

GBIF Work Programme 2025

***Annual Update and Implementation Plan to the
Strategic Framework 2023-2027***

Version 1.0, 3 October 2024

Table of Contents

Introduction	1
Priority Area 1: Science and Research	1
Activity 1.1: Drive mobilization and use of biodiversity data to support priority thematic areas of relevance	1
Activity 1.2: Advance GBIF's contribution to latest biodiversity modelling approaches	2
Activity 1.3: Improve taxonomic balance and interoperability of biodiversity evidence in GBIF through DNA-derived nomenclatures, metabarcoding and eDNA data	3
Ongoing activities to support science and research	3
Priority Area 2: Policy and Partnerships	4
Activity 2.1: Expand and strengthen participation	4
Activity 2.2: Support the science-policy interface	5
Activity 2.3: Support nature-positive outcomes from decisions in the business, financial and productive sectors	5
Ongoing activities to support policy and partnerships	6
Priority Area 3: Community and Capacity	6
Activity 3.1: Communicating the value of GBIF	6
Activity 3.2: Support and strengthen GBIF nodes	7
Activity 3.3: Develop capacity and skills	8
Ongoing activities to support community and capacity	8
Priority Area 4: Infrastructure and data products	9
Activity 4.1: Enhance robustness of the core GBIF infrastructure	9
Activity 4.2: Enhance support services for data publishers and users	9
Activity 4.3: Enhance features and capabilities of the GBIF infrastructure	10
Activity 4.4: Drive data standards development	11
Ongoing activities to support infrastructure and data products	11
Colophon	12
Suggested citation	12
Persistent URI	12
Document control	12

Introduction

The GBIF 2025 Work Programme received approval from the GBIF Governing Board at its [31st meeting](#) in Vairão, Portugal, on 3 October 2024. It serves as an update to the [2024 Work Programme](#) and the third year of implementing the strategic priorities outlined in the [2023-2027 GBIF Strategic Framework](#).

As described in the previous work programmes, the approach of the implementation plan is to address the strategic priorities through several multi-year activities, each with projected outcomes over the five years. As this document is written halfway through the year, the identification of indicative tasks for 2025 is necessarily tentative and based on our current projections for the progress of the indicative tasks agreed for 2024.

The 2025 Work Programme indicates which activities we expect salaried staff will carry out and which through external contracts and/or non-salary expenses. For contracts and expenses, it indicates whether costs would be met from core funds or from supplementary funds and identifies, where possible, the current or potential funding source. The accompanying 2025 GBIF budget funds this Work Programme and is detailed for the Governing Board in a separate document.

Last year several small changes were made to Activities and Project Outcomes. This year, we propose to reorganize some Activities and Projected Outcomes in [Priority Area 2: Policy and Partnerships](#) and [Priority Area 3: Community and Capacity](#).

We recognize that our effort in enlarging national participation is closely aligned to our strategic outreach efforts under [Priority Area 2: Policy and Partnerships](#). The work of [Priority Area 3: Community and Capacity](#) continues to focus on node managers and capacity enhancement. This focus does not diminish the importance of connecting all work streams, especially for activities that affect both Heads of Delegations and Node Managers. We are implementing improved cross-team collaboration mechanisms to ensure communication.

These adjustments have led to the following changes:

- The activity to “[Expand and strengthen national participation](#)” has moved from [Priority Area 3: Community and Capacity](#) to [Priority Area 2: Policy and Partnerships](#) and now appears as [Activity 2.1](#).
- We also have combined the previous Activities [2.1](#), [2.2](#) and [2.3](#) in Priority Area 2 into a single one, [Activity 2.2: Support the science-policy interface](#). The projected outcomes under these activities have also been consolidated and rewritten.
- [Activity 2.4](#) has become [Activity 2.3](#), but its content is unchanged.

