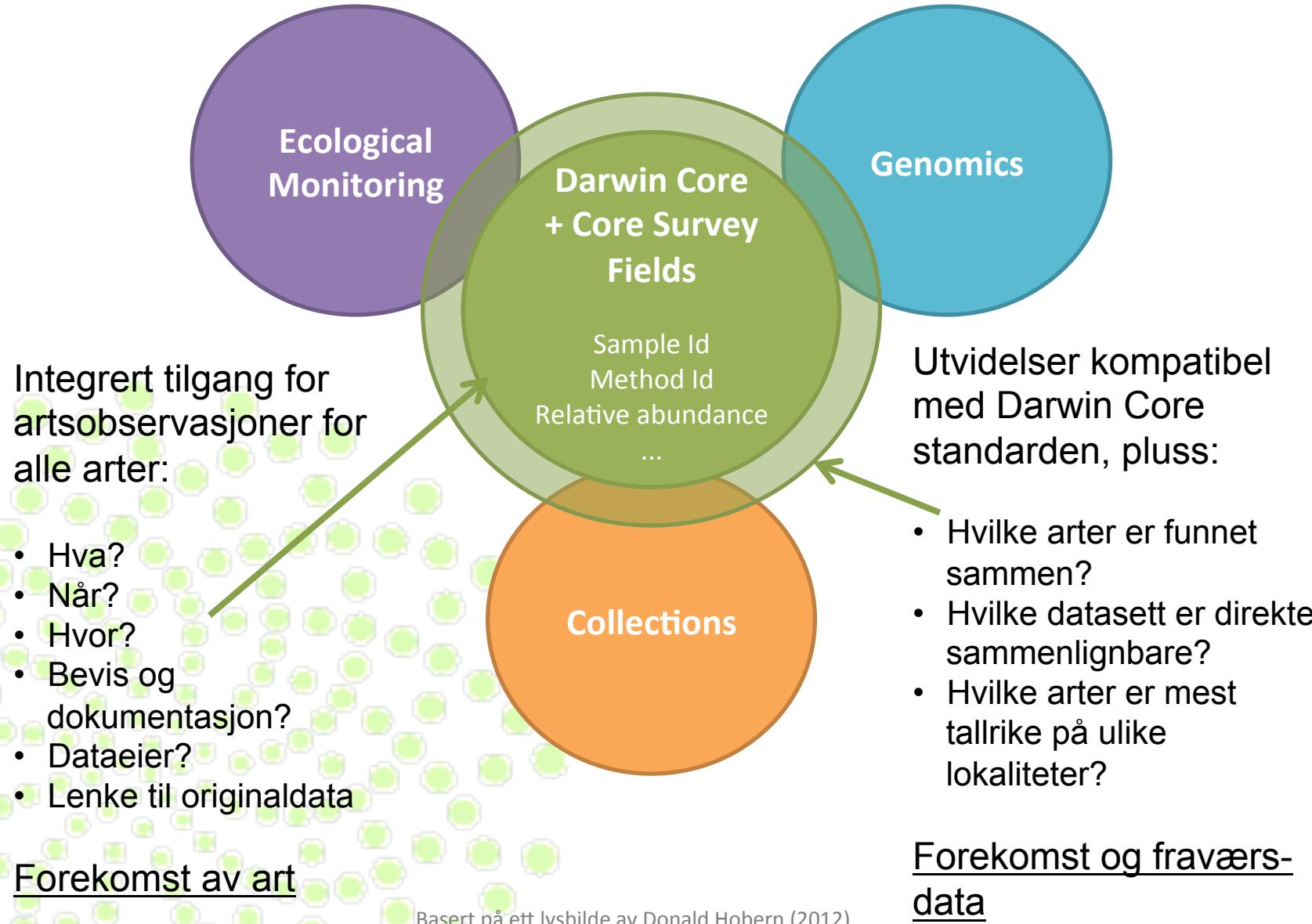
continent
taxonRank basisOfRecord kingdom
institutionCode scientificName family institutionID
vernacularName coordinatePrecision recordedBy taxonID
verbatimTaxonRank originalNameUsage nomenclaturalCode
nameAccordingTo higherClassification namePublishedInID
class parentNameUsage occurrenceID originalNameUsageID nameAccordingToID
order higherGeographyID associatedTaxa verbatimCoordinateSystem datasetID
minimumElevationInMeters coordinateUncertaintyInMeters parentNameUsageID
infraspecificEpithet acceptedNameUsageId genus scientificNameAuthorship behavior
collectionCode previousIdentifications maximumDepthInMeters taxonConceptID
geodeticDatum reproductiveCondition decimalLongitude namePublishedIn phylum
catalogNumber acceptedNameUsage nomenclaturalStatus taxonRemarks
specificEpithet higherGeography decimalLatitude subgenus
taxonomicStatus scientificName islandGroup
lifeStage locationID collectionID waterBody

