

Reuse of GBIF Infrastructure

Tim Robertson



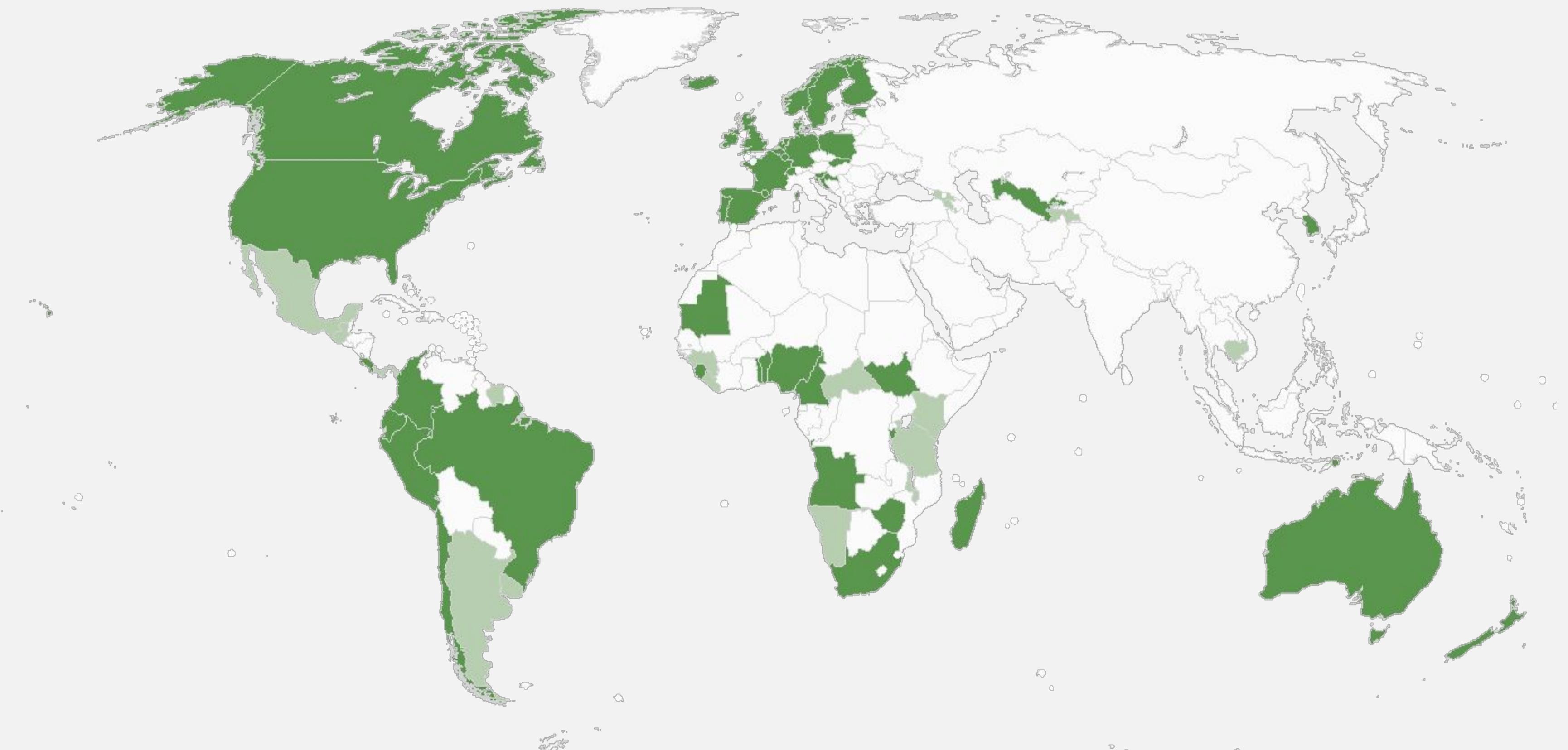
GBIF.org





GBIF Participant countries

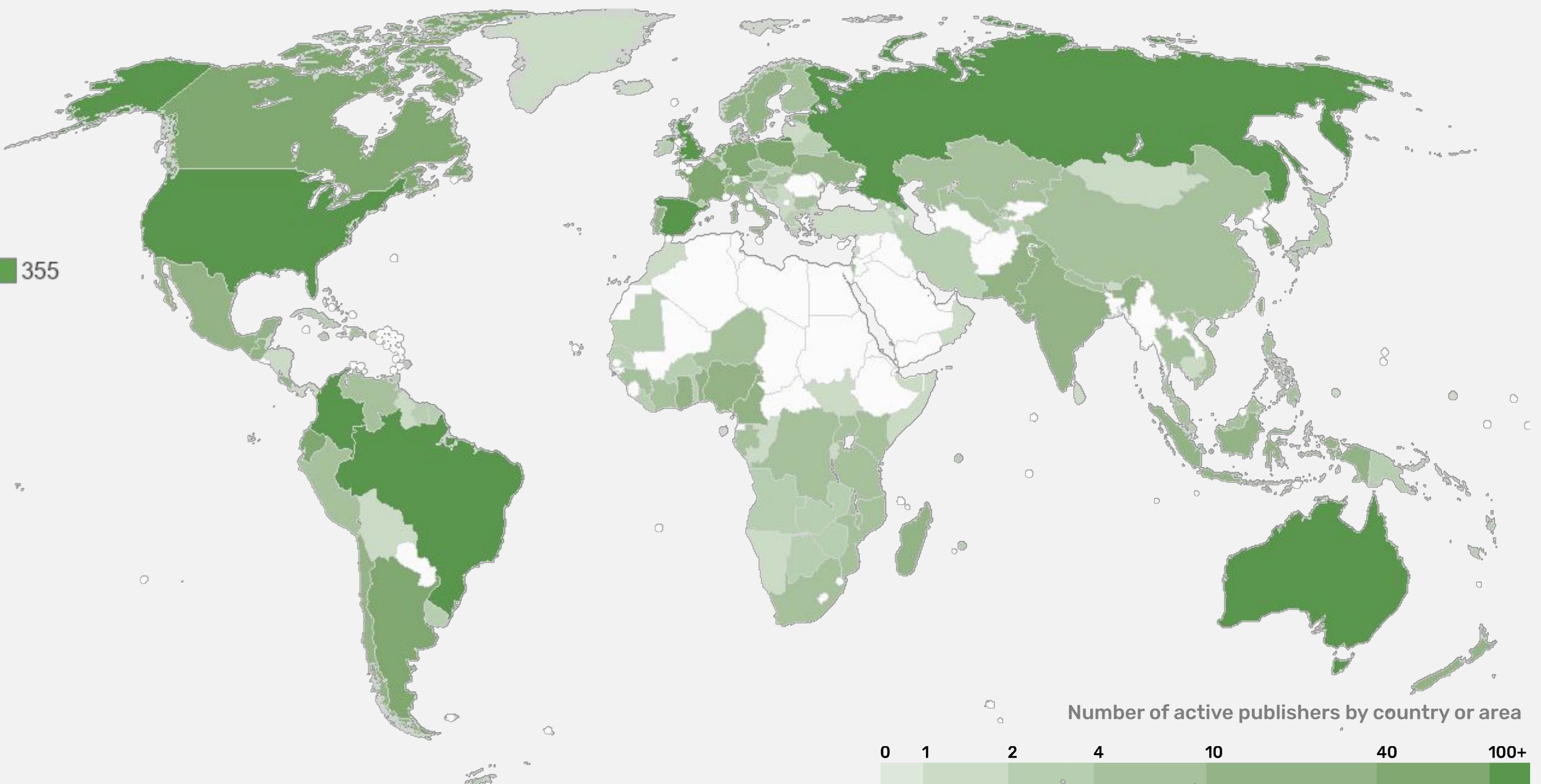
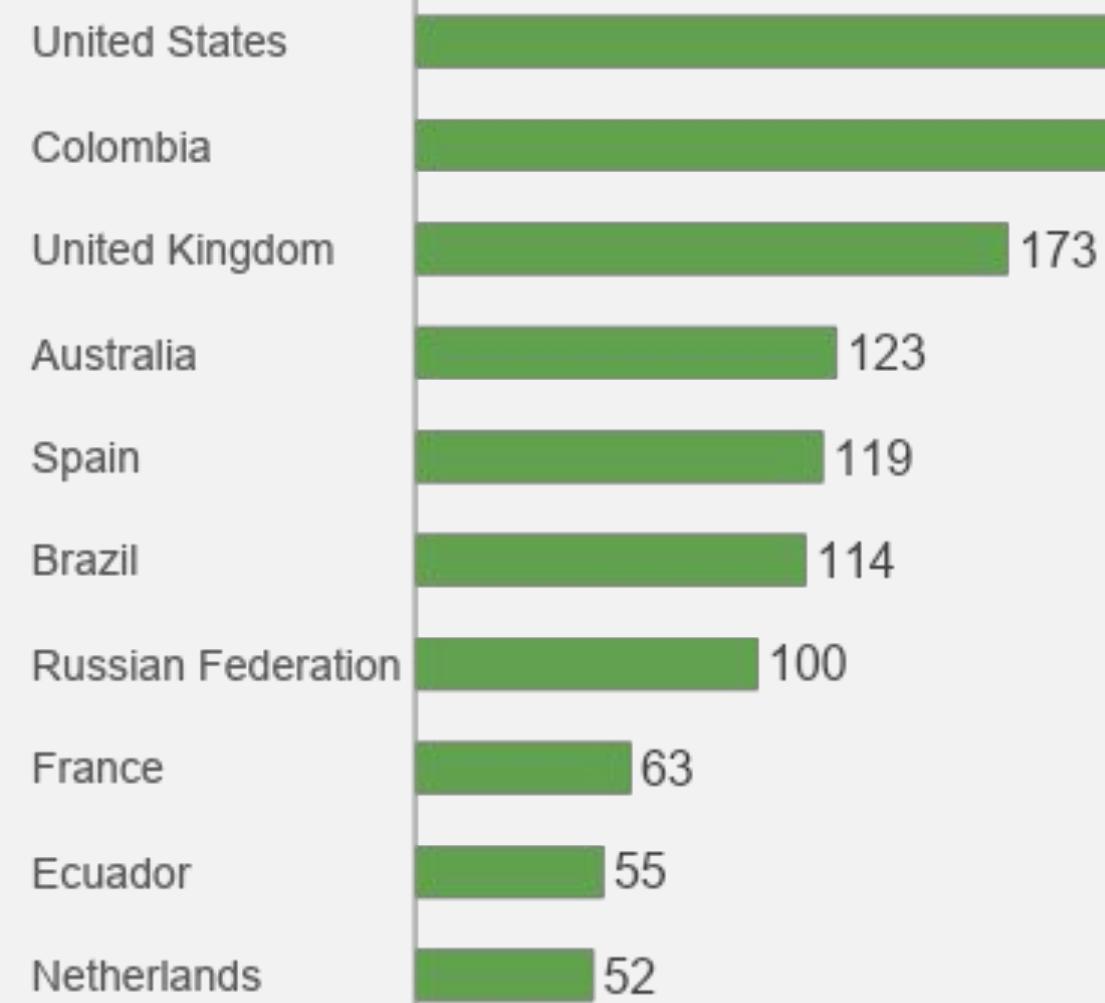
- █ Voting Participants
- █ Associate Participants



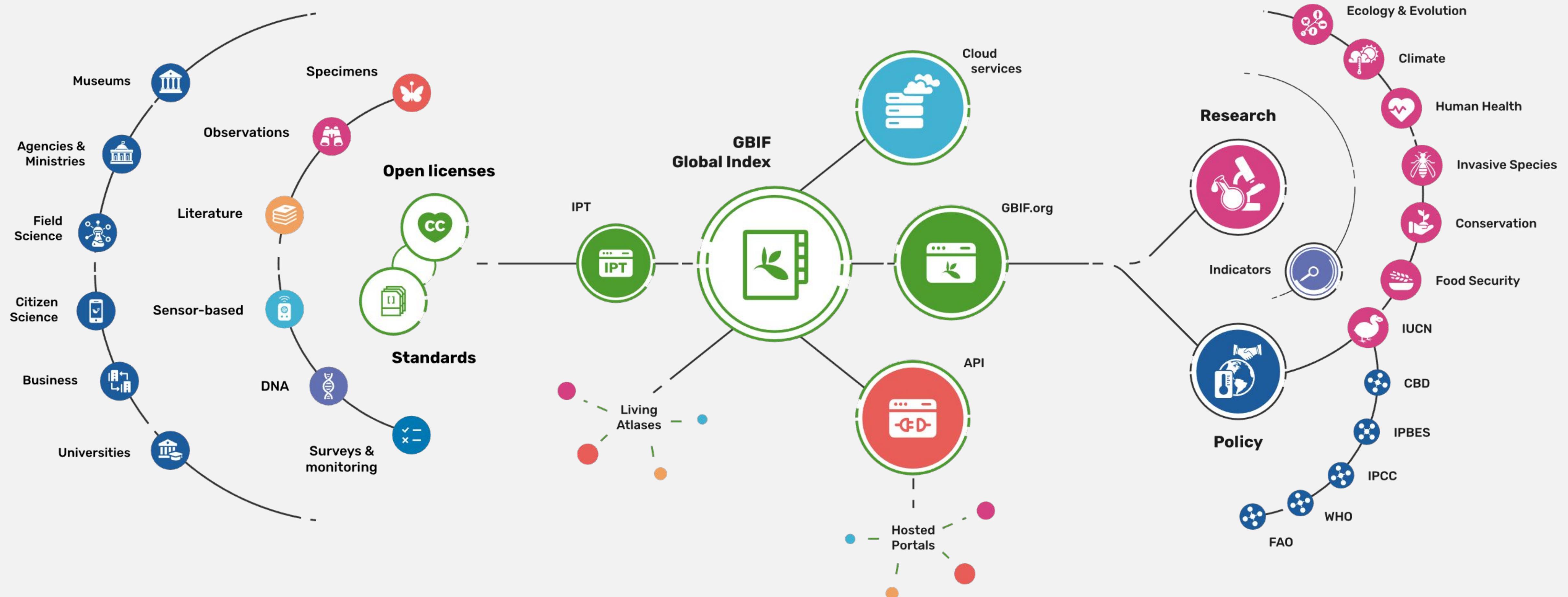
GBIF network of data publishing institutions