Joe Miller, Executive Secretary

Priority Area 1: Science and Research

Improving biodiversity evidence for scientific research and understanding

Activity 1.1: Drive mobilization and use of biodiversity data to support priority thematic areas of relevance

Projected outcomes for 2027

- Knowledge gaps are reduced by consolidating data coverage across the thematic areas of relevance
- GBIF's relevance to research is enhanced, through increased recognition and uptake of GBIF mediated data among researchers across additional scientific disciplines

Indicative tasks for 2025

- Complete and coordinate publication of the peer-reviewed systematic review of GBIF-enabled research to identify usage trends in 2020–2024 to help prioritize outreach to thematic communities
- Coordinate preparation and publication of a collection of peer-reviewed papers describing key elements of the GBIF network and infrastructure
- Engage high-priority thematic communities based on recommendations from the Science Committee and establish new consultations with subject experts, data holders, data users and other communities on key topics, including agrobiodiversity, biodiversity loss and marine biodiversity (in collaboration with [Ocean Biodiversity Information System \(OBIS\)](#))
- Cultivate and support discussions, knowledge exchange and engagement with and within thematic communities, both existing and new; ensure continued flows of data and up-to-date guidance; explore options for wider thematic reporting and discoverability, including on data gaps and biases
- Consolidate data flows relating to vectors of human diseases through the [Vector Atlas](#) project, EFSA's One Health / VectorNet collaboration; and updates of VectorBase while implementing recommendations from the the [GBIF task group on vectors of human diseases](#)
- Explore the usability and accessibility of the GBIF infrastructure for researchers, initiate discussion with all communities and provide recommendations for improvements to tools and processes
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, workshops and travel; Supplementary funds: Vector Atlas project.

Activity 1.2: Advance GBIF's contribution to latest biodiversity modelling approaches

Projected outcomes for 2027

- GBIF supports the evolution of fundamental data-driven biodiversity research and its application across methods, scales and disciplines in life and environmental sciences

Indicative tasks for 2025

- Complete prototype digital twins dependent on and coordinated by GBIF through partnership on [BioDT](#) report and disseminate lessons learned
- Continue engagement and showcase representation of sampling-event data through GBIF; scale up data flows from ecological research, survey and monitoring data communities; improve and expand interoperability with partner infrastructures; and run workshops that broaden data publishing models and produce example datasets
- Run a data republication campaign to convert existing occurrence datasets and increase its value through use of the [Humboldt Extension for Ecological Inventories](#); develop tools and strategies for

encouraging holders of survey and monitoring datasets not yet in GBIF to share them

- Contribute to development and updating of documentation, templates and training materials for publishing and accessing survey and monitoring data through GBIF
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, workshops and travel; Supplementary funds: EC grant; potential GEF-8 funds.

Activity 1.3: Improve taxonomic balance and interoperability of biodiversity evidence in GBIF through DNA-derived nomenclatures, metabarcoding and eDNA data

Projected outcomes for 2027

- Knowledge gaps are reduced by consolidating data coverage across the thematic areas of relevance GBIF's relevance to research is enhanced, through increased recognition and uptake of GBIF-mediated data among researchers across additional scientific disciplines

Indicative tasks for 2025

- Continue engagement and improve coverage and quality of data representation in GBIF from metabarcoding research and eDNA monitoring, expand interoperability with partner infrastructures
- Improve and update guidance materials for data publishing and accessing DNA-derived data through GBIF
- Strengthen collaborations with DNA barcoding communities and reference sequence libraries, including those that use operational taxonomic units (OTU)
- Lead experiment towards an index of marker gene sequences including DNA barcodes and amplicon sequence variants (ASVs)
- Analyse feasibility of a standard format for DNA-reference datasets that credits citations to contributors and publishers
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, workshops and travel; Supplementary funds: EC grant; potential EC grant and GEF-8 funds.

Ongoing activities to support science and research

- Explore and document data originator and data user needs in the GBIF network, across DNA data infrastructures, and in the eDNA community, including needs of international and national initiatives, of organizations, and of individual researchers
- Build, develop and consult around survey and monitoring data to assess and understand community needs for sampling-event data
- Support community standards development for priority data areas—such as invasive and alien species, interactions, survey and monitoring data, and DNA—through TDWG and other standards communities
- Communicate progress with DNA-derived, survey and monitoring, and other thematic communities to the GBIF network and partners
- Maintain GBIF's literature tracking programme to document and communicate the use of GBIF-