Tverrsektorell artsdata



Basert på ett lysbilde av Donald Hobern (2012)

Tverrsektorell artsdata



Record-level Terms

[dcterms:type](#) | [dcterms:modified](#) | [dcterms:language](#) | [dcterms:rights](#) | [dcterms:rightsHolder](#) | [dcterms:accessRights](#) | [dcterms:bibliographicCitation](#) | [dcterms:references](#)
[institutionID](#) | [collectionID](#) | [datasetID](#) | [institutionCode](#) | [collectionCode](#) | [datasetName](#) | [ownerInstitutionCode](#) | [basisOfRecord](#) | [informationWithheld](#) | [dataGeneralizations](#) | [dynamicProperties](#)

Occurrence

[occurrenceID](#) | [catalogNumber](#) | [occurrenceRemarks](#) | [recordNumber](#) | [recordedBy](#) | [individualID](#) | [individualCount](#) | [sex](#) | [lifeStage](#) | [reproductiveCondition](#) | [behavior](#) | [establishmentMeans](#) | [occurrenceStatus](#) | [preparations](#) | [disposition](#) | [otherCatalogNumbers](#) | [previousIdentifications](#) | [associatedMedia](#) | [associatedReferences](#) | [associatedOccurrences](#) | [associatedSequences](#) | [associatedTaxa](#)

Event

[eventID](#) | [samplingProtocol](#) | [samplingEffort](#) | [eventDate](#) | [eventTime](#) | [startDayOfYear](#) | [endDayOfYear](#) | [year](#) | [month](#) | [day](#) | [verbatimEventDate](#) | [habitat](#) | [fieldNumber](#) | [fieldNotes](#) | [eventRemarks](#)

dcterms:Location

[locationID](#) | [higherGeographyID](#) | [higherGeography](#) | [continent](#) | [waterBody](#) | [islandGroup](#) | [island](#) | [country](#) | [countryCode](#) | [stateProvince](#) | [county](#) | [municipality](#) | [locality](#) | [verbatimLocality](#) | [verbatimElevation](#) | [minimumElevationInMeters](#) | [maximumElevationInMeters](#) | [verbatimDepth](#) | [minimumDepthInMeters](#) | [maximumDepthInMeters](#) | [minimumDistanceAboveSurfaceInMeters](#) | [maximumDistanceAboveSurfaceInMeters](#) | [locationAccordingTo](#) | [locationRemarks](#) | [verbatimCoordinates](#) | [verbatimLatitude](#) | [verbatimLongitude](#) | [verbatimCoordinateSystem](#) | [verbatimSRS](#) | [decimalLatitude](#) | [decimalLongitude](#) | [geodeticDatum](#) | [coordinateUncertaintyInMeters](#) | [coordinatePrecision](#) | [pointRadiusSpatialFit](#) | [footprintWKT](#) | [footprintSRS](#) | [footprintSpatialFit](#) | [georeferencedBy](#) | [georeferencedDate](#) | [georeferenceProtocol](#) | [georeferenceSources](#) | [georeferenceVerificationStatus](#) | [georeferenceRemarks](#)