144

countries/areas with institutions
sharing data through GBIF



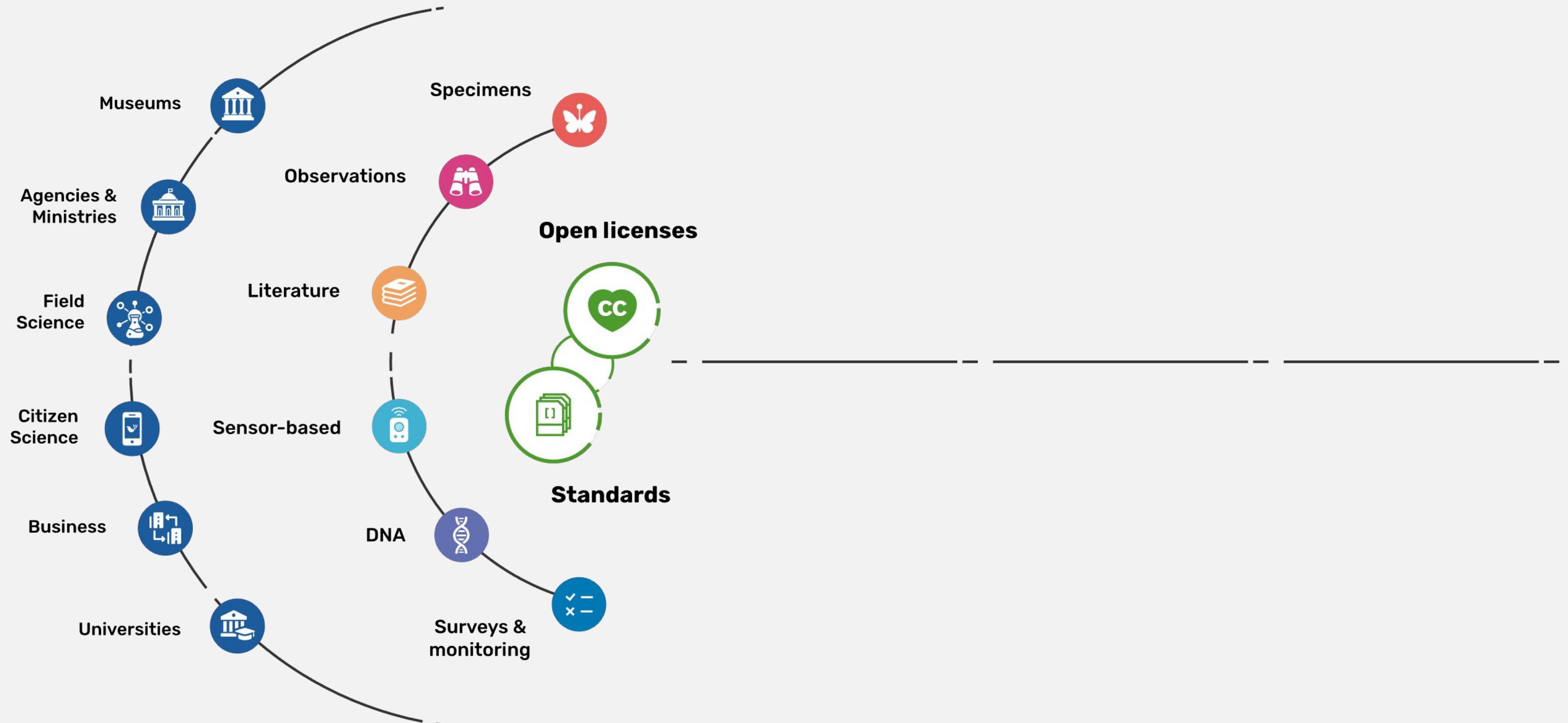
Providing biodiversity evidence for research and policy