mediated data in research

- Promote best practices in data citation using digital object identifiers (DOIs), through outreach to researchers and journal publishers
- Highlight and illustrate uses of GBIF-mediated data across scientific disciplines and thematic areas through GBIF.org and the annual Science Review
- Increase academic visibility of data and of GBIF contributions of individuals, organizations (including funders) and projects within GBIF.org through the use of relevant infrastructures (e.g. [ORCID](#), [Research Organization Registry \(ROR\)](#), [Open Funder Registry \(OFR\)](#))
- Capture needs and suggestions from research communities regarding the development of the GBIF data model
- Ensure presence of GBIF representatives– including through Secretariat and node staff, regional contractors – at relevant scientific conferences with appropriate communication materials, presentations and training workshops
- Run annual competitions through the [Ebbe Nielsen Challenge](#) and [Graduate Researchers Awards](#)
- Support GBIF network to integrate data and GBIF training into higher education programmes and professional development of the early career researchers of biodiversity
- Maintain GBIF’s compliance with FAIR principles for scientific data management and stewardship under continuous review, with appropriate communication and certification for relevant projects and processes
- Review and process datasets reported through the [Suggest a dataset tool](#) to increase ingestion of thematic data into GBIF

Priority Area 2: Policy and Partnerships

Developing partnerships that benefit policy and society

Activity 2.1: Expand and strengthen participation

Projected outcomes for 2027

- GBIF national participation is expanded across currently under-represented regions, G20 economies and megadiverse countries
- Current Associate Participants have agreed pathways towards achieving or returning to voting participation
- GBIF is recognized as a key implementation partner for biodiversity-related projects supported by the [Global Environment Facility \(GEF\)](#)

Indicative tasks for 2025

- Engage GBIF Heads of Delegation (HoDs) through joint outreach and activities at both GBIF events and international fora, including Datos Vivos/Living Data 2025 conference and the [G20 Research Innovation Working Group](#)
- Update Engagement Strategy to deliver expanded and coordinated approach to consolidating and retaining Voting Participation and to advance regional engagement
- Increase engagement with [UN Convention on Biological Diversity \(CBD\) regional and subregional support centres](#) to collaborate and support shared technical and capacity-building objectives linked to regional strategies

- Consolidate GBIFs position as a knowledge implementation partner within the Global Environment Facility programming
- Establish formal partnerships with key GEF implementing agencies to capture funding opportunities to strengthen national support and support for GBIF programmes (e.g. [Biodiversity Information for Development \(BID\)](#))
 - **Expected funding mechanisms and sources:** Core funds: salaried staff and travel.

Activity 2.2: Support the science-policy interface

Projected outcomes for 2027

- GBIF-mediated data is consistently and transparently applied and cited across multiple indicators used to monitor progress towards the goals and targets agreed through the CBD and integrated into national platforms and reporting processes
- GBIF's value in supporting the [UN Sustainable Development Goals \(SDGs\)](#) is recognized and reinforced through strategic partnerships with relevant international organizations focused on climate change, food security, human health and well-being, and both terrestrial and marine biodiversity such as the [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services \(IPBES\)](#)

Indicative tasks for 2025

- Develop partnerships with key indicator providers to the [Kunming-Montreal Global Biodiversity Framework \(GBF\)](#) to facilitate the flow of GBIF-mediated data in those indicators, including national reporting processes, and explore the development of the GBIF-owned indicators on data gaps
- Develop, implement, review and finalize partnership agreements with key data partners including [GEO BON \(Group on Earth Observation Biodiversity Observation Network\)](#), [International Union for the Conservation of Nature \(IUCN\)](#) and [OBIS](#)
- Working across the GBIF network, develop use cases for relevant multilateral environmental agreements including the [Ramsar Convention on Wetlands](#), [CITES](#) and the [Convention on Migratory Species \(CMS\)](#)
- Develop data cube use cases through the the EU-funded project, [Biodiversity Building Blocks for Policy \(B-Cubed\)](#)
- Engage with the IPBES data and knowledge task force
 - **Expected funding mechanisms and sources:** Core funds: salaried staff and travel; Supplementary funds: EC grant.

Activity 2.3: Support nature-positive outcomes from decisions in the business, financial and productive sectors

Projected outcomes for 2027

- Lending agreements prepared by private agencies, financial institutions and public development banks include clear and unequivocal requirements for sharing biodiversity data
- Private companies, trade associations and consultancies in all global regions recognize GBIF as

the preferred platform to share primary biodiversity data gathered through impact assessments and monitoring

Indicative tasks for 2025

- Develop the Data4Nature initiative, including formation of multilateral development bank (MDB) working group, governance and funding model, capacity building framework and exploration of the use of [hosted portals](#) within the initiative
 - **Expected funding mechanisms and sources:** Core funds: salaried staff and travel; Supplementary funds: potential Special Purpose Fund.