GeologicalContext

[geologicalContextID](#) | [earliestEonOrLowestEonothem](#) | [latestEonOrHighestEonothem](#) | [earliestEraOrLowestErathem](#) | [latestEraOrHighestErathem](#) | [earliestPeriodOrLowestSystem](#) | [latestPeriodOrHighestSystem](#) | [earliestEpochOrLowestSeries](#) | [latestEpochOrHighestSeries](#) | [earliestAgeOrLowestStage](#) | [latestAgeOrHighestStage](#) | [lowestBiostratigraphicZone](#) | [highestBiostratigraphicZone](#) | [lithostratigraphicTerms](#) | [group](#) | [formation](#) | [member](#) | [bed](#)

Identification

[identificationID](#) | [identifiedBy](#) | [dateIdentified](#) | [identificationReferences](#) | [identificationVerificationStatus](#) | [identificationRemarks](#) | [identificationQualifier](#) | [typeStatus](#)

Taxon

[taxonID](#) | [scientificNameID](#) | [acceptedNameUsageID](#) | [parentNameUsageID](#) | [originalNameUsageID](#) | [nameAccordingToID](#) | [namePublishedInID](#) | [taxonConceptID](#) | [scientificName](#) | [acceptedNameUsage](#) | [parentNameUsage](#) | [originalNameUsage](#) | [nameAccordingTo](#) | [namePublishedIn](#) | [namePublishedInYear](#) | [higherClassification](#) | [kingdom](#) | [phylum](#) | [class](#) | [order](#) | [family](#) | [genus](#) | [subgenus](#) | [specificEpithet](#) | [infraspecificEpithet](#) | [taxonRank](#) | [verbatimTaxonRank](#) | [scientificNameAuthorship](#) | [vernacularName](#) | [nomenclaturalCode](#) | [taxonomicStatus](#) | [nomenclaturalStatus](#) | [taxonRemarks](#)

Auxiliary Terms

<http://rs.tdwg.org/dwc/terms/>

ResourceRelationship

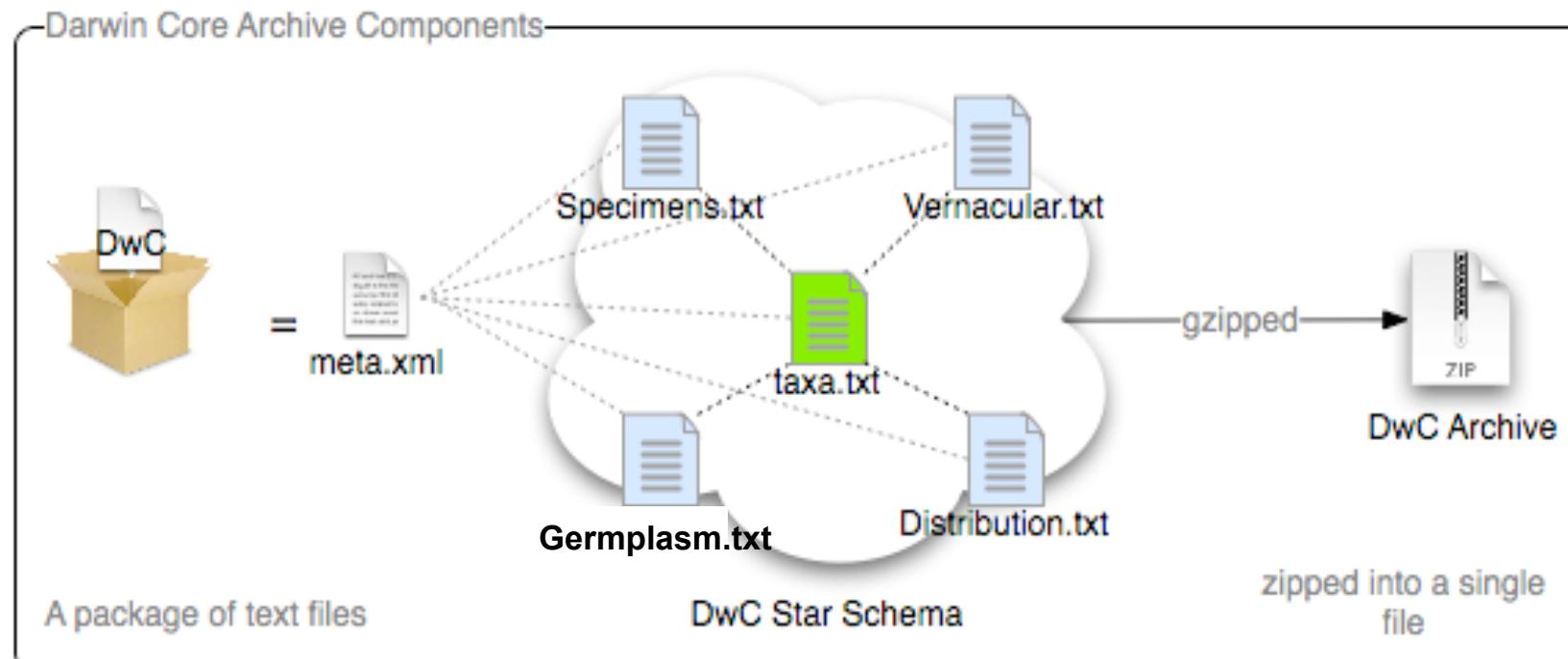
[resourceRelationshipID](#) | [resourceID](#) | [relatedResourceID](#) | [relationshipOfResource](#) | [relationshipAccordingTo](#) | [relationshipEstablishedDate](#) | [relationshipRemarks](#)

