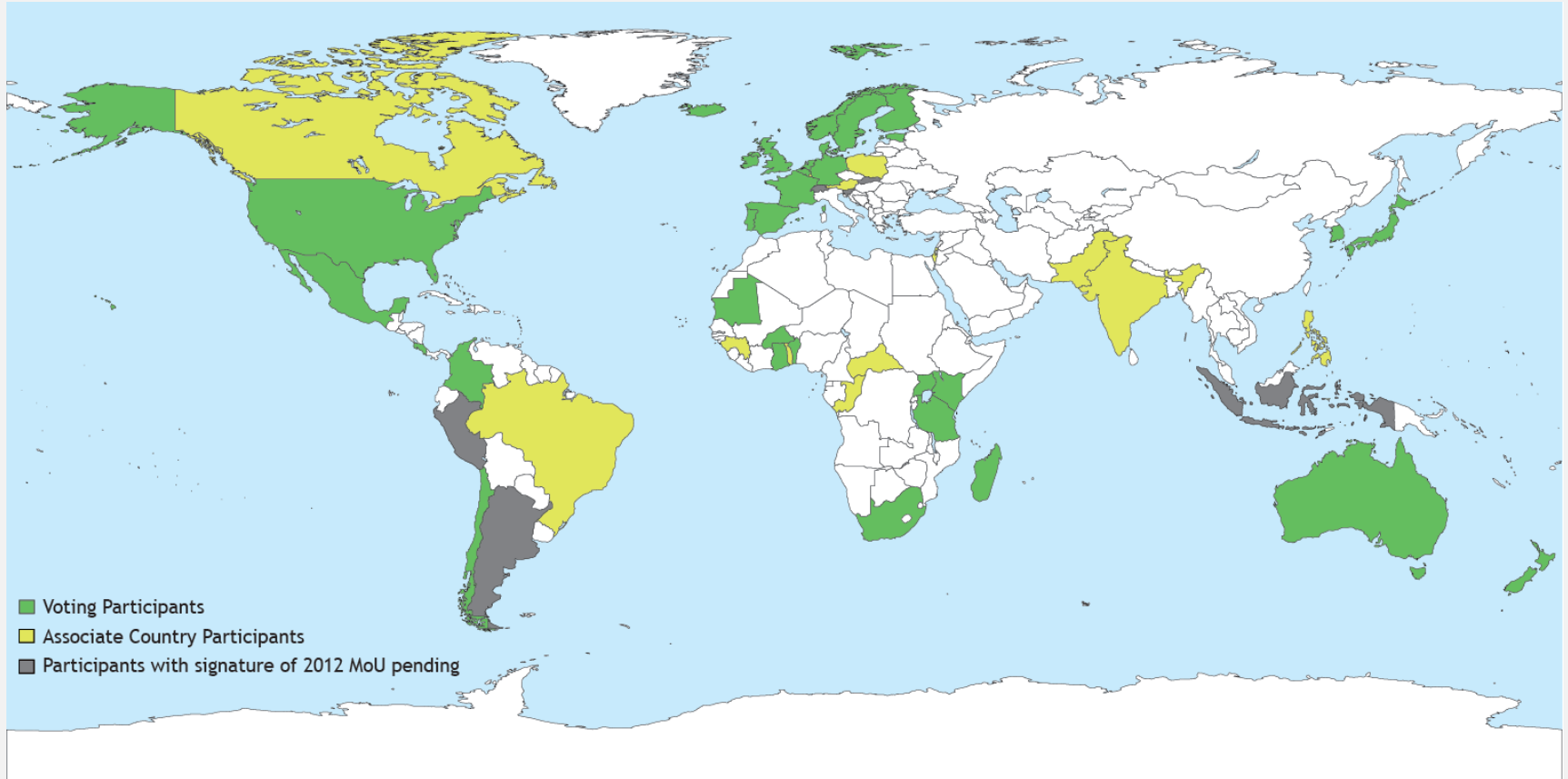# GBIF & LifeWatch

Francisco Pando
GBIF Spain-CSIC

2nd LifeWatch e-Infrastructure Construction Operational Meeting
ICT CORE and distributed construction operations