Ongoing activities to support policy and partnerships

- Attend CBD meetings and contribute to consultations and working groups as an intergovernmental observer
- Maintain GBIF's role as an IPBES strategic partner by engaging in both its Task Force on Data and Knowledge and its Task Force on Capacity Building
- Participate in the GEO BON Advisory Board and develop partnerships with regional and thematic Biodiversity Observation Networks (BONs)
- Continue engagement with IUCN to implement the Memorandum of Cooperation, including regular imports of checklist data from the [IUCN Red List of Threatened Species](#) and the [Global Register of Introduced and Invasive Species \(GRIIS\)](#)
- Continue to participate in the [TDWG Restricted Access Data Working Group](#)
- Manage Participation processes relating to Heads of Delegation, including administration and communication

Priority Area 3: Community and Capacity

Developing the GBIF network to meet future needs and challenges

Activity 3.1: Communicating the value of GBIF

Projected outcomes for 2027

- The GBIF network, its audiences and its wider communities of practice are equipped with robust evidence that demonstrates its value and relevance to science, policy and society

Indicative tasks for 2025

- Complete update to the [GBIF Communications Strategy](#), revising and revisiting key audiences and messages to account for changes and advances since its publication in 2015
- Develop simple, clear messaging that highlights GBIF's role as a data infrastructure and network supporting open data, open science and policymaking, along with materials, use cases and concrete examples for global, national and thematic communities
- Consolidate social media strategy, aligning it with values described in the GBIF strategic framework
- Promote the second series of animated videos on priority thematic areas of relevance through social media campaigns and continue to refresh thematic content for both new and existing

communities

- Support and promote GBIF collaborations with OBIS, GEO BON and TDWG at the Datos Vivos/Living Data 2025 Conference aligned with GB32 in Colombia
- Plan and prepare processes for following up from the first GBIF ESG/sustainability baseline report (see [WP24 §2.2](#))
- Develop approach for national reporting on the annual value of volunteers to the GBIF network, possibly in connection with an update of the annual country reports
- Communicate how the GBIF Strategic Framework is taking on the role of the *alliance for biodiversity knowledge*
 - **Expected funding mechanisms and sources:** core funds: salaried staff, communication materials and travel.

Activity 3.2: Support and strengthen GBIF nodes

Projected outcomes for 2027

- GBIF nodes provide a strong and stable foundation for data mobilization and use through the network
- The role of GBIF nodes as hubs for data mobilization and use is better understood and supported, especially at national level

Indicative tasks for 2025

- Organize the second Node Awards programme, building on lessons learned from its first year
- Working with the NSG, scope a series of engagement and training events for nodes within the context of the Global Nodes Meeting and Training, GB32 and Datos Vivos/Living Data 2025 conference
- Organize an in-person knowledge exchange meeting for all members of the regional support teams alongside the Global Nodes Meeting to align their services to the work of the national nodes and GBIF Secretariat
- Support the work of a task group on Indigenous data governance (see also [§4.3](#)), including an in-person event alongside the Global Nodes Meeting and Training to facilitate discussion with the nodes
- Develop additional modules for the node development curriculum, based on consultation with the nodes community
- Roll out an updated capacity self-assessment tool for nodes based on review in 2024
- Request community feedback to inform updates to the nodes guidance documents
- Support participation by the nodes community in piloting tools and processes that emerge from the work on the new data model
- Following the regional engagement meeting held in 2024, organize a virtual course on GBIF formal Participation and establishing participant nodes for the Arab States
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, Global Nodes Meeting, Task Force expenses and travel; Supplementary funds: potential GEF-8 funds, potential Special Purpose Fund (for Indigenous Data Governance task Group).