MeasurementOrFact

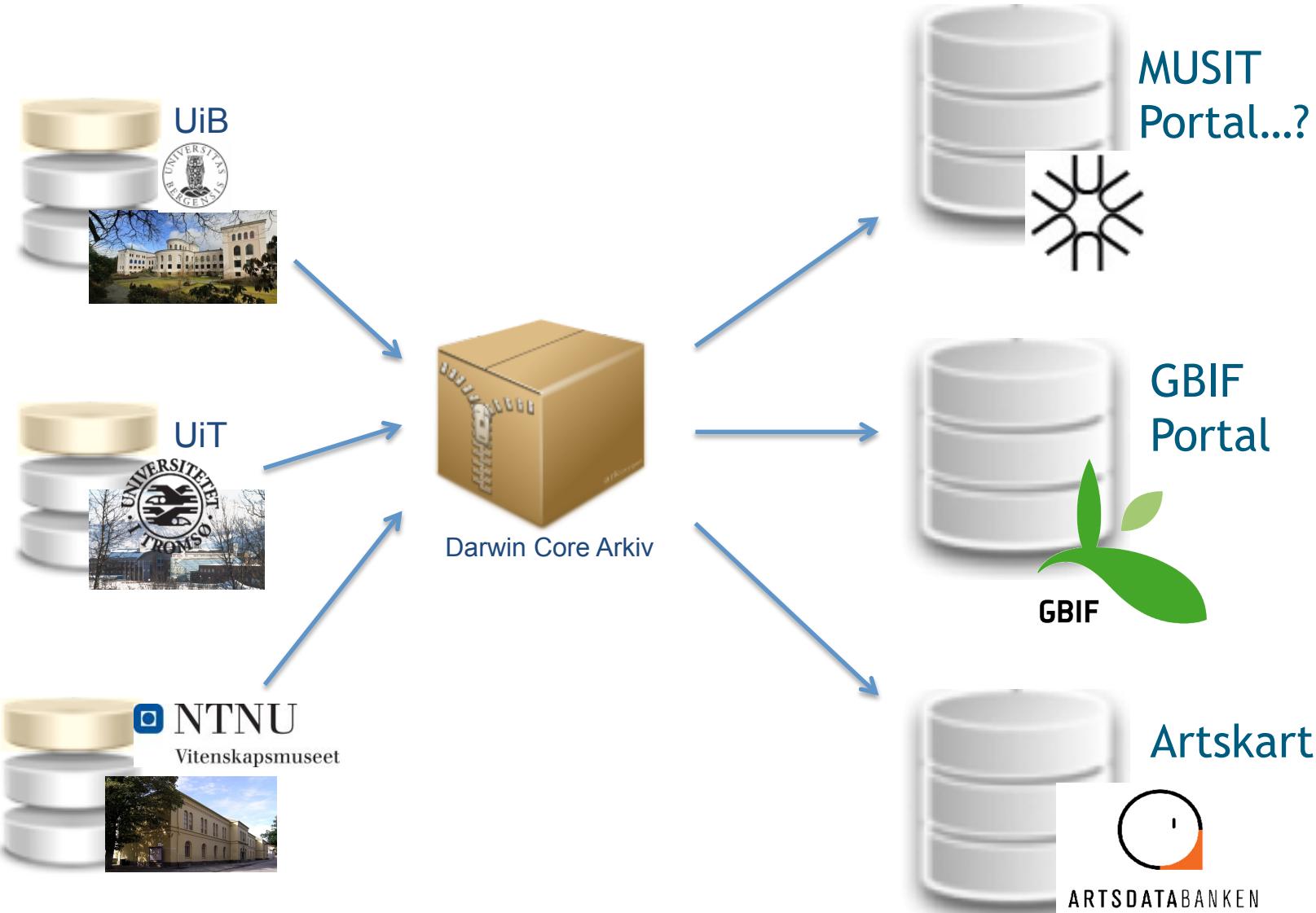
[measurementID](#) | [measurementType](#) | [measurementValue](#) | [measurementAccuracy](#) | [measurementUnit](#) | [measurementDeterminedDate](#) | [measurementDeterminedBy](#) | [measurementMethod](#) | [measurementRemarks](#)

