Validation of Biodiversity–Finance Data Sources

Table 1: Validated Biodiversity–Finance Data Sources

Dataset	Institution	A/S	Access	Formats	Time-series	Notes & Sources
GBIF	GBIF Secretariat	10/10	Public	API, CSV (Darwin Core)	Yes (occurrence records)	Fully open-access biodiversity database. Records are Darwin-Core formatted (hundreds of millions of species-occurrence points), accessible via API and bulk download. Data include time-stamped records (enabling trend analyses). Well-structured (max scores confirmed).
TNFD Beta Framework	TNFD (Task-force on Nature)	9/2	Public	PDF (guidance report)	No	Open "beta" disclosure framework (v0.4, 2023) available as PDF. Provides narrative guidance and example indicators, not a numeric dataset. No structured data or time series. (Facilitates risk reporting but not direct modeling.)

Dataset	Institution	A/S	Access	Formats	Time-series	Notes & Sources
UNEP-WCMC WDPA	UNEP-WCMC / IUCN	8/9	Public (free; registration)	GIS (shapefile), CSV	Yes (monthly snapshots)	World Database of Protected Areas (WDPA) – global protected-area inventory managed by UNEP-WCMC/IUCN. Updated monthly and freely downloadable. Data are structured geospatial records (shapefiles, attribute tables) using standard schemas. Multiple temporal snapshots allow trend analysis of conservation coverage.
WWF Living Planet Index (LPI)	WWF & ZSL	9/9	Public (registration)	CSV, JSON	Yes (1970–2020)	Vertebrate population time-series database. Publicly available after registration/agreement. Data (population counts by species/locale) downloadable in CSV/JSON. Contains well-structured long-term series of biodiversity trends. Suitable for quantitative analyses (score revised upward).

Dataset	Institution	A/S	Access	Formats	Time-series	Notes & Sources
OECD PINE	OECD	9/8	Public	CSV/XLS (via OECD.Stat)	Yes (annual since 2005)	OECD's Policy Instruments for the Environment (PINE) database – tracks environmental/biodiversity finance instruments across 140+ countries. Freely accessible via OECD.Stat portal. Data are harmonized by country/year/instrument type, with time-series since 2005. Structured and comparable; analysis-ready for econometric modeling.
ENCORE	UNEP-WCMC & UN PRI	10/9	Public (free; signup)	Interactive GIS map; data downloads	No	Interactive map/tool for economic dependencies and impacts on nature. Freely viewable (registration required). Underlying data (ecosystem-service flows, pressure layers) are structured spatial datasets. No continuous time series (static assessment). Designed for risk-exposure modeling of portfolios.

Dataset	Institution	A/S	Access	Formats	Time-series	Notes & Sources
IUCN Red List	IUCN Global Species Programme	8/8	Public (registration)	Web portal, API, CSV	Partial (updates by assessment)	Authoritative global extinction-risk database. Free online search and data API (account required). Provides taxonomic info, threat categories, population trends, and spatial range (downloadable CSV). Species are periodically re-assessed (no continuous time series). Widely used for biodiversity risk modeling and indicators.
Moody's ESG	Moody's ESG Solutions	2/8	Proprietary	Platform/API	Yes (periodic)	Commercial ESG dataset from Moody's, including biodiversity-related metrics (e.g., habitat loss exposure) for thousands of firms. Data access is restricted to Moody's clients via API/feed. Structured data (standardized scores and indicators) support portfolio risk analysis, but under license.

Dataset	Institution	A/S	Access	Formats	Time-series	Notes & Sources
Refinitiv ESG Data	LSEG (Refinitiv)	2/8	Proprietary	API/data feeds	Yes	Refinitiv ESG (formerly Thomson Reuters Asset4) – large ESG database with environmental and biodiversity indicators. Fully subscription-based; data delivered via licensed API or feeds. Structured and analysis-ready (historical scores), used in financial modeling.
Trucost	S&P Global	1/9	Proprietary	API/data feeds	Yes	S&P Global Trucost – proprietary environmental-impact dataset (GHG, resource use, natural capital) covering over 20,000 companies. Highly structured and model-ready, but entirely licensed. Commonly used in valuation/valuation models by subscribers.