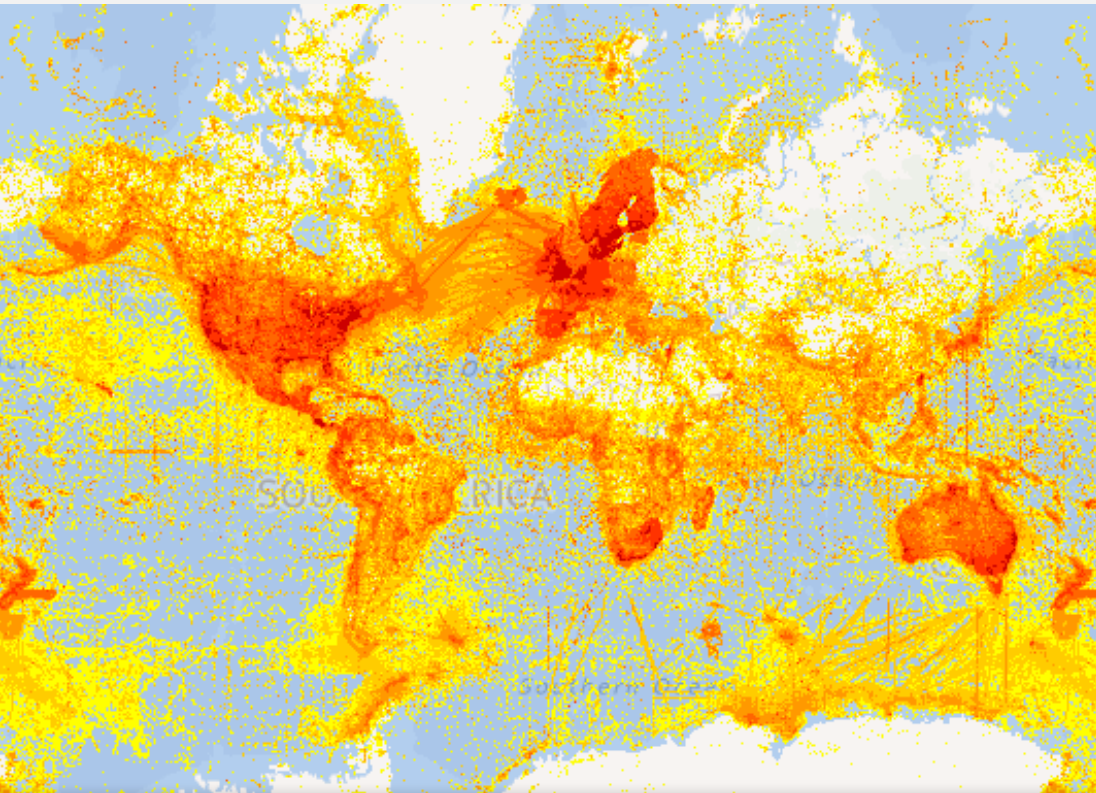Carmen de la Victoria, Granada, Spain. Jan . 2014

GBIF in one slide

- Inter-governmental organization
- Mission: "To facilitate free and open access to biodiversity data worldwide, via the Internet, to underpin scientific research, conservation and sustainable development."
- 429.391.316 data records
- 14,632 datasets
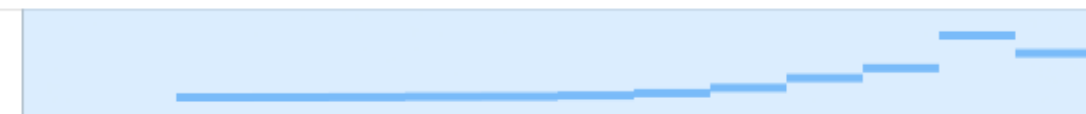- Since 2001

GBIF: an intergovernmental initiative to share biodiversity information

Voting Participants
Associate Country Participants
Participants with signature of 2012 MoU pending

Currently 52 countries; 36 International Organisations…

- free and open data under a common standard

GBIF is more than a "Data souce", it is an infrastructure

- Physical infrastructure
  - Physical infrastructure, cyberinfrastructure (portals, IT tools), human resources, and expertise, and program management and coordination.
- Information infrastructure
  - Data workflows
  - Datasets
  - Data openness
  - Data products
- Capability infrastructure
  - Knowledge base and management, training
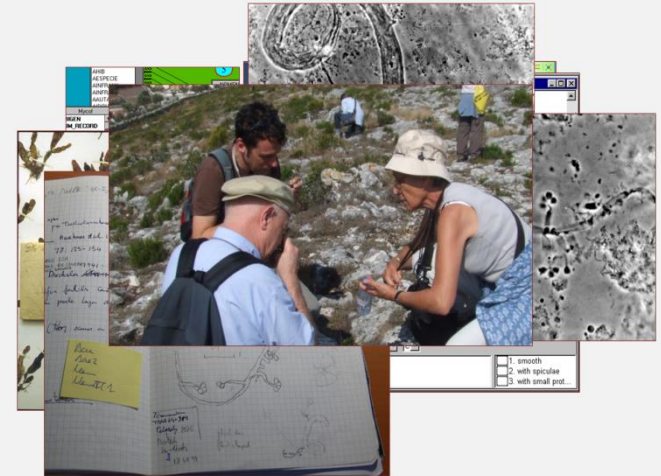 - Standard development
  - Data gateways development