Sources of biodiversity evidence

Create

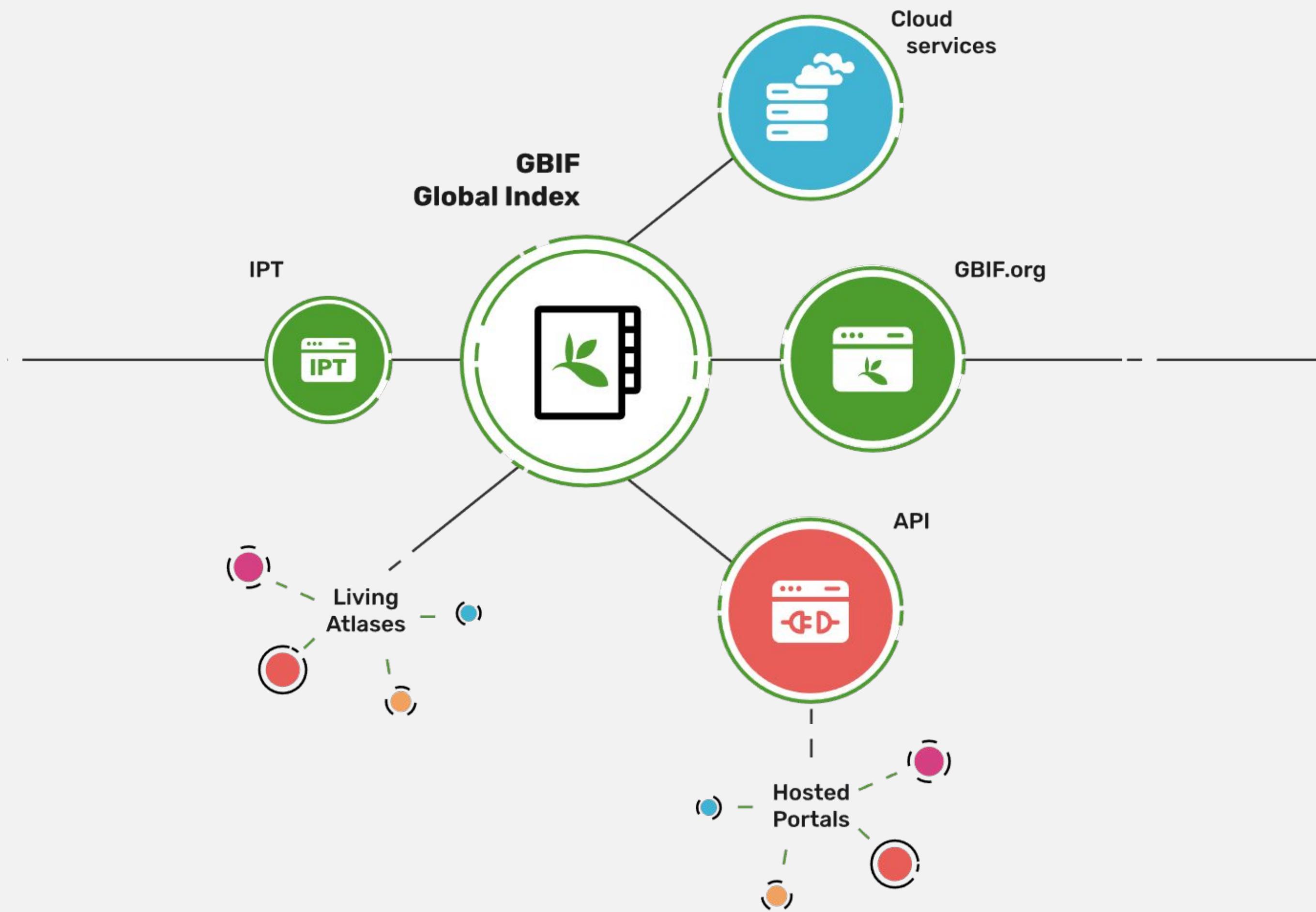
Combine sources
of evidence



Access to biodiversity evidence

Share

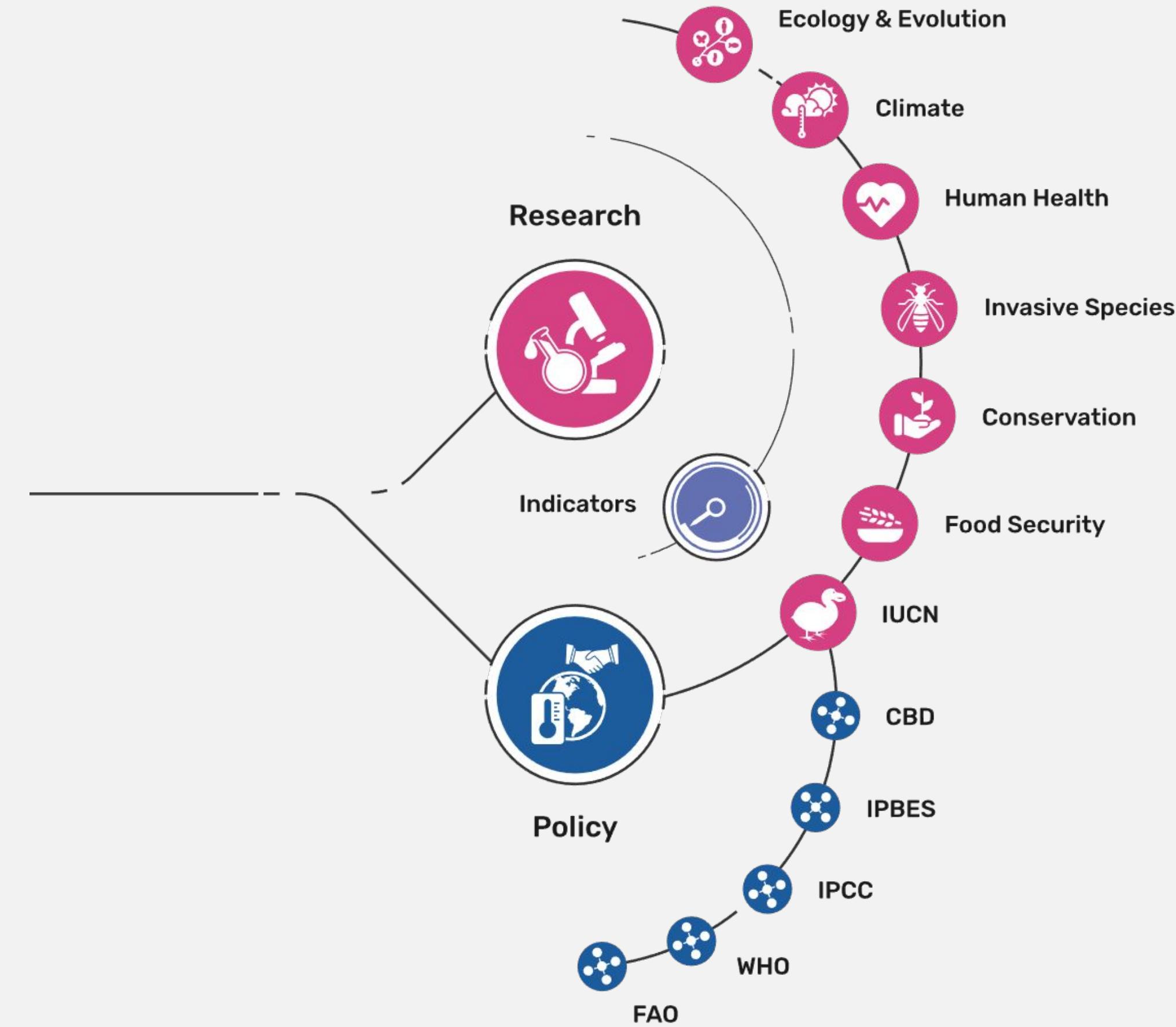
FAIR and open access



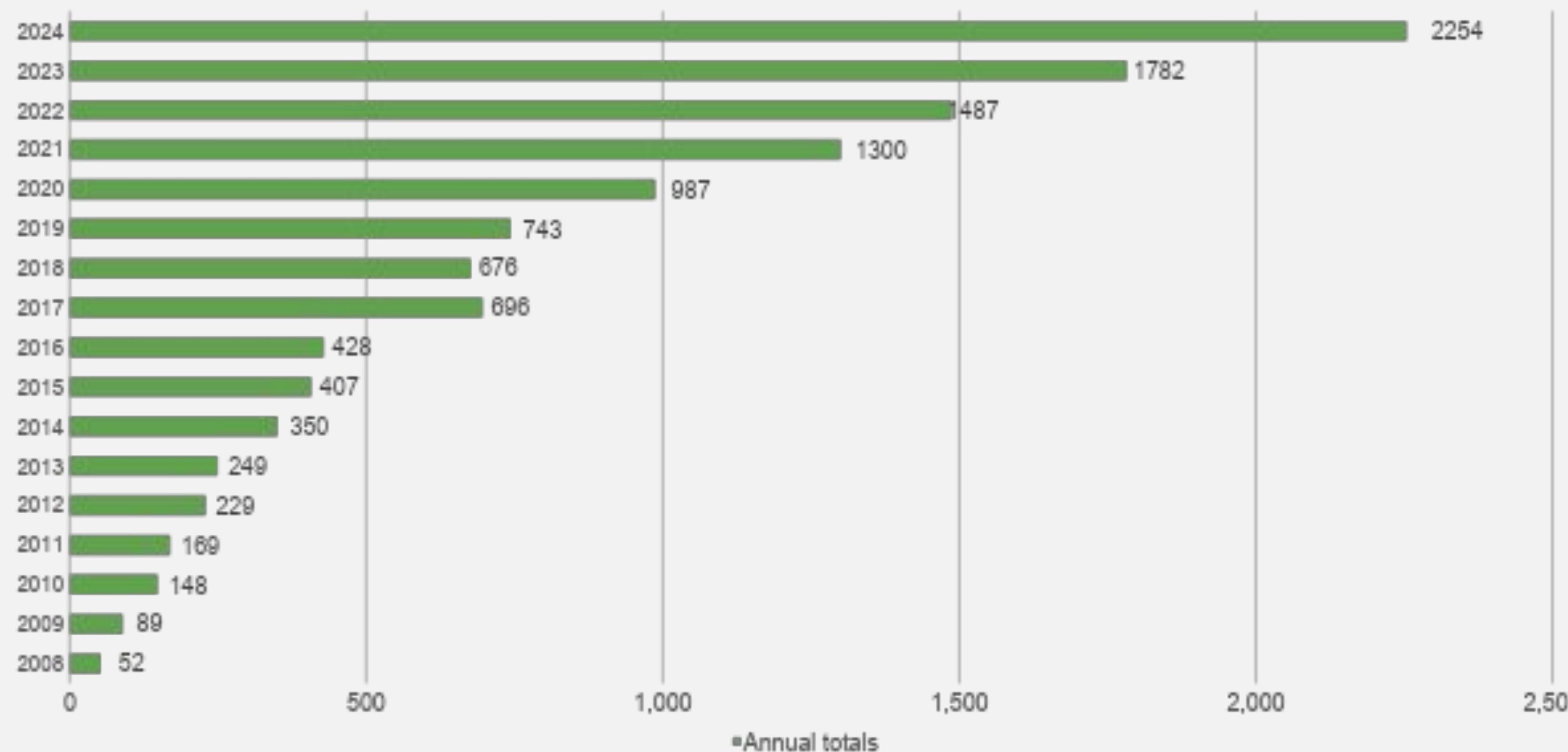
Uses of biodiversity evidence

Transform

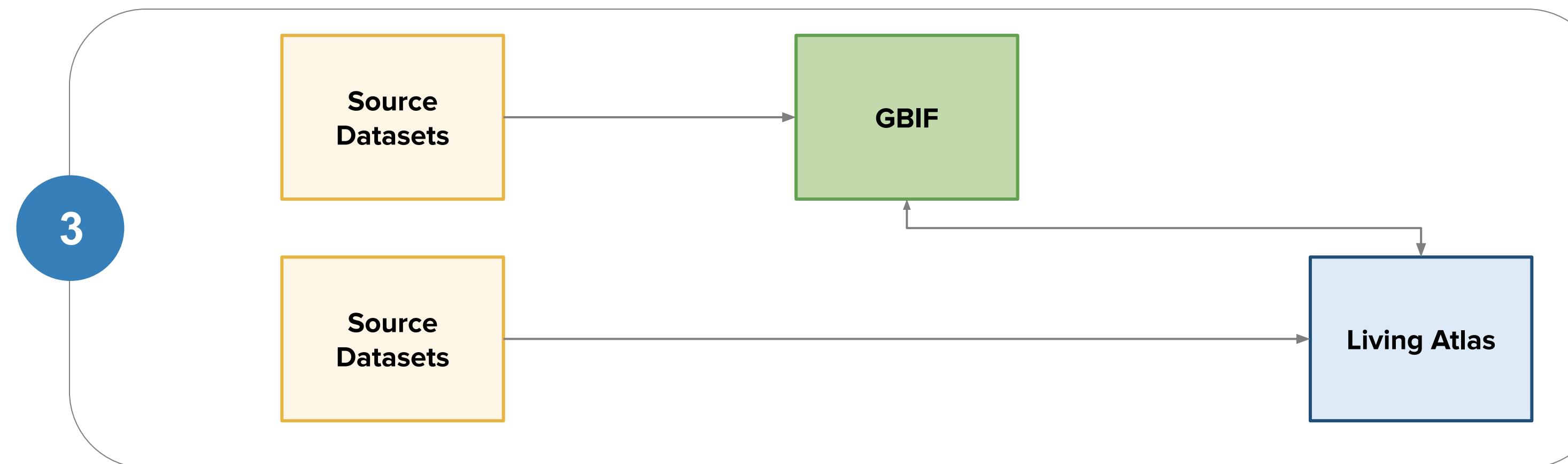
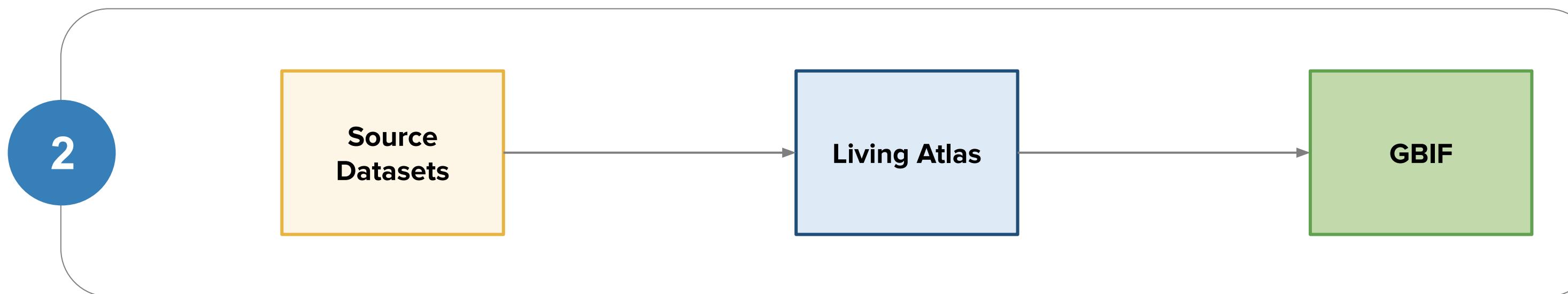
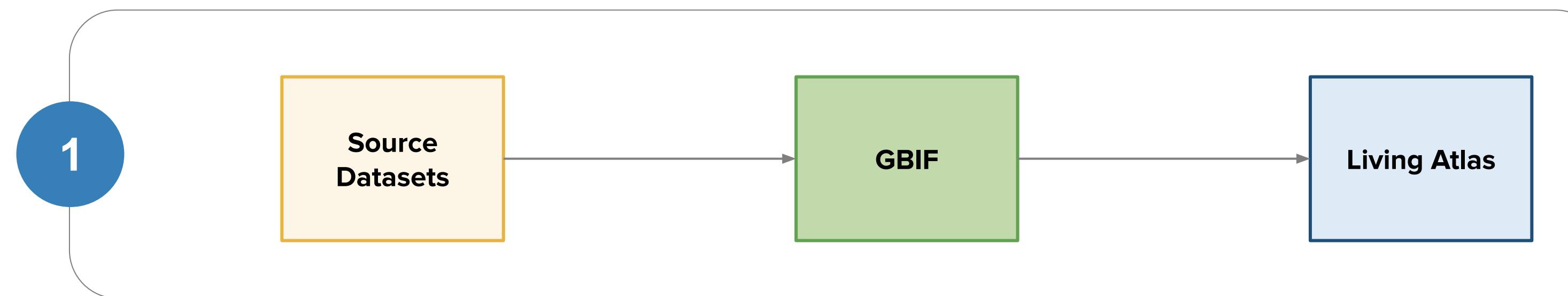
Apply and use data



Peer-reviewed publications using GBIF-mediated data

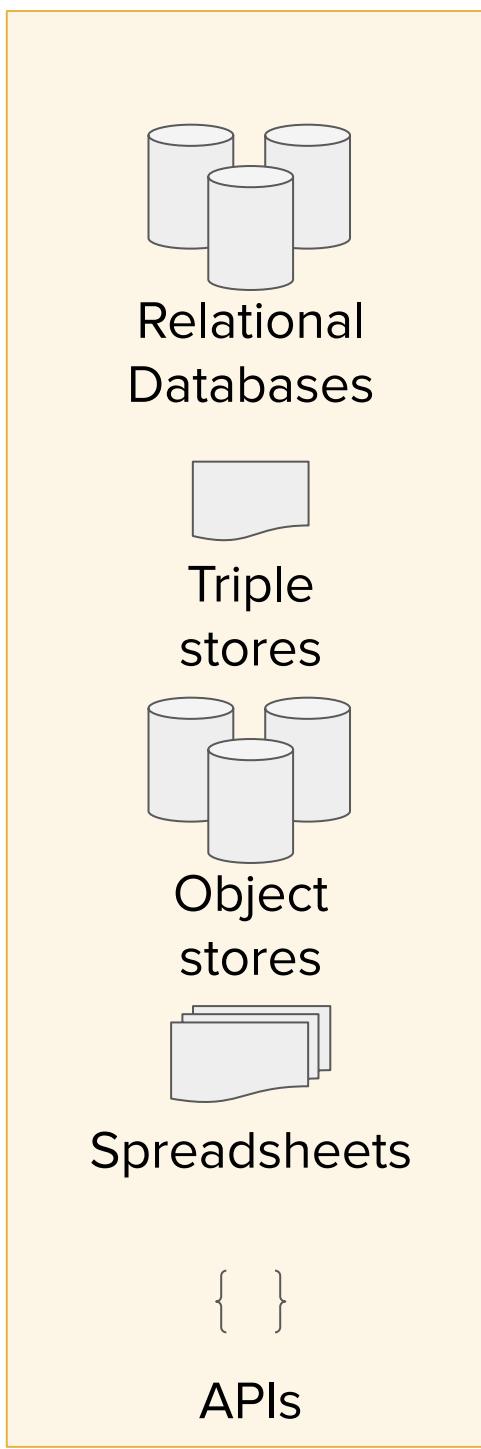


LAs and GBIF: Modes of operation (simplified)