Activity 3.3: Develop capacity and skills

Projected outcomes for 2027

- GBIF's ongoing capacity support programmes are successfully concluded, and new support programmes are scoped
- Additional training and guidance resources are available to the community in multiple languages covering both data mobilization and data use

Indicative tasks for 2025

- Launch calls for project proposals for the BID programme in the target regions, including (at minimum) Africa, Pacific and Caribbean
- Maintain and consolidate the existing regional support teams to complement the work of nodes
- Develop and implement induction plan for new members of the BID regional support teams, ensuring the overall coordination and alignment of their work with GBIF Strategic framework and Nodes implementation plan
- In alignment with regional priorities and the BID programme objectives, update and translate materials within GBIF training courses
- Monitor the implementation of the new format developed for the GBIF Capacity Enhancement Support Programme (CESP) in 2024 and collate and document best practices for CESP call in 2025
- Explore the use of capacity self-assessments in tracking progress across all levels (individual, institutional, national and regional) of the capacity development framework
 - **Expected funding mechanisms and sources:** core funds: salaried staff, CESP grant funds and travel; Supplementary funds: EC BID grant; contributions from Norway and Finland to Priority Area 3 Special Purpose Fund; potential funding from the [World Bank Amazon Sustainable Landscapes programme](#).

Ongoing activities to support community and capacity

- Organize annual calls for projects under the Capacity Enhancement Support Programme (CESP): €80,000 from core funds for 2025
- Support for new node managers through the node onboarding programme
- Support proposals to the hosted portal programme
- Support the Living Atlases community, including financial contribution to support a technical coordinator
- Provide support for digital documentation and related community consultation processes
- Operate effective communication channels that produce and disseminate news items and thematic content on GBIF.org, through publisher newsletters and other communications with nodes
- Maintain cycle of biennial regional nodes meetings with global node activities at GB32 and initiation of planning for regional meetings in 2026
- Coordinate work of volunteers, including mentors, ambassadors, translators and reviewers
- Maintain and refine GBIF's training curricula
- Support Biodiversity Information Standards (TDWG) community through financial and

organizational contributions towards annual meetings, including collaboration on the Datos Vivos/Living Data 2025 conference

- Provide regular technical support hours for nodes

Priority Area 4: Infrastructure and data products

Maintain and evolve infrastructure to advance biodiversity-related knowledge

Activity 4.1: Enhance robustness of the core GBIF infrastructure

Projected outcomes for 2027

- GBIF-maintained software and informatics infrastructure provides high, ongoing levels of availability and performance that keep pace with growth in data publication and use

Indicative tasks for 2025

- Complete the adoption of [ChecklistBank](#) as part of the core GBIF services for indexing checklist datasets, with updated public GBIF APIs and documentation
- Target audiences and user groups who may benefit from using ChecklistBank's tools and services for taxonomic data
- Maintain deployments of [hosted portals](#) and hosted data repositories (IPTs)
- Maintain GBIF R ([rgbif](#)) and Python ([pygbif](#)) libraries to follow changes in GBIF public interfaces and support outcomes, including eDNA engagement activities, sampling-event data and data cube capabilities to support the [B-Cubed project](#)
- Mature deployment and operation of software on the Kubernetes technology platform
 - Continually test disaster recovery processes as part of regular operations
 - Plan capacity and hardware procurement to accommodate growth in volume and use of data
 - Provide environments for development and network-wide testing, particularly related to indexing under revised data standards
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, hardware procurement; Supplementary funds: EC grants; potential GEF-8 funds.

Activity 4.2: Enhance support services for data publishers and users

Projected outcomes for 2027

- The expanding GBIF community of users are fully supported by a responsive help desk team and improved technical documentation
- The taxonomic and collections communities benefit from improvements in GBIF support to the [Global Registry of Scientific Collections](#) (GRSciColl) and the Catalogue of Life

Indicative tasks for 2025

- Mature processes around the ticketing system to managing help desk requests, broadening to train and include regional and thematic contractors
- Phase out the global use of the GBIF backbone taxonomy and replace it with the Catalogue of Life, providing support for migrating identifiers
- Provide guidelines for publishing taxonomic checklists through GBIF to contribute towards improvement of the Catalogue of Life
- Explore opportunities to connect with emerging systems that publish Digital Extended specimen data
- Support content curation on GRSciColl, coordinate editor and user communities, and improve data processes as outlined in the [current GRSciColl roadmap](#)
- Expand the newly established [technical documentation site](#) with clearer guidelines relating to data quality, data-publishing processes and data formatting, including those related to the use of controlled vocabularies
 - **Expected funding mechanisms and sources:** Core funds: salaried staff, contractors; Supplementary funds: Special Purpose Fund; potential EC grant and GEF-8 funds.