Resources <> e-Infrastructure <> Composition <> Services

Physical infrastructure

http://www.gbif.org

Information infrastructure

Data workflows

Data acquisition

- Field sampling
- Digitalization
  - collections
  - literature
- Other sources
  (citizen science, IAs,…

GBIF is data from everyone to everyone ... this includes LTER and other observatory-based data

Data processing

- Protocols
- Standards
- QA/QC
- Documentation/Metadata

Publishing Species Checklists
Step-by-Step Guide
Version 1.01

Mandatory Terms (must be included)
Occurrence Data
- occurrenceID: Acts like a Globally Uni
  (GUID). If you do not have a GUID field
  is to concatenate the values for
- institutionCode
- collectionCode
- catalogNumber
- scientificName

Datasets

- Publication
- Archival
- Usage
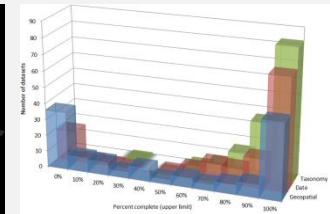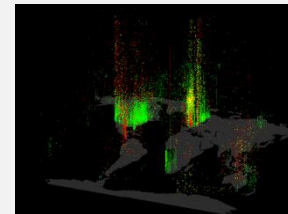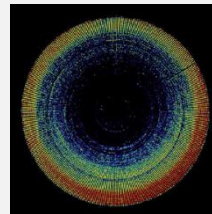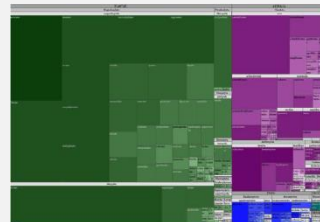
Avoid duplication > first, knowing what we know,…

Culture change > data for the immediate ends, also to be reusable

Capability infrastructure

- Knowledge base and management, training
    - workshops, manuals
    - e-Learning, repositories
- Standard development
    - Darwin Core
    - GMP

- Data gateways development
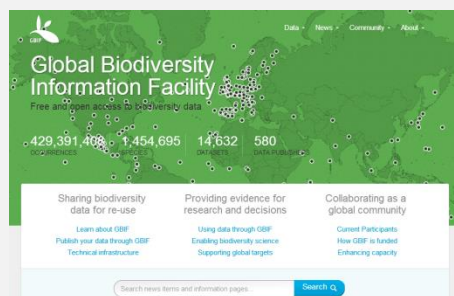
LifeWatch & GBIF

Memoradum of Cooperation between GBIF and LifeWatch

June the 23rd, 2010

A Memorandum of Cooperation (MoC) between LifeWatch and GBIF has been signed.

This MoC provides the basis for both projects to collaborate together to develop and share critical biodiversity informatics infrastructure and information, in order to further their respective mandates. The complementarities and commonalities of both initiatives match so nicely that it is a unique opportunity for nodes to work better on making biodiversity data accessible and used for the benefit of our societies.

More information: http://www.gbif.es/ficheros/MoC_GBIF-LifeWatch.pdf

---

3. Objective of this Memorandum of Cooperation (MoC)

LifeWatch is an integrating infrastructure framework that can benefit from and accommodate many GBIF developments to date, including data standards and protocols, supporting software, taxonomic services and the primary biodiversity data that GBIF serves. GBIF will look to the LifeWatch initiative, with its intended provision of relevant infrastructure, services and tools, to further enable the mobilisation, publication, deployment and use of GBIF data in a suite of application tools.

The objective of this MoC is to formalise a framework for co-operative and collaborative work between the ongoing GBIF and new LifeWatch initiatives while recognising their respective independent yet complementary missions as summarized under article 2 above.

Disclaimer & disclosure of interests

- I am not a GBIF Official, I have no LW appointment, I talk in my personal capacities
- I have been Program Officer at GBIF Secretariat for 2 years
- I have been Chair of GBIF Nodes Comm. and GBIF executive Comm. member (2008-2012)
- I am director of the GBIF Spain National node
- I am researcher of CSIC

GBIF is going through dificulties

GBIF Annual Report 2012

Table 1 : GBIF First Financial Year, third phase, contributions received for 2012

	MOU signature date	Country		Agreed Financial Contribution 2012	Received Financial Contribution
				4,312,250	2,254,057

http://www.gbif.es/ficheros/GBIF_Financial_Report_2012.pdf

– Do we have enough biodiversity data?

– Can LW go ahead without a strong GBIF?