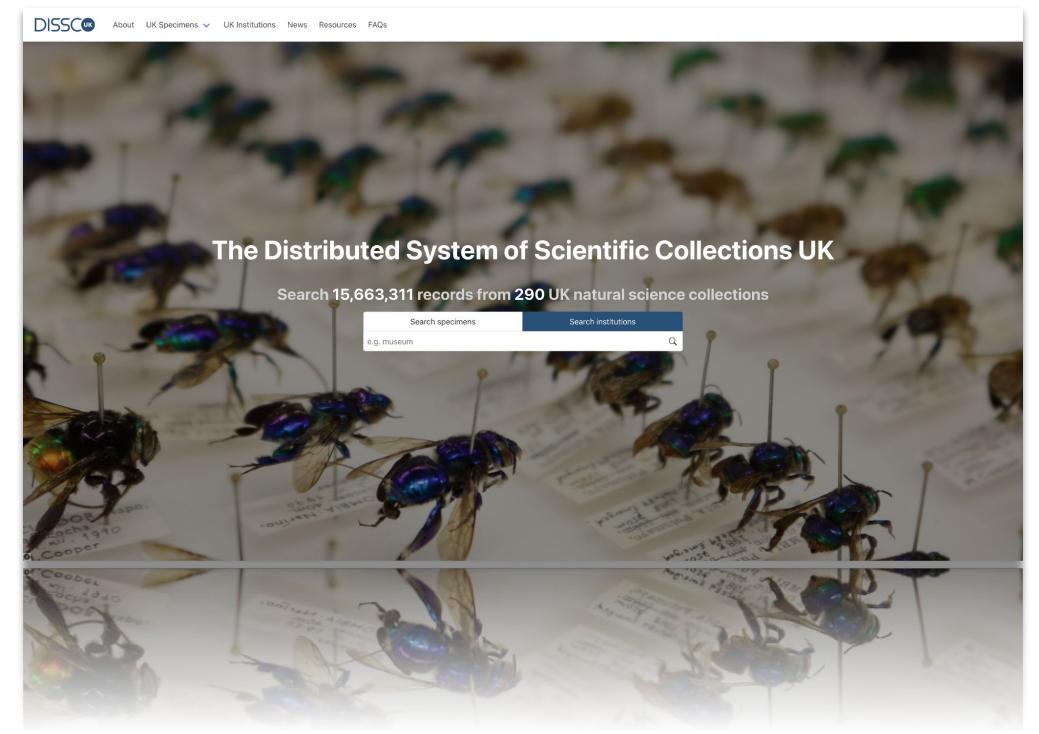
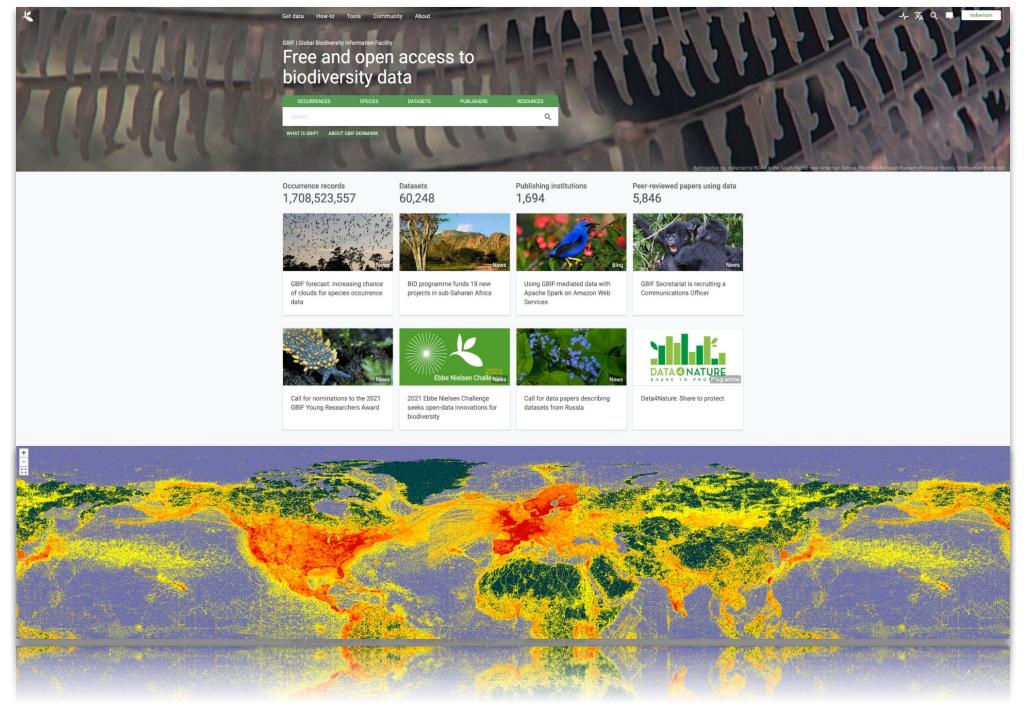
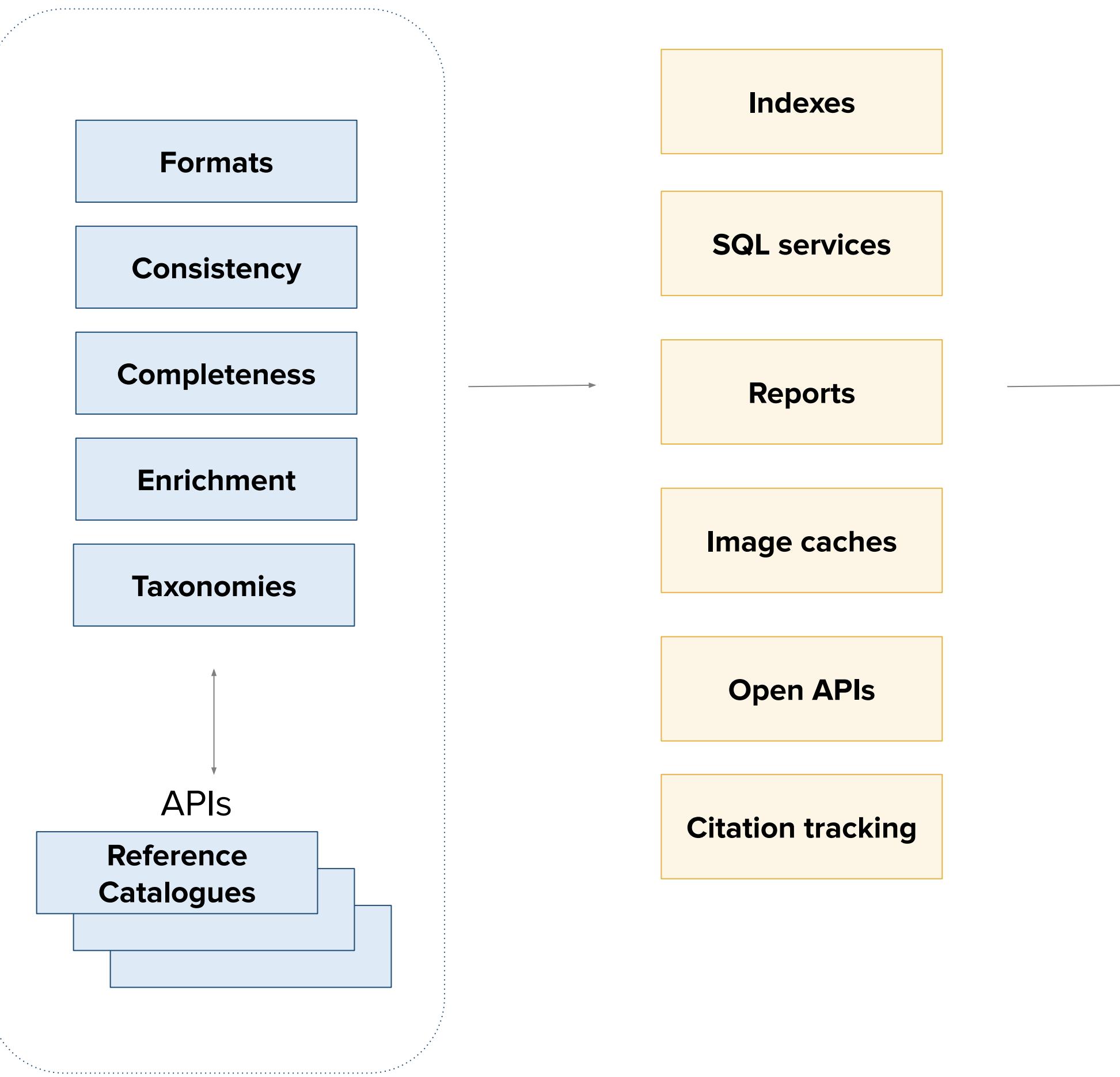


GBIF Data Warehouse (simplified)

Source Systems

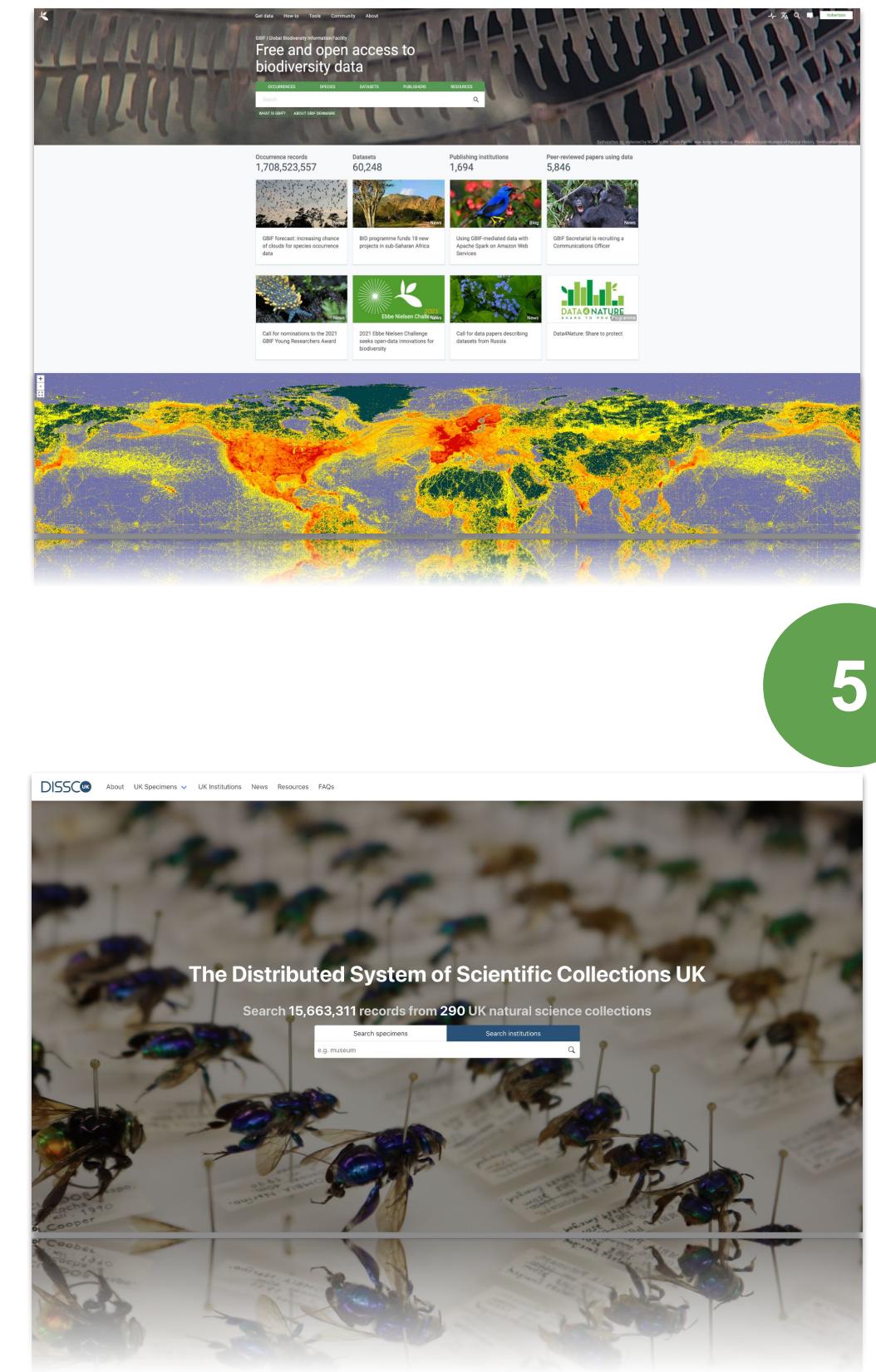
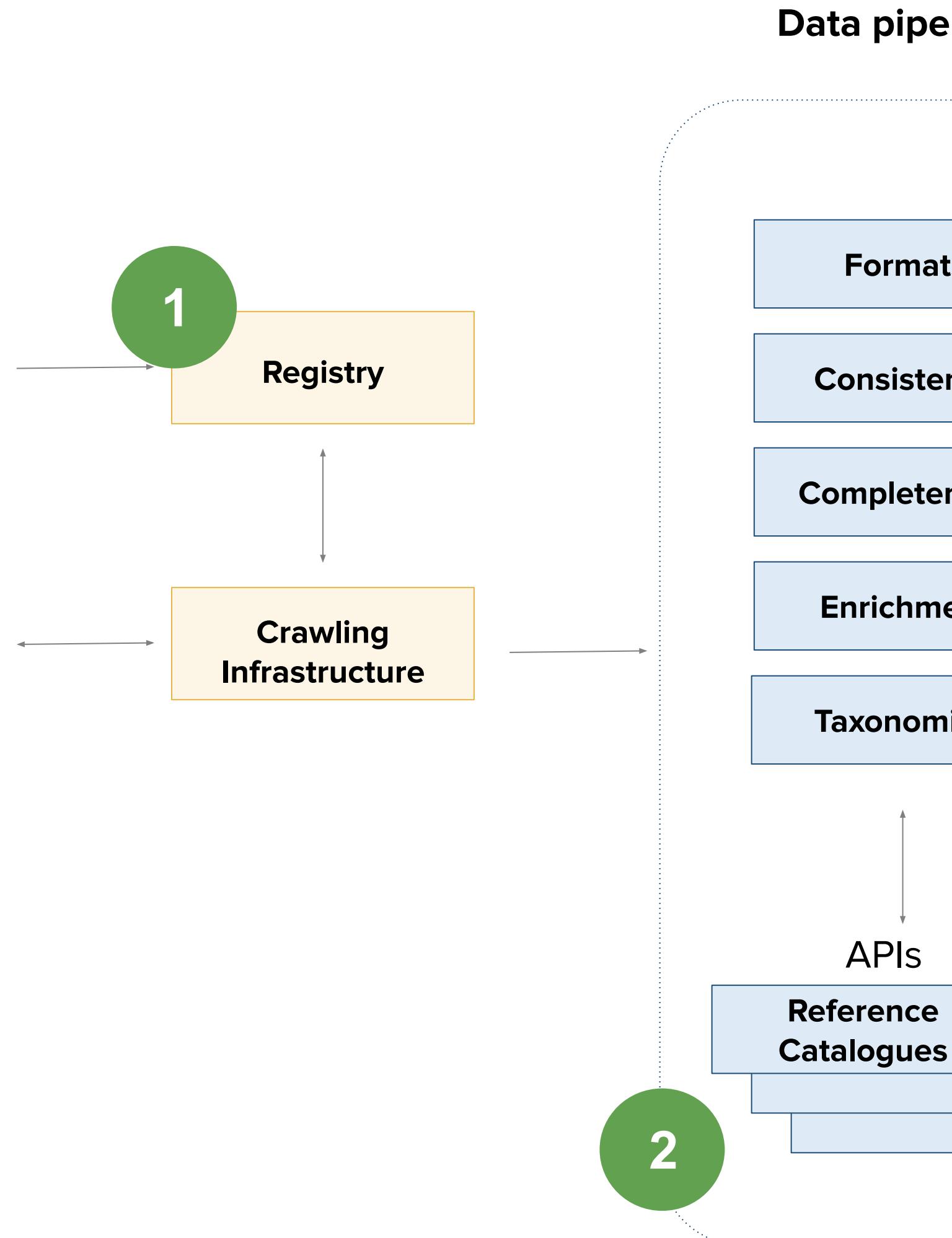
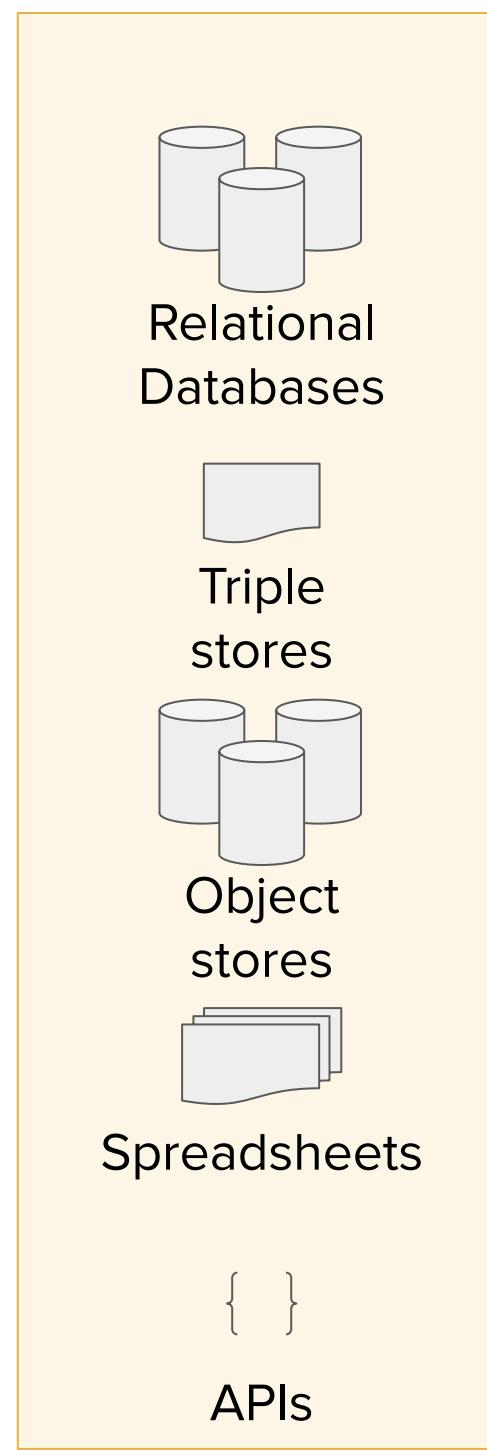