Activity 4.3: Enhance features and capabilities of the GBIF infrastructure

Projected outcomes for 2027

- Improved user interface to GBIF.org
- Improved capabilities for GBIF to handle ecological, collections, paleontological and phylogenetic data
- Data reuse increased through more stable GBIF identifiers

Indicative tasks for 2025

- Release new versions of GBIF.org and hosted portal software that provide equivalent functionality and use the same software stack
- Collect and address feedback from the open pilot phase of the eDNA Publishing Tool to prepare it for wider use
- Explore feasibility of enabling services to search for occurrences within eDNA datasets using sequences and taxa to which the sequence aligns (see also [§1.3](#))
- Explore the collaborative development of a tool to publish phylogenetic trees with associated information, such as the material and related sequences
- Advance capabilities for event-based search, based on prototype co-developed with the Atlas of Living Australia, and explore support for the Humboldt Extension for Ecological Inventories (see also [§1.2](#) and [§4.4](#))
- Start improving the representation of marine data in GBIF.org as outlined in the [OBIS-GBIF 2024 Joint Action Plan for Marine Biodiversity Data](#)
- Improve ability for users to filter data based on categories of dataset origins, including citizen science, eDNA and the business sector (see also [§2.3](#))
- Document recommendations for completing metadata and using stable identifiers for individuals

(e.g. ORCID iDs), organizations (e.g. ROR IDs) and funders (e.g. OFR IDs), and index fields to enable aggregate views (see also §1.1)

- Explore implementation of outcomes from the task group on Indigenous data governance, which may involve adopting [Local Context labels](#) or alternative options at suitable levels within the GBIF infrastructure as the task group develops and clarifies its recommendations (see also §3.2)
- Improve data quality by
 - Integrating basic data quality checks into the IPT and implementing emerging publishing models and changes to Darwin Core
 - Streamlining the processes developed for ensuring occurrenceID stability
 - Continuing to explore approaches to annotation capabilities in GBIF.org focused on taxonomic and geographic combinations
- Explore alternative platforms and methods for integrating and managing information from literature tracking
 - **Expected funding mechanisms and sources:** Core funds: salaried staff; Supplementary funds: EC grant funding; potential EC grant and GEF-8 funds.

Activity 4.4: Drive data standards development

Projected outcomes for 2027

- The revised GBIF data model is matured and applicable for use
- All controlled terms used in GBIF processing are managed in the vocabulary server

Indicative tasks for 2025

- Mature publishing model(s) for use, start preparing technical and user documentation, and release an initial update to the Darwin Core Archive data format that satisfies [case studies](#) relating to Materials, Interactions, and Surveys and Monitoring (see also §1.2 and §4.3).
- Establish a TDWG task group under the [Darwin Core Maintenance Group](#), proposing the addition of high-level, habitat-relevant terms (Realm, Biome) and associated controlled vocabularies
- Continue to accommodate newly interested communities as part of the data model investigation
- Continue to mature the unified data model and prepare it as a candidate standard within [Biodiversity Information Standards](#) (TDWG)
- Complete data-processing changes required to ensure all vocabularies are read from the vocabulary server
 - Address the specific needs outlined in feedback from the Paleontology community
 - Evaluate workflows for involving the volunteer translator community
- Support the work of vocabulary contributors and lead further vocabulary development
 - **Expected funding mechanisms and sources:** Core funds: salaried staff; Supplementary funds: EC grant funding; potential EC grant and GEF-8 funds.

Ongoing activities to support infrastructure and data products

- Maintain software through upgrades, bug fixes, capture and handling of change requests, added

functionality) and user support of IPT, hosted portals, GBIF.org, GRSciColl, Registry, ChecklistBank and taxonomic backbone builds

- Maintain hardware through purchases, installation, supervision/monitoring, optimization, operation planning, screening of future needs
- Upgrade infrastructure to the latest possible versions of widely used frameworks and cluster technology for web services stack, search engines and distributed data platforms
- Support systems by monitoring and remediating risks from technical debt, operational supervision and issue handling
- Provide in-house support for error diagnostics, installation support, load tracking, training
- Provide general help desk support through email, [GitHub](#) and the new ticketing system
- Support data users by maintaining rgbif and pygbif libraries, custom downloads and API access
- Support data publishers through IPT, data formats, error diagnostics and custom metrics
- Support training via webinars, individual appointments, documentation, videos and workshops

Colophon

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