Biodiversity

- Diversity of
  - Species
  - Genomes
  - Functions
  - Interactions
  - Ecosystems

Image by C. Sardet
Where have all the insects gone?

**Weighty disappearances**
The mass of insects collected by monitoring traps in the Orbroicher Bruch nature reserve in northwest Germany dropped by 78% in 24 years.

Vogel 2017 Science, similar trends in more than 60 nature reserves in Germany (Hallmann et al. 2017 PIOS ONE)
Data is Needed...
Diversity of Sources

- Spot measurements to Time series (days to decades)
- Local to Global data
- Observation data
- Experimental data
- Collected to Sensor data
- (Meta)data standards
- Vocabularies
- Taxonomy
- Molecular data
- Pictures
- Videos
- Sound files
- ...
Diversity of “Databases”

- Research projects
  - Lab book, Word, Excel, RDBMS
  - Harddisk, Dropbox, Clouds
- Repositories, Archives
  - Datagraves?
  - Long-term?
- Collections
- Authorities
- Non-Governmental Organisations (NGOs)
- Citizen Science
- Learned Societies
- ...
Summary

Current “data management” does not match the scientific needs of researchers, decision makers and economy in the digital age.
Consolidation is Needed...

The German Federation for Biological Data
German Federation for Biological Data

www.gfbio.org

Sustainable, service oriented, national data infrastructure facilitating data sharing for biological and environmental research.

Established 2013
What is GFBio?

PLAN
Prepare a custom Data Management Plan (DMP).

SUBMIT
Submit your data to GFBio.

SEARCH
Search the GFBio data pool.

VISUALIZE & ANALYZE
Dynamically integrate, analyze and visualize GFBio datasets.

PUBLISH
Make your data citable.

TRAIN
Train your data management skills.

ARCHIVE
Deposit data and specimens in dedicated long-term archives.

ANNOTATE & CONNECT
Use the GFBio Terminology Service to describe your data and share terminologies with other researchers.
Transition

DFG funded “Research” project with 20 partners

Single legal entity, sustainable
GFBio e.V.

- Founded in May 2016 as a not-for-profit association
- Registered as a support association (Förderverein)
- Funded by DFG
- 29 members
Transition

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Single legal entity, sustainable

NFDI4BioDiversity
• FAIR with emphasis on quality of data  (instead of quantity)

• Expand our Community
  • Crop science – system plant
  • Farm animals – functional biodiversity
  • Systems Biology – model management
  • Citizen Science – monitoring
  • de.NBI network – catch the users by data analysis

• Pro-active user engagement at the universities/institutes
  • Front office/back office model

• Cross-community engagement to build ONE NFDI
  • NFDI4Earth, NFDI4Life, NFDI4Health, NFDI4Chem
  • Learned societies, authorities, organisations
    • GBIF, VBIO, GfÖ, GfBS, BfN, DZG, RDA, GoFAIR ...
Thank You

NFDI4BioDiversity