Data pipelines



GBIF Data Warehouse (simplified)

Source Systems



Registry (collectory equivalent)

- Shared database with API and UI
 - Datasets, organisations, endpoints etc
 - GRSciColl collections
 - Vocabulary management
 - Basic authentication controls
 - Synchronises with master record sources
 - Identifier assignment (e.g. DOIs)
 - Event propagation

GBIF Registry				
<ul style="list-style-type: none">OrganizationsDatasetsNetworksInstallationsGRSciColl collectionsGRSciColl institutionsNodesVocabulariesSuggested changesMonitoring	Datasets / Search			
	Search datasets			
	<input type="text" value="Search"/> Search			
	112,036 results			
	page 1/4,482			
	Title	Created	Created by	Modified
	Higher than the others: Bothrops bilineatus (Wied-Neuwied, 1821) (Serpentes: Viperidae) a new altitudinal record and range extension in Bolivia	Mon 10 Mar 2025 13:10:44	plazi	Mon 10 Mar 2025 13:10:44
	First record of Oligosarcus itau (Characiformes: Characidae) outside the type locality, and second after the description	Mon 10 Mar 2025 12:47:51	plazi	Mon 10 Mar 2025 12:47:51
	Bird diversity and annotated checklist of Afrotropical species in extreme south of Algeria	Mon 10 Mar 2025 12:41:48	plazi	Mon 10 Mar 2025 12:41:48
	A new species of Ummidia Thorell, 1875, from Útila Island, Honduras (Araneae: Halnoprocidae)	Mon 10 Mar 2025 12:23:20	plazi	Mon 10 Mar 2025 12:23:20
Data on coral species occurrences in Japan since 1929				c3367060-856b-11d9-8486-b8a03c50a862
Revision of the genus Tibraca Stål (Heteroptera, Pentatomidae, Pentatominae)				Mon 10 Mar 2025 07:18:05
Revisão de Parentheca Berg (Heteroptera, Pentatomidae, Pentatomini)				plazi
Sun 09 Mar 2025 21:54:25				Sun 09 Mar 2025 21:54:25
Ontogeny and phylogeny of the anaerobic genus Urostomides with supplementing morphological characterization of the type and one little-known species (Alveolata: Ciliophora: Armophorea)				plazi
Sun 09 Mar 2025 20:19:39				Sun 09 Mar 2025 20:19:39
On the spider family Dolomedidae Simon, 1876 in India and Sri Lanka (Arachnida: Araneae)				plazi
Sun 09 Mar 2025 18:07:57				Sun 09 Mar 2025 18:07:57
Ne onset of large size in Cretaceous marine turtles (Protostegidae) evidenced by new fossil remains from the Valanginian of Colombia				plazi
Fri 07 Mar 2025 20:12:09				Fri 07 Mar 2025 20:50:11
New latest Famennian (Late Devonian) cystoporate bryozoans from the Bulongguoer section, northwest Xinjiang, China				plazi
Fri 07 Mar 2025 19:27:55				Fri 07 Mar 2025 19:43:04
Cloeodes tovauna: a new species previously identified as Cloeodes aymore Massariol & Salles, 2011 (Ephemeroptera: Baetidae)				plazi
Fri 07 Mar 2025 18:50:54				Fri 07 Mar 2025 19:01:05
A new dentition-based phylogeny of Litopterna (Mammalia: Placentalia) and 'archaic' South American ungulates				plazi
Fri 07 Mar 2025 18:36:52				Fri 07 Mar 2025 18:51:03
The rediscovery of Ohwia luteola (Fabaceae, Papilionoideae) after 50 years and comparative analysis of its morphology and ecology with other members of the genus				plazi
Fri 07 Mar 2025 18:38:23				Fri 07 Mar 2025 18:41:03
The first record of the genus Eupitheciella (Lepidoptera: Geometridae) from the Americas				plazi
Fri 07 Mar 2025 18:20:24				Fri 07 Mar 2025 18:41:02
The first record of the genus Eupitheciella (Lepidoptera: Geometridae) from the Americas				plazi
Fri 07 Mar 2025 18:31:00				Fri 07 Mar 2025 18:41:01
The first record of the genus Eupitheciella (Lepidoptera: Geometridae) from the Americas				plazi
Fri 07 Mar 2025 18:31:00				Fri 07 Mar 2025 18:41:01

<https://registry.gbif.org>



Global Registry of Scientific Collections

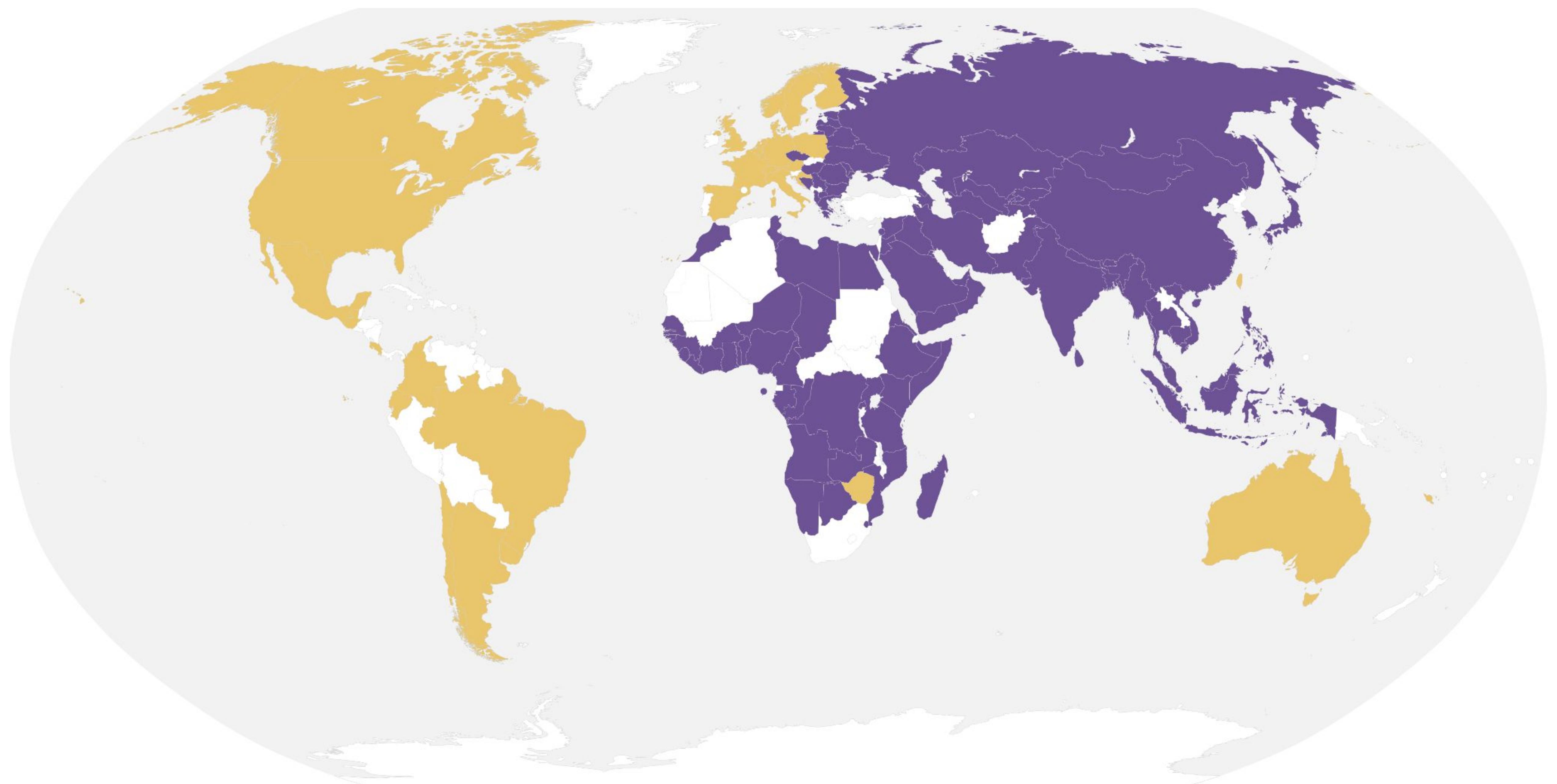
A worldwide catalogue of scientific collections

► Getting started?

⊕ Institutions in Denmark



GRSciColl Content Mediators



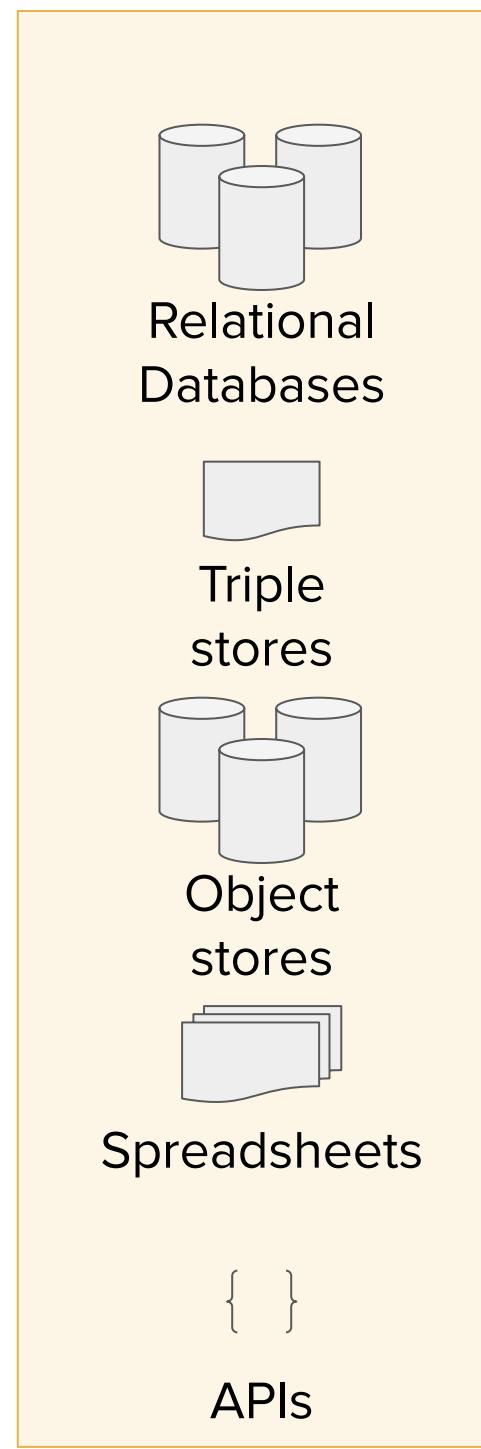
The Distributed System of Scientific Collections UK