Relation between GBIF and LW is poorly understood, at least at country level

- Is LW taking over GBIF?
- Is GBIF made redundant by LW?
- ...

How come this could be happening?

Lifewatch is planning	GBIF is doing
Interoperability standards for biodiversity data (in particular ABCD and Darwin Core standards) & Data integration and data discovering. Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	The updated Darwin Core …is used by GBIF to encode data about organism names, taxonomies and species information and distributions; GBIF also uses it to list publications. From http://www.gbif.org/informatics/standards-and-tools/publishing-data/data-standards/darwin-core-archives/

*Report of the two days-Workshop LifeWatch Italian Community. Rome.
14-15th January of 2013. Rome

Lifewatch is planning	GBIF is doing
Alien Species Showcase and Virtual Lab Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	GBIF was among six organizations to sign a memorandum of cooperation to set up a Global Invasive Alien Species Information Partnership (GIASIP). The signing took place at a launch event during the 11th Conference of Parties to the Convention on Biological Diversity (CBD COP11), … whose mission is to maximize the ability of countries to access, exchange, analyze and effectively apply the information and informatics tools needed to prevent, eradicate and control invasive alien species. From http://www.gbif.org/communications/news-and-events/showsingle/article/gbif-signs-invasive-species-information-partnership/

Lifewatch is planning	GBIF is doing
Integration between the primary Biodiversity Standards and the Geospatial Standards, in order to allow the Lifewatch architecture to offer standard geospatial service Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	The Data Portal allows complex searches on any taxon, country or dataset (...). Other improvements, such as the availability of Open Geospatial Consortium (OGC) Mapping Services have been incorporated ...this allow OGC-compliant clients to include, as layers in the generation of maps, GBIF-mediated density coverage for taxa, providers, resources, networks, countries and host countries – From http://www.gbif.org/informatics/infrastructure/integrating/

Lifewatch is planning	GBIF is doing
Definition of a <mark>Quality Plan</mark> Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	Many training materials & videos, tools and procedures. See the <mark>Biodiversity data quality hub</mark>. This is a dynamic website where tools, thesauri, guides, and educational materials are available. More info in http://www.gbif.es/BDQ.php From http://www.gbif.org/orc/?doc_id=4462

Lifewatch is planning	GBIF is doing
Acquisition and integration of new records by use of expanded format including: (body size, reproductive and ecological treats related to recruitment / dispersion features) in the following habitats: Marine, Terrestrial & Inland Waters and Lagoons. Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	GBIF Nodes working within the framework of TDWG to develop standards to support species level information such as descriptions and traits. GBIF Secretariat working with EU-BON to expand GBIF standards to cover LTER data. http://www.eubon.eu/ https://code.google.com/p/pliniancore/

Lifewatch is planning	GBIF is doing
<mark>Citizen Science</mark> Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	Several GBIF nodes have developed or are developing tools and collaboration on <mark>citizen science</mark> • http://herbonautes.mnhn.fr/ • http://www.gbif.de/Citicen-Science-Workshop-2012 • http://www.ala.org.au/category/blogs-news/citizen-science/ • http://www.gbif.org/dataset/50c9509d-22c7-4a22-a47d-8c48425ef4a7

Lifewatch is planning	GBIF is doing
Designing, developing and managing the e-Learning Platform. Creation of new e-learning contents and the use of the contents from other projects like EUBrazil OpenBio. Pasted from http://www.lifewatch.eu/JRU_ita_jan2013	The e-learning platform implemented and managed by GBIF.ES since 2010. Seven online courses carried, providing training to 160 participants from 16 countries. Collaborations for developing educational materials with GBIF nodes of Colombia, France and Portugal going on. A permanent repository of courses contents in place. 103 training videos available. GBIF virtual class room announced. From • http://www.gbif.es/eLearningGbifes_in.php • http://community.gbif.org/mod/file/download.php?file_guid=2404 • http://www.cienciatk.csic.es/documentos_por_coleccion/videos/Proyecto+GBIF/

Closing remarks

- (Food for discussion)
  - There is need for clarification for the connections and roles of LW and GBIF
  - Can LW operate without GBIF?
  - What components already exist and can put to use?
  - What new components are needed?
  - What are the optimal scales of the related components?

> 400M data records
> 10K datasets
> 50 country members
> 700K visits/yr. + Ms-Ks APIs requests/yr
100s of people working on it around the globe

www.gbif.org/

Francisco Pando
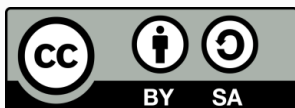   Unidad de coordinación, GBIF España
        Real Jardín Botánico - CSIC
        Claudio Moyano 1, 28014 Madrid, Spain
        pando@gbif.es
        www.gbif.es