ITALIAN "NATIONAL NETWORK ON BIODIVERSITY" (NNB)
Cooperation and Integrations with LifeWatch ERIC Infrastructure
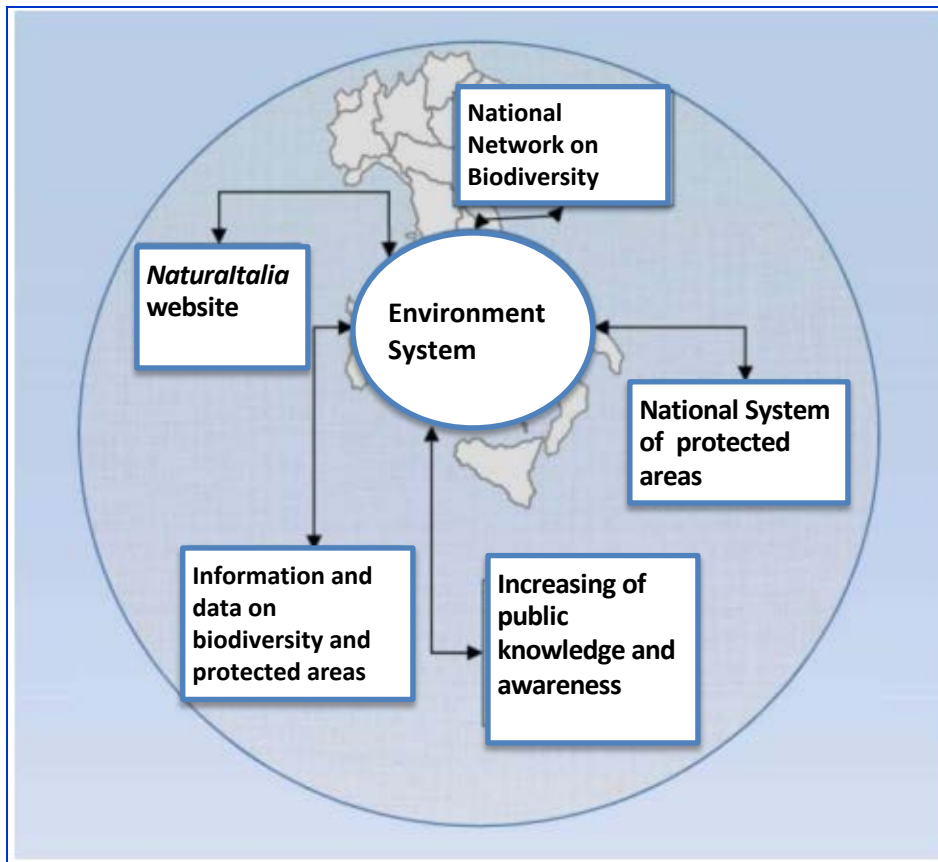
Anna Di Noi, Cristian Di Stefano

ISPRA - Service for the "National Environmental Informative System"

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

WHAT IS NNB?

In the **framework** of the **Convention on Biodiversity**, as part of the **National Biodiversity Strategy**, the Italian Ministry of Environment promoted, among other initiatives, the creation of a **National Network on Biodiversity**, based on the participation of internationally and nationally **accredited subjects** that manage, share and make accessible **data and information on biodiversity**.

The Italian **NNB** is a **technical and technological infrastructure** able to provide and manage **geographical information on biodiversity** throughout the **national territory**.

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

WHY NNB?

In **2014**, the **Ministry of the Environment** entered into a **first Convention with ISPRA** which provided for the **implementation and evolutionary management of the Network**. During this first agreement, ISPRA had developed the **NNB prototype, based on the EUNIS software,** to manage data types much wider than expected and in compliance with the current regulations.

In **2016**, the Ministry of the Environment signed an **Agreement** with ISPRA for the **"Maintenance, management and development of the NNB"**.

To date, the Agreement is still valid and provides for the **creation of a geodatabase** able of **simultaneously managing** the **alphanumeric data, relating to the species observed,** and the **cartographic data, relating to their visualization on a map**. All data comes from the databases registered in the Network.