Search 15,663,311 records from 290 UK natural science collections

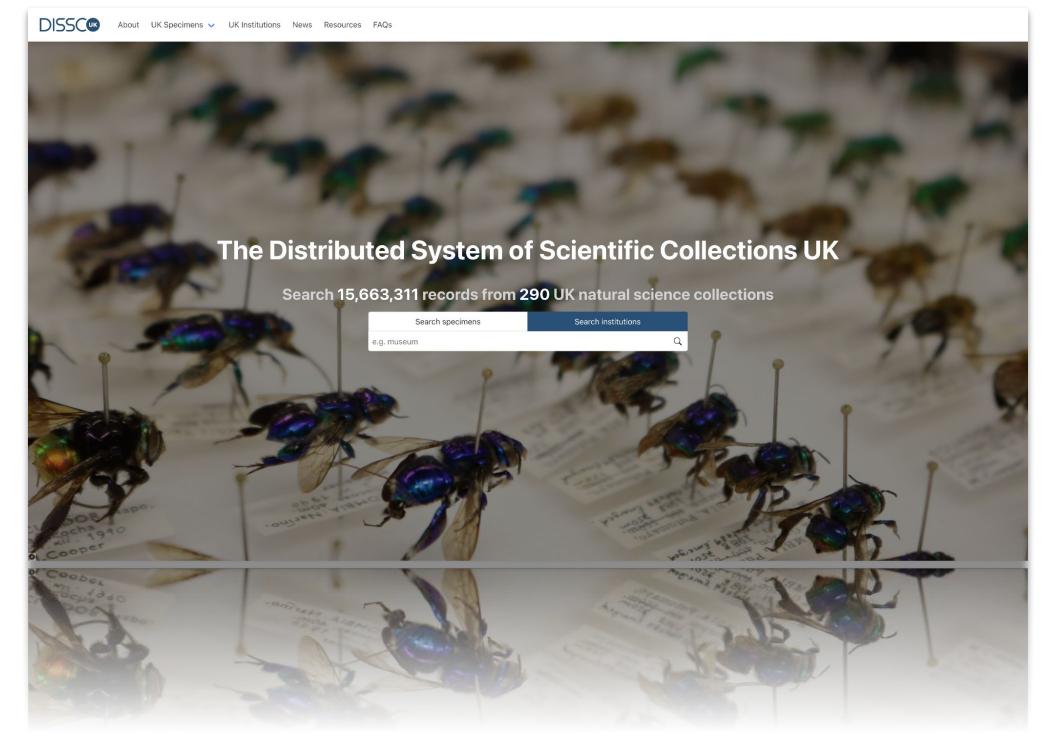
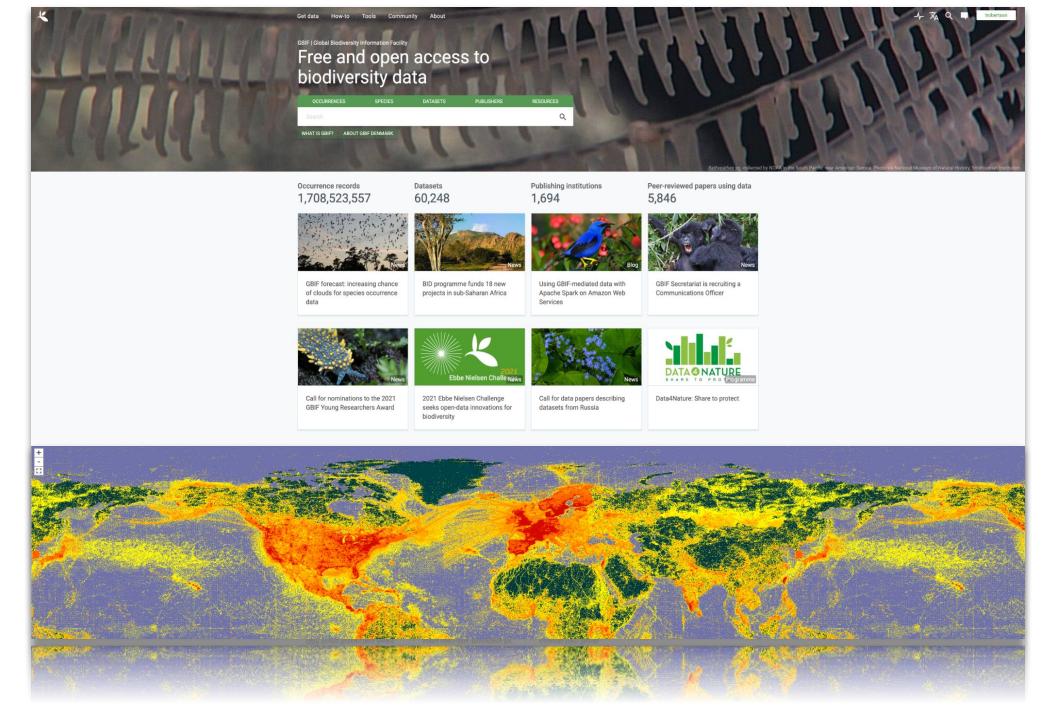
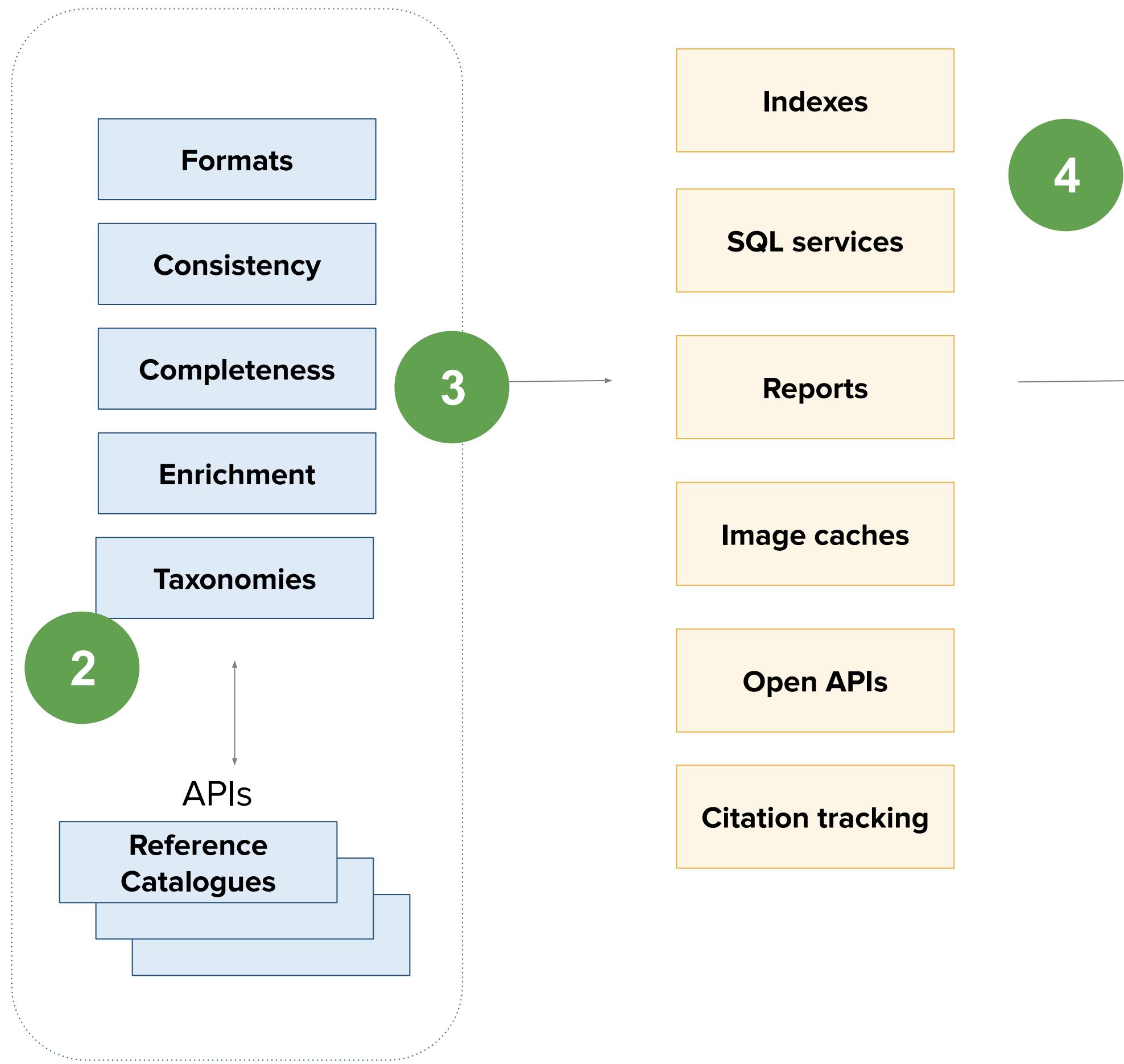
Search specimens Search institutions

GBIF Data Warehouse (simplified)

Source Systems

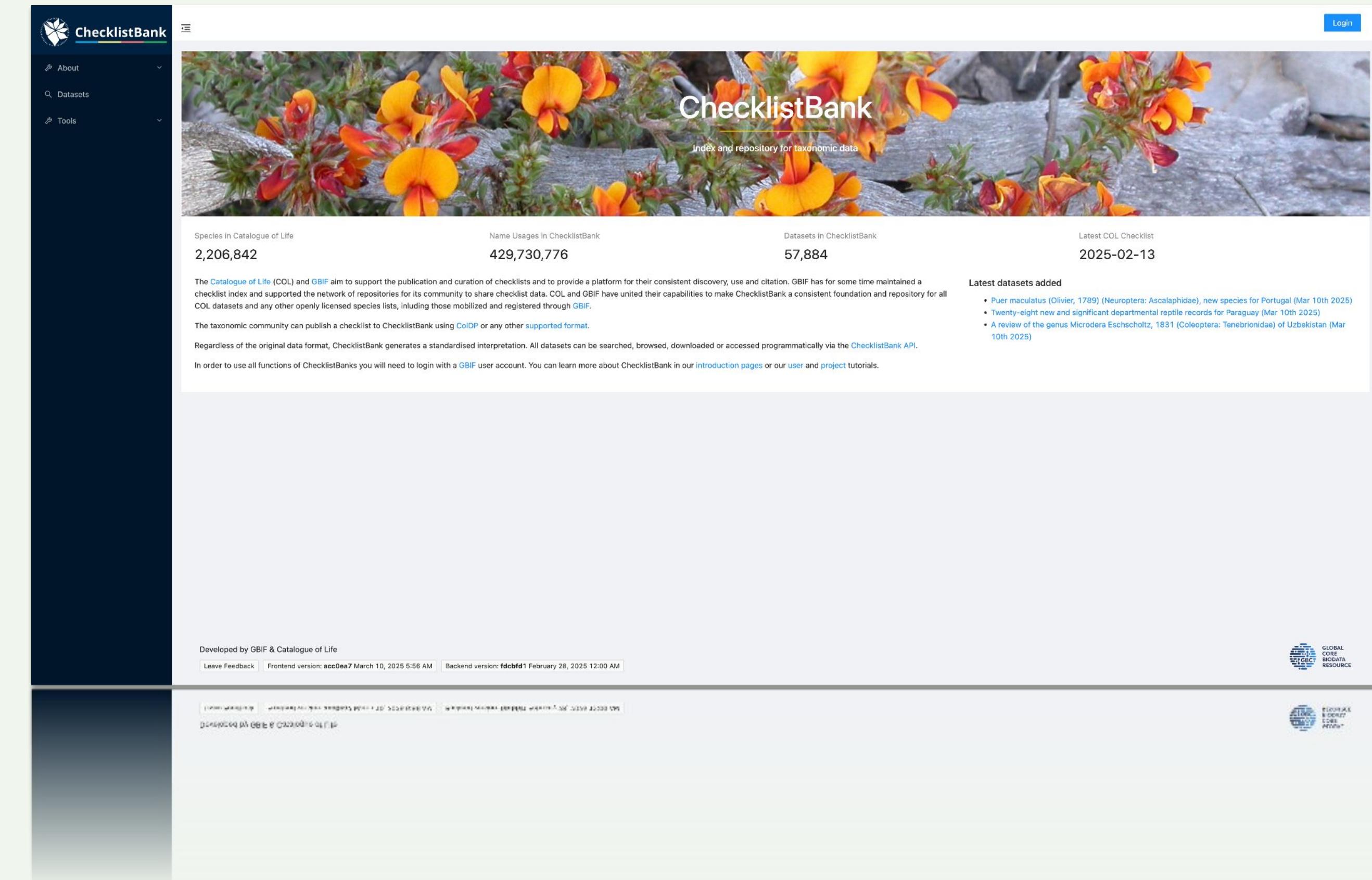


Data pipelines



ChecklistBank (checklists and taxonomy building)

- Checklist repository
 - All GBIF datasets, + additions
 - Multiple input formats (e.g. DwC-A, COL-DP)
 - Standard API
 - Metrics, issues, metadata
 - Search, browse and download
- Editing tools
 - Create projects, release datasets
 - Tree editor
 - Sector assembly
 - Editorial workbench and decisions
 - Overlays
- Coming soon
 - Docker image for lookups (en premise)