Darwin Core Arkiv (DwC-A)

- ❖ Publiseringsformat for Darwin Core termer inkludert flere standardiserte utvidelser.
- ❖ Enkelt tekstbasert format.
- ❖ Zip-komprimert filarkiv.



Muligheter med Darwin Core:

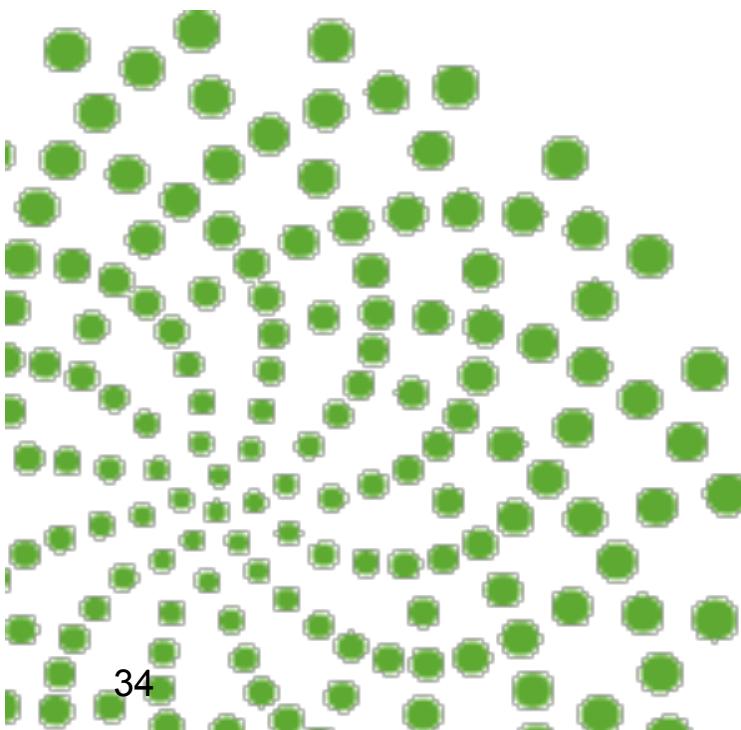


Samlinger publiseres fra dataeier som **ett** Darwin Core arkiv (DwC-A).
Ulike datatyper fra samme DwC-A kan inkluderes til **ulike data portaler**.