ITALIAN NATIONAL NETWORK ON BIODIVERSITY
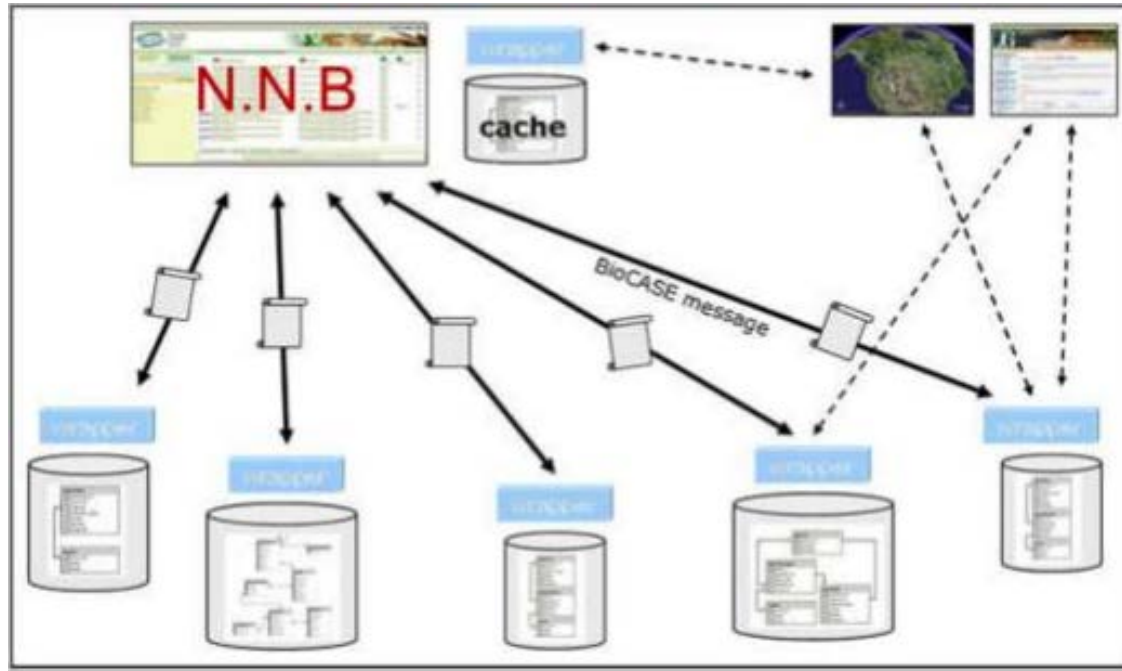
WHAT DOES NNB DO?

Today **NNB** is able to guarantee **interoperability** with similar international infrastructures (**LifeWatch**, **GBIF**, etc.) and with the **National Geo-Portal**, in **compliance** with the provisions of the **INSPIRE Directive (DL 32/2010)**.

Federated and **distributed network** of databases of biodiversity **primary data** (species observations on national territory)

Each node holds and is **responsible of its own data**

Databases have **different** technologies and structures

BioCase Protocol is used for **data interchange**

Access to Biological Collection Data (ABCD) metadata is used to have a **common semantic**

Collected **data** is published through the **NNB official website** using **OPEN DATA** formats

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

WHAT HAS NNB TODAY?

Number of species observations available in the system

	May 2019
Number of NNB records	9.044.962
Number of GBIF records	622.138
Number of iNaturalists records	394.808

From the **ISPRA NNB website** (http://www.nnb.isprambiente.it) and from the **NNB Geoviewer** (http://geoviewer.nnb.isprambiente.it) is possible to **browse** and **download** all the information related to selected species in all the **open** and **standard formats** (comma separated values, shape file, WMS).

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

SO, NNB …

The NNB is a shared data management system consisting of a central node, which allows performing data search and management operations, and from peripheral nodes (databases that have primary biodiversity data).

The NNB is aimed at ensuring the consultation and efficient integration of biodiversity information, without the physical transfer of the data, which remain in the cooperating institutions that hold the legal rights (data provider).

The databases owned by the individual nodes can differ both in structure (different fields) and architecture (different DBs, such as Access, Oracle, Mysql, etc.), but they can communicate via the BioCASe Protocol. The use of this protocol guarantees the optimization of the data-flow of different format as well as the communication between the nodes themselves and with the international community that participates in the BioCASe network.

Today the NNB is able to guarantee interoperability with similar international infrastructures (LifeWatch, GBIF, etc.) and with the National Geo-Portal, in compliance with the provisions of the INSPIRE Directive (DL 32/2010).

The NNB, through the aggregation of information and knowledge on the current state of biodiversity in Italy, pursues the objective of improving the dissemination and sharing of biodiversity data, making them available for basic and applied research, for education and training.

Moreover, since the data constitute an official technical reference to be used in the activities of competence of the public administration, NNB today represents a strategic tool for politicians and decision makers, who must guarantee the sustainable use of natural resources and the conservation of biodiversity.

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

AND NOW, WE ARE...

Planning integration activities of NNB (**2020**)

    use of **LifeWatch ontologies** for NNB data;

    integration of **LifeWatch taxonomic cleaning** services;

    exposition of databases metadata **compliant** with **LifeWatch** search engine.

Asking for a **better cooperation and integration** between NNB and LifeWatch network

    any **other proposals** for the use of NNB data in LifeWatch?

    any **further ideas** on the integration of data visualisation and data analysis tools into LifeWatch infrastructure?

    any **other suggestions** for a general better cooperation and integration?

ITALIAN NATIONAL NETWORK ON BIODIVERSITY

OFFICIAL WEBSITE: HTTP://WWW.NNB.ISPRAMBIENTE.IT

GEOVIEWER: HTTP://GEOVIEWER.NNB.ISPRAMBIENTE.IT

WMS SERVICE: HTTP://GEOVIEWER.NNB.ISPRAMBIENTE.IT/GEOSERVER/NNB/WMS?

NNB PROJECT ON INATURALIST: HTTPS://WWW.INATURALIST.ORG/PROJECTS/NNB

Please contact
anna.dinoi@isprambiente.it
cristian.distefano@isprambiente.it

THANKS
for your
ATTENTION