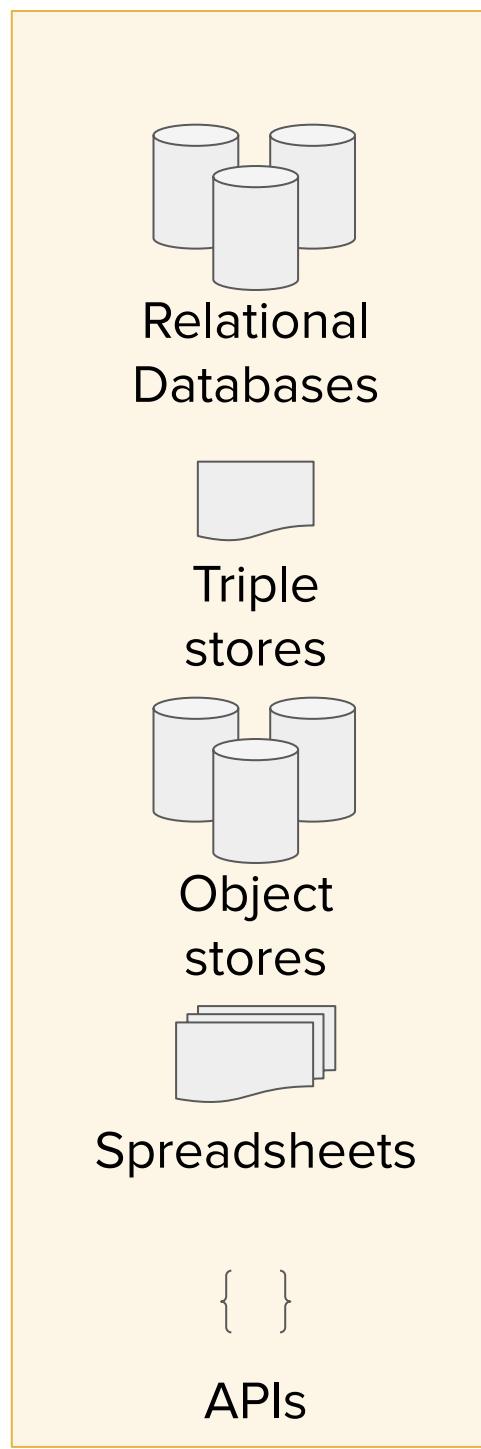


<https://checklistbank.org>

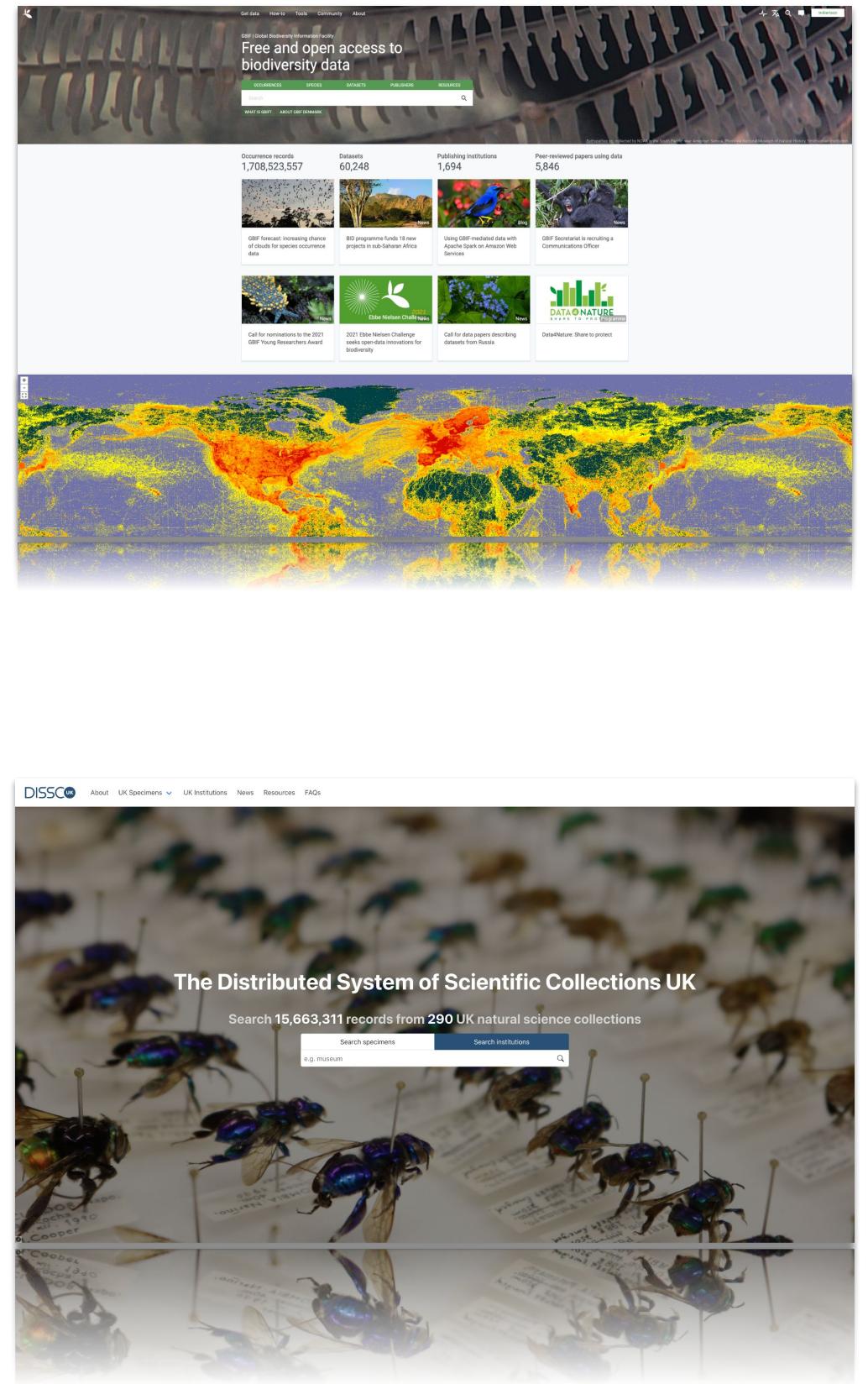
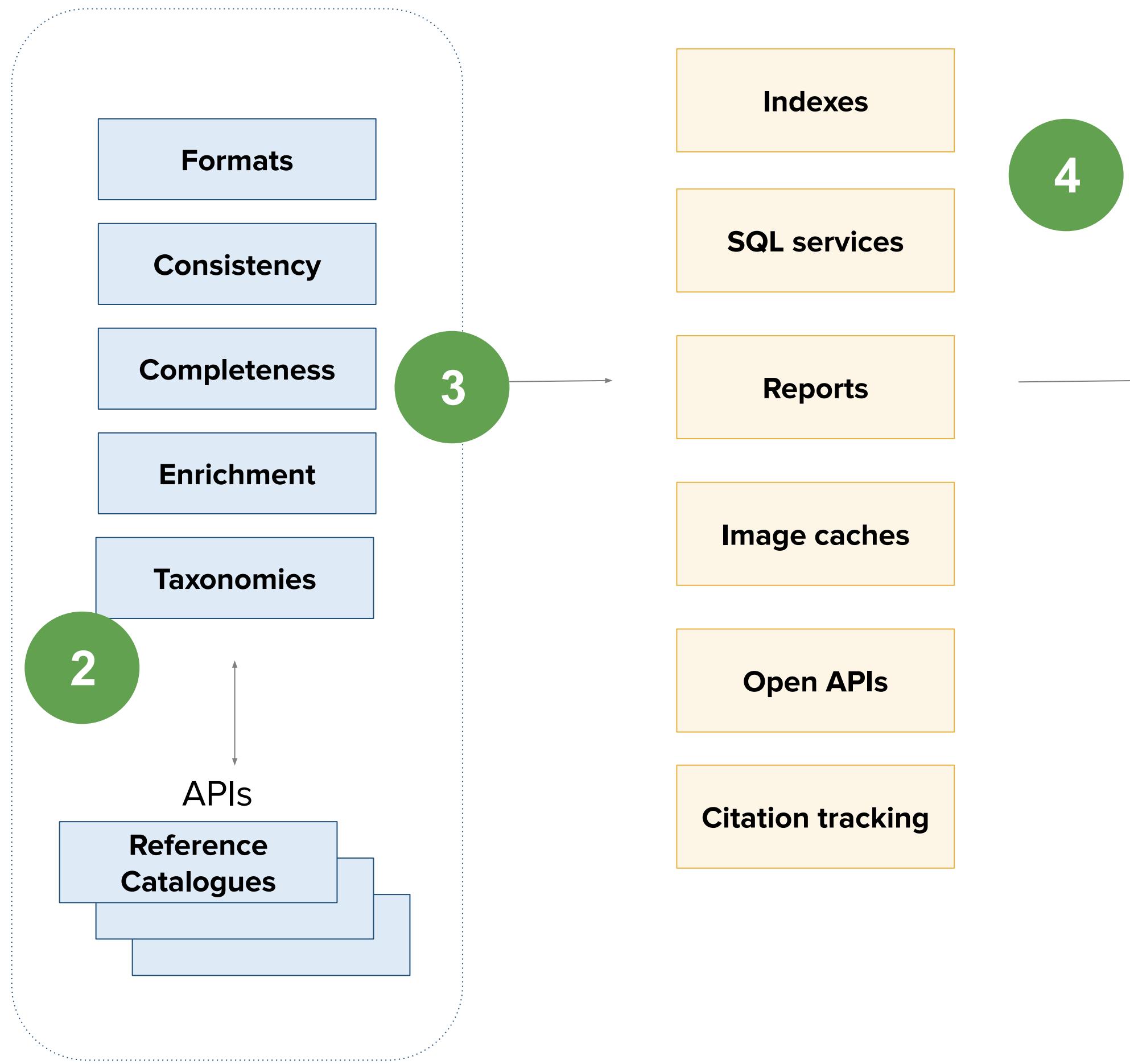


GBIF Data Warehouse (simplified)

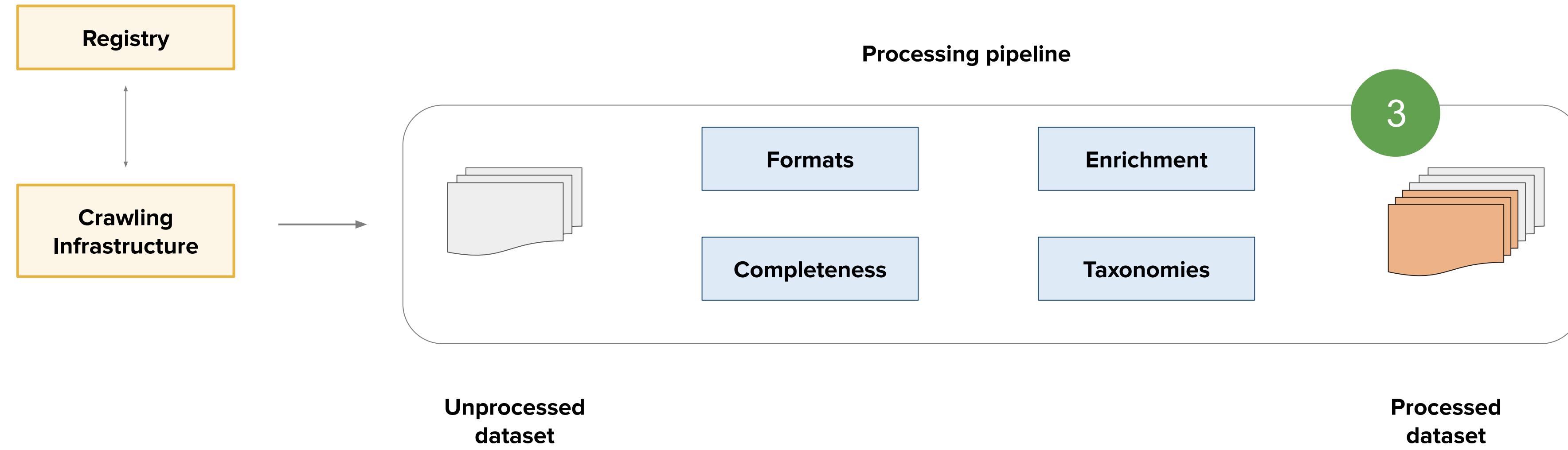
Source Systems



Data pipelines

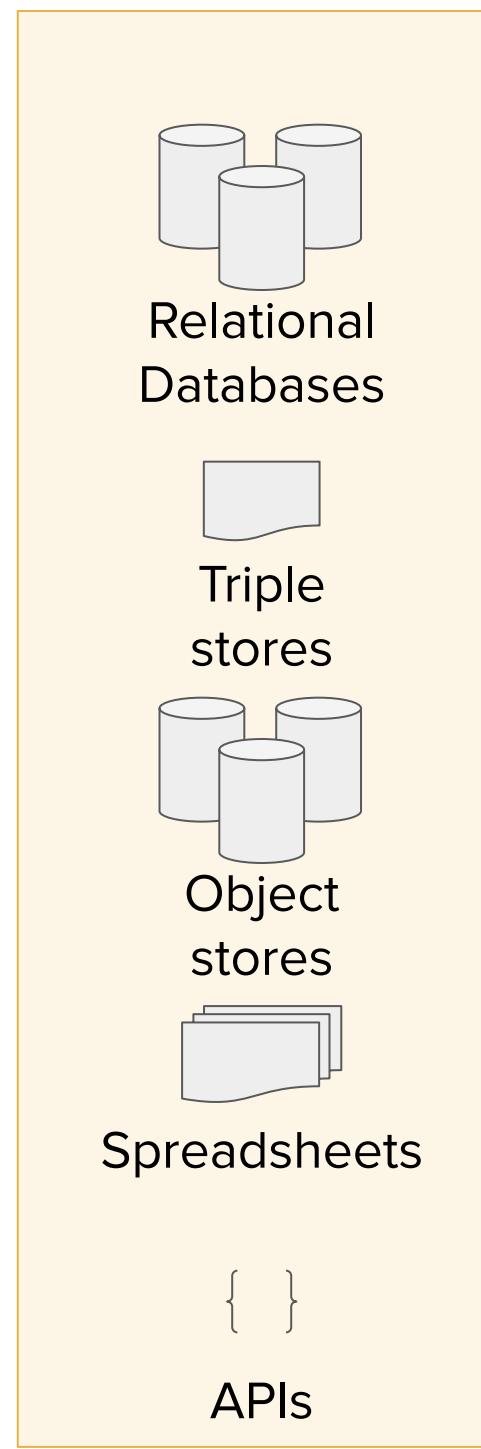


Idea: GBIF processing as a service?