AKTUELLE FOKUS

- Stabile ID nøkler (UUID, QR code)
- Datasett metadata (data manuskript)



STABILE ID NØKLER

- Globalt unike ID nøkler.
- Skalerbar modell, antall ID nøkler.
- Sosial aksept i fagmiljø.
- Lang livssyklus for ID nøkler.
- *"Resolution service(s)"*.
- Kostnad per ID nøkkel.
- Bruker- eller maskin-vennlig.
- Løsning for å generere nye ID nøkler.
 - Sentralisert system for nye ID nøkler.
 - Føderert generering av ID ved kilde.



UNIVERSALLY UNIQUE IDENTIFIER (UUID)



- En UUID er et 16-octet (128-bit) nummer.
- Eksempel:
[C37E3F9B-BCAF-4479-8EB7-3346A2DB2373](#)
- Sannsynligheten at en duplisert nøkkel blir generert er omkring 50% dersom alle personer på hele jorden lager 600 million UUIDs hver.
- Tillater **lettvindt generering av nøkler ved kilden** i et føderert nettverk.

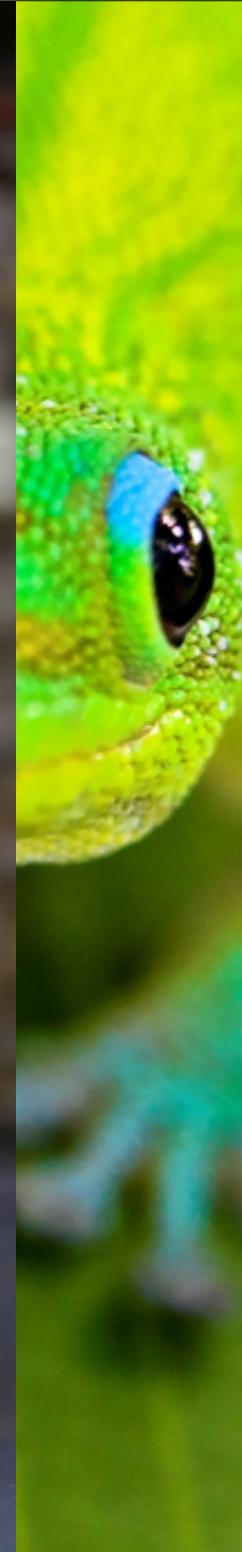
QR CODE



- “Quick Response Code” (QR code).
- En type matriks strekkode (eller to-dimensjonal kode).
- Populær grunnet **hurtig maskinlesbar** og stor **kapasitet for lagring**.
- Anvendelsen av QR koder er **gratis uten begrensende lisensbetingelser**.
- Format for QR koder er **entydig definert** og publisert som en ISO standard.
- Oppfunnet i Japan av et datterselskap til Toyota: Denso Wave i **1994**.

QR-kode for museumsobjektene ved NHM-UiO ville kunne leve:

- **Maskinlesbar id** med en ordinær smart phone (eller PDA).
- Ny og effektiv **arbeidsflyt** for samlingsarbeide.
- Implementering av **stabile id nøkler** velegnet for databaser.



DATA MANUSKRIFT



- Peer review løsning for biodiversitetsdata.
- Vitenskapelig anerkjennelse for publisering av data.
- Mekanisme for bedre **datakvalitet**.
- Mekanisme for **sitering av data**.
- Metadata format: *Ecological Metadata Language (EML)*, Dublin Core, Darwin Core, *Natural Collections Descriptions (NCD)*...
- Nye muligheter → Hvert datasett publisert til GBIF med eget data manuskript...?