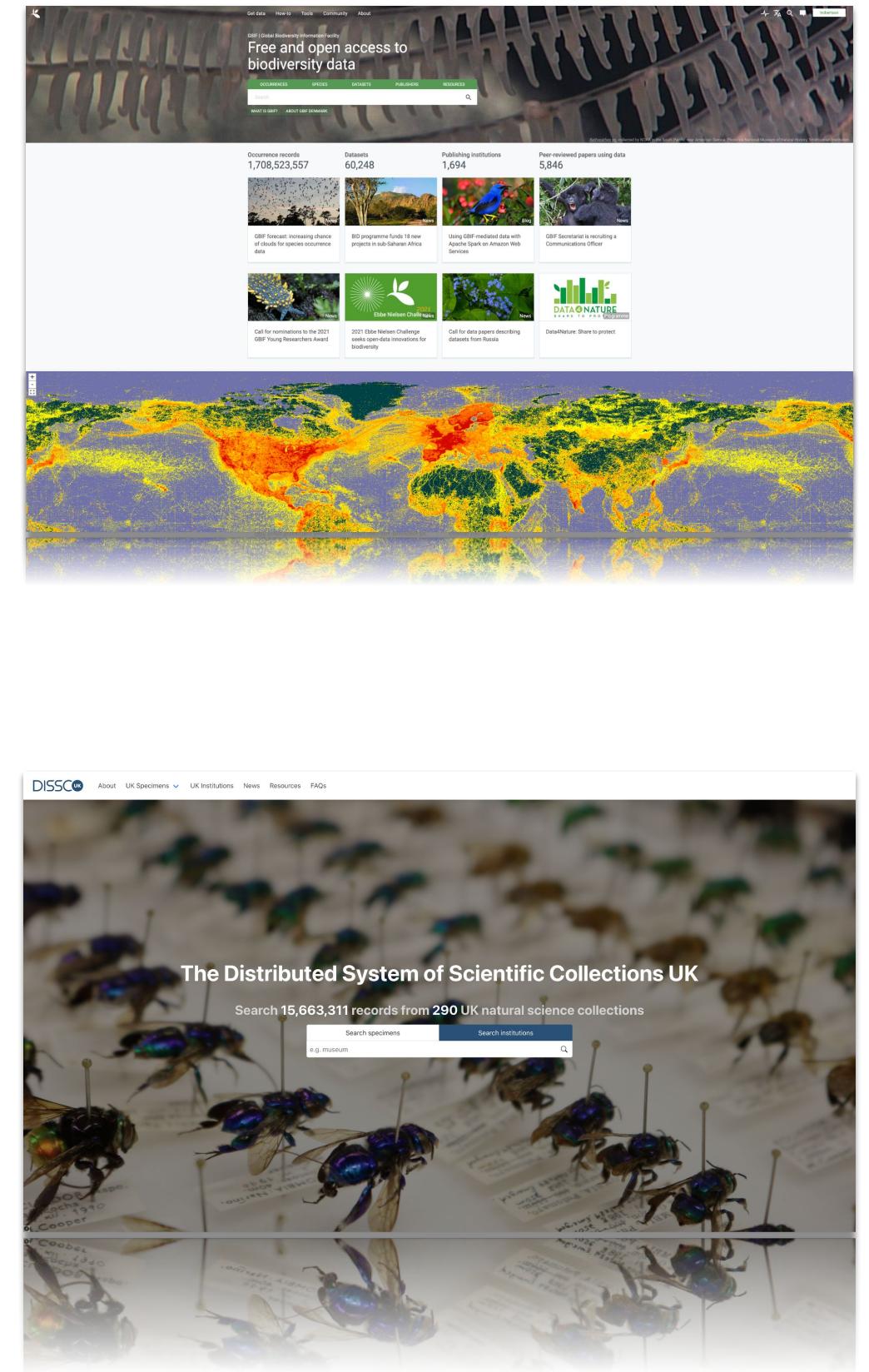
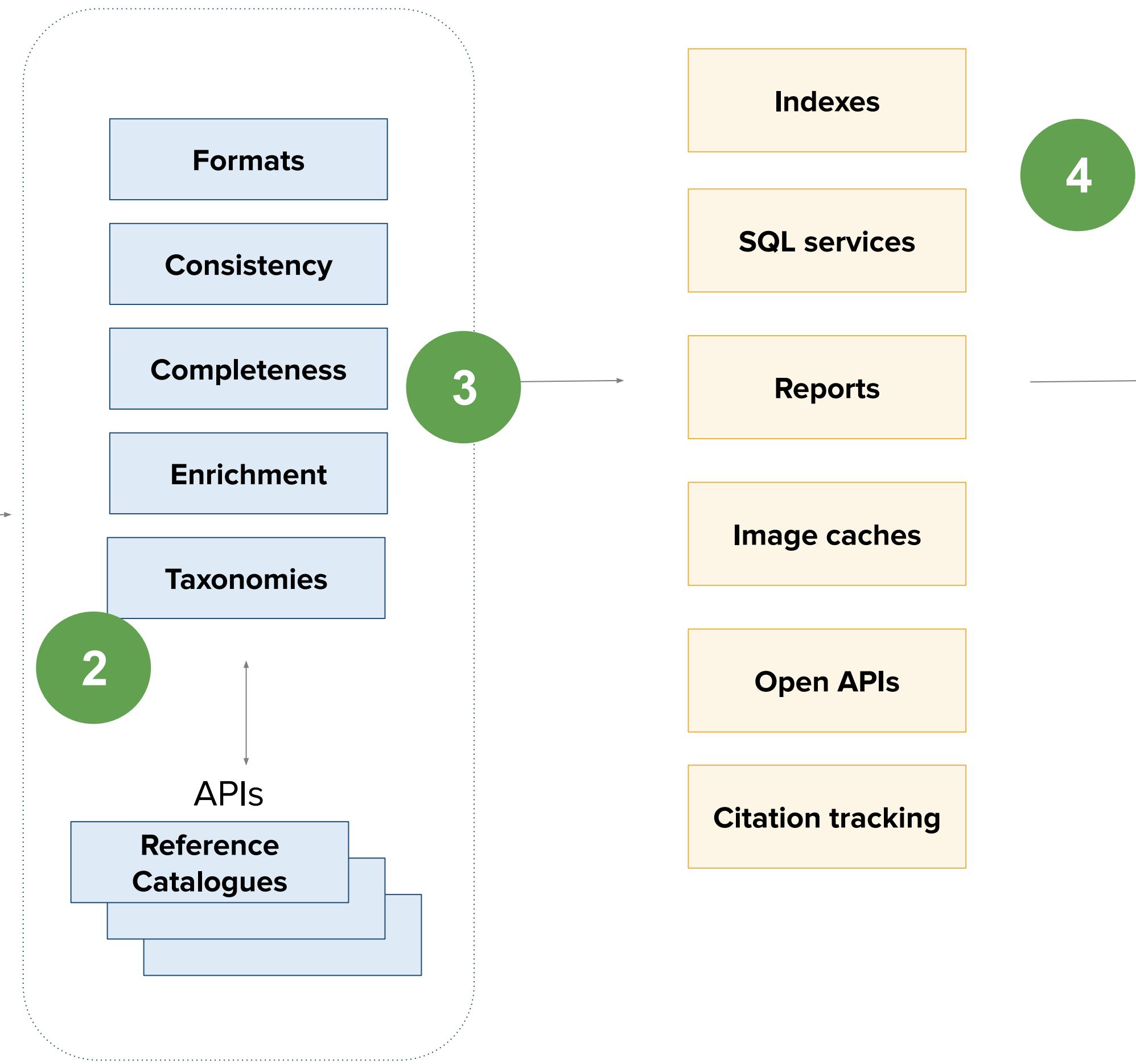


GBIF Data Warehouse (simplified)

Source Systems



Data pipelines



893,365 results with images

													
<i>Trillium erectum L.</i> May 3, 2015, 7:38 United States of A	<i>Carya ovata (Mill.) K.Koch</i> Nov 17, 2013 United States of America	<i>Lepomis gibbosus (Linnaeus, 1758)</i> May 20, 2015, 1:21 United States of A	<i>Cyanocitta cristata (Linnaeus, 1758)</i> Apr 18, 2021, 2:12 United States of A	<i>Drosera rotundifolia L.</i> Jun 17, 2019, 11:43 AM United States of America	<i>Betula papyrifera Marshall</i> May 20, 2016, 9:0 United States of A	<i>Anania hortulata Linnaeus, 1758</i> Jun 17, 2018, 10:59 PM United States of America	<i>Ambystoma maculatum (Shaw, 1802)</i> May 17, 2003, 9:56 AM United States of America	<i>Cystopteris bulbifera (L.) Bernh.</i> Aug 31, 2017, 11:46 AM United States of America	<i>Rosa multiflora Thunb.</i> Jun 25, 2020, 2:14 United States of A	<i>Juncus alpinarticulatus subsp. nodulosus (Wahlenb.) Hämst.-Ahti</i> Jul 31, 1879 United States of	<i>Lithobates sylvaticus (LeConte, 1825)</i> May 24, 2020, 2:19 PM United States of America	<i>Sambucus racemosa subsp. racemosa L., 1753</i> May 23, 2016, 4:5 United States of A	<i>Poecile atricapillus (Linnaeus, 1766)</i> Jan 26, 2020 United States of America
													
<i>Condica vecors Guenée, 1852</i> May 26, 2019 United States of America	<i>Asteropeampa celtis (Boisduval & Le Conte, 1833)</i> Jul 3, 2006 United States of America	<i>Verbena urticifolia L.</i> Aug 18, 1992 United States of Am	<i>Heterophleps triguttaria Herrich-Schäffer, 1854</i> Jun 4, 2014 United States of America	<i>Campaea perlata (Guenée)</i> Aug 19, 2013, 8:05 AM United States of America	<i>Acer saccharum Marshall</i> Feb 23, 2014, 4:10 United States of AII	<i>Tsuga canadensis (L.) Carrière</i> Aug 14, 2019, 10:1: United States of AI	<i>Dennstaedtia punctilobula (Michx.) T.Moore</i> Oct 1, 2021, 5:52 P United States of Ar	<i>Vulpes vulpes (Linnaeus, 1758)</i> Jun 14, 2013 United States of America	<i>Acronicta americana Harris, 1841</i> Sep 21, 2013, 2:35 United States of AI	<i>Notopthalmus viridescens (Rafinesque, 1820)</i> Apr 8, 2019, 9:09 AM United States of America	<i>Foxostoma rufum (Linnaeus, 1758)</i> Apr 25, 2014 United States of America	<i>Dryobates pubescens (Linnaeus, 1766)</i> Apr 5, 2020 United States of America	
													
<i>Agrilus ribesi Schaefer, 1946</i> Jun 10, 2021, 2:14 PM United States of America	<i>Bittacomorpha clavipes (Fabricius, 1781)</i> Jun 3, 2014 United States of A	<i>Sitta canadensis Linnaeus, 1766</i> Nov 20, 2018, 1:09 PM United States of America	<i>Sayornis phoebe (Latham, 1790)</i> Apr 5, 2020, 9:09 AM United States of America	<i>Ilex verticillata (L.) A.Gray</i> Nov 11, 2014 United States of America	<i>Larus smithsonianus Coues, 1862</i> Jun 6, 2014 United States of America	<i>Goodyera repens (L.) R.Br.</i> Aug 6–10, 1900 United States o	<i>Trillium undulatum Willd.</i> Jun 3, 2019, 5:14 I United States of A	<i>Clintonia borealis (Aiton) Raf.</i> Jun 18, 1921 United States of America	<i>Amphipoea Billberg, 1820</i> Aug 12, 2014, 9:13 PM Clustered	<i>Formica subsericea Say, 1836</i> May 8, 2022, 3:28 F United States of Am	<i>Hesperis matronalis L.</i> May 21, 2016, 10: United States of A	<i>Calystegia sepium subsp. appalachiana Brummitt</i> Sep 12, 2022, 10: United States of A	<i>Agrotis venerabilis Walker</i> Sep 9, 2018, 8:15 A United States of Ar
													
<i>Lophocampa caryae Harris, 1841</i> Sep 23, 2017 United States of Ar	<i>Setophaga caerulea (J.F.Gmelin, 1789)</i> Sep 24, 2020, 1:23 PM United States of America	<i>Phalaris arundinacea L.</i> Jul 11, 1900 United States of	<i>Meleagris gallopavo Linnaeus, 1758</i> Dec 13, 2016, 10:53 AM United States of America	<i>Sparganium americanum Nutt.</i> Aug 4, 2019, 2:07 P United States of Arr	<i>Antennaria parlinii subsp. fallax (Greene)</i> May 20, 1918 United States of	<i>Parthenocissus pensylvanica Muhl. ex Willd.</i> Jun 27, 1936 United States of America	<i>Junco hyemalis (Linnaeus, 1758)</i> Dec 25, 2017, 2:32 PM United States of America						

More





BIODIVERSIDAD PARA TODOS

crear · compartir · transformar

Consultar



33,494,354

Registros biológicos



3,185

Conjuntos de datos



6,268

Fichas de especies



453

Listas de chequeo



241

Socios publicadores



Datos abiertos
Aves en ventanas



Datos abiertos
Fauna y flora del Casanare,



Comité técnico
Principales acuerdos y



Sharing infrastructure: Discussion

Constraints

- Mandate, Sovereignty?

Perceived benefits?

- Citation tracking, consistency, IDs
- Focus on value-adding services
- Next generation of DwC...

Technical challenges?

- Taxonomy?
- Sensitive data?

Risks?

- Flexibility, control



Thanks!