Data Papers

Ecology, 90(9), 2009, p. 2648
© 2009 by the Ecological Society of America

PanTHERIA: a species-level database of life history, ecology, and geography of extant and recently extinct mammals

Ecological Archives E090-184

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ZooKeys 150: 407–417 (2011)
doi: 10.3897/zookeys.150.2002
www.zookeys.org

DATA PAPER



Launched to accelerate biodiversity research

Literature based species occurrence data of birds of northeast India

Sujit Narwade¹, Mohit Kalra¹, Rajkumar Jagdish¹, Divya Varier¹, Sagar Satpute¹, Noor Khan¹, Gautam Talukdar², V. B. Mathur², Karthikeyan Vasudevan², Dinesh Singh Pundir², Vishwas Chavan³, Rajesh Sood³

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Citation: Narwade S, Kalra M, Jagdish R, Varier D, Satpute S, Khan N, Talukdar G, M DS, Chavan V, Sood R (2011) Literature based species occurrence data of birds of north (Eds) e-Infrastructures for data publishing in biodiversity science. ZooKeys 150: 407–417

Abstract

The northeast region of India is one of the world's most significant biodiversity rich bird areas in India, it is an important route for migratory birds and bird species. This paper describes a literature-based dataset of species occurring in India. The occurrence records documented in the dataset are distributed across various states: Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Mizoram, Nagaland, and West Bengal. The geospatial scope of the dataset represents 24°N and 78°E to 94°E longitude, and it comprises over 2400 occurrence records. The dataset has been collated from scholarly literature published between 1915 and 2008, especially from the *Bombay Natural History Society* (BNHS). The temporal scale of the dataset spans from 1909 to 2007. The dataset has been developed by employing various methods in the database are scientific name, taxonomic classification, temporal range, geo-coordinate precision, data collector, basis of record and primary source. The temporal and geospatial quality of more than 50% of the data records has been annotated with geospatial coordinate precision. Where possible, data records are annotated with geospatial coordinate precision. This dataset is being constantly updated with the addition of new data records of documented occurrences. The dataset can be used in species distribution studies. It is planned to expand the scope of the dataset to collate bird species of the Indian peninsula.

PhytoKeys 12: 59–67 (2012)
doi: 10.3897/phytokeys.12.2849
www.phytokeys.com

ZooKeys 152: 87–91 (2011)
doi: 10.3897/zookeys.152.2473
www.zookeys.org

DATA PAPER



Launched to accelerate biodiversity research

Project Description: DNA Barcodes of Bird Species in the National Museum of Natural History, Smithsonian Institution, USA

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Florabank1: a grid-based database on vascular plant distribution in the northern part of Belgium (Flanders and the Brussels Capital region)

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Biodiversity Data Journal

Making your data count!



2012
United Nations Decade on Biodiversity

HVORFOR ER GBIF VIKTIG?

FNs “*Millennium Ecosystem Assessment*” (2005) viste at menneskelige handlinger ofte leder til **irreversible tap innen det biologiske mangfoldet**, og at disse tap har vært større i de siste 50 årene enn noen gang før i menneskehets historie.

Biologisk mangfold er nøkkelen til en bærekraftig fremtid – og evnen av naturlige og sosiale systemer for å tilpasse seg endringer, er avgjørende for nesten alle aspekter av menneskets velvære.

Fordi **menneskeskapte trusler mot biologisk mangfold oppstår over brede romlige og tidsmessige skalaer**, biologisk mangfold og økosystem overvåkning, varsling, og risikovurderinger krever data som er organisert i en globalt og lett-tilgjengelig, integrert infrastruktur.

GBIF’s Data Portal leverer denne infrastrukturen.



Takk for
oppmerksomheten!

GBIF Norge

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Innlegg ved MUSIT seminar
på Gardermoen, 6 februar 2013



**“Now! *That* should clear up
a few things around here!”**

*Furthermore, I
think that we
need persistent
identifiers!*



Cato the Elder ended all his speeches in the senate of Rome with: "*Ceterum autem censeo Carthaginem esse delendam*" (English: "Furthermore, I think Carthage must be destroyed").

