



Scientific Research Group (SciReg) *Working Group Charta*

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1. Purpose and Vision of the Working Group

1.1. Overview

The CETAF Scientific Research Group (SciReG) works to advance and amplify integrative taxonomy as a cornerstone of biodiversity science, supporting research and innovation across ecology, evolutionary biology, conservation, and environmental monitoring. In the long term, the group aims to accelerate species discovery and description - especially for poorly known, hyperdiverse organisms (dark taxa) - through the development, standardisation, and promotion of ethical, scalable, and data-rich research frameworks. These frameworks, including best practices and standard operating procedures (SOPs), will be community driven and will reflect shared priorities and expertise across CETAF institutions and can serve as interoperable tools for large-scale biodiversity assessment.

1.2. Holistic Approach to species discovery and description

- The use of **Natural Science Collections (NSCs)** as an invaluable reference database for taxonomic science that offers insights into species diversity, evolution, and historical distributions.
- The use of **Integrative Taxonomy** to accurately and scalably delimit and describe species, combining multiple lines of evidence.
- Enabling **Biodiversity Monitoring** through accurate species identification and improved reference databases (both physical and digital)





2. Strategic Relevance to CETAF

CETAF catalyses integrative taxonomy. Effective decision-making for nature protection and restoration, at both EU and national levels, depends on accurate, comprehensive knowledge of biodiversity. Integrative taxonomy, which combines multiple lines of evidence such as morphology, genetics, sound, and ecological data, is essential for reliably identifying species. This precision is critical for monitoring changes in ecosystems, assessing conservation priorities, and implementing environmental policies like the Nature Restoration Regulation and the EU Biodiversity Strategy for 2030. With only about 10% of Earth's species scientifically described, there is an urgent need to accelerate biodiversity discovery. This requires integrating human expertise, machine intelligence, modern technologies, and large-scale data collection methods, ranging from automated sampling tools to citizen science initiatives. However, this progress hinges on accurate species delimitation, which integrative taxonomy enables by combining diverse types of data (e.g., physical traits, DNA, images, and sounds) and NSCs. SciReG aims to strengthen this field through training and knowledge exchange, making integrative taxonomy central to scaling-up biodiversity research and addressing environmental challenges effectively.

3. Main Themes and Objectives

The CETAF Scientific Research Group (SciReG) will promote and advance the use of integrative taxonomy as a scalable approach for species delimitation and description. The group will focus on the development and harmonisation of community-driven frameworks, standard operating procedures (SOPs), including benchmarking, and best practices to ensure high-quality, interoperable outputs across institutions. Objective: To embed integrative taxonomy into the broader biodiversity science and policy landscape through coordinated, community-led innovation that supports ethical discovery, reliable identification, and scalable biodiversity assessment.

Key thematic areas include:

3.1. Scalable Species Discovery Workflows

Promote scalable workflows for species delimitation and discovery by integrating morphological, genetic, and ecological data. Emphasis will be placed on moving towards expedient specimen collection, minimizing physical collection when possible, through the use of non-destructive or low-impact techniques (e.g. imaging, trace DNA, predictive modelling), while ensuring scientific robustness and reproducibility.



3.2. Natural Science Collections as Dynamic Research Infrastructure

Coordinate with the CETAF Collections Working Group to advance the use of NSCs as essential infrastructure for integrative taxonomy, including:

- Development of digital/extended reference libraries (e.g. image-based, genetic and genomic datasets) and improved interoperability with already existing databases.
- Standardised digitisation and metadata protocols (in connection with Digitisation Working group).
- Strengthening links between NSCs and modern biodiversity data streams (e.g. through morphological or molecular approaches).
- Collection mining and targeted collection development to support dark taxa work.

3.3. Frameworks for Monitoring-Ready Taxonomy

Coordinate with the CETAF Monitoring Working Group to develop taxonomic approaches that directly support biodiversity monitoring by enabling species-level resolution in high-throughput workflows. Advocate for taxonomy as the foundational “language” of monitoring systems, ensuring interoperability between taxonomic research and applied biodiversity assessment.

3.4. Infrastructure Program Alignment

In close collaboration with the CETAF Secretariat, serve as a communication channel between EU Infrastructure programs - like TETTRIs, DiSSCo and BGE - and the CETAF community.

3.5. Best Practices for Dark Taxa and Model Systems

Support the development of model systems to test, refine, and benchmark taxonomic methods across data-poor, hyperdiverse lineages. Promote standard operating procedures (SOPs) that ensure methodological rigour and reproducibility, whether or not formal names are available. This includes exploring flexible, integrative frameworks such as the proposed GHOST (Group-based, Hierarchical, Open Species Typology), designed to complement Linnaean taxonomy by organising biodiversity based on shared traits, genetic markers, and ecological roles.

3.6. Standards and Interoperability

Coordinate efforts to harmonise integrative taxonomy methods, data formats, and infrastructure across CETAF institutions. Encourage compatibility with broader initiatives (e.g. other CETAF working groups, EU Infrastructure Programs, GBIF, EU monitoring frameworks).

3.7. Training, Knowledge Exchange, and Community Engagement

Coordinate with the CETAF training and e-Learning working group and CETAF-DEST to facilitate cross-institutional training in integrative taxonomy tools (e.g. image analysis, AI, molecular and bioinformatics workflows) and provide venues for knowledge exchange. Engage the wider CETAF network in co-developing and validating shared practices.

4. Work Plan and Deliverables

The working group will focus on both thematic development and community engagement through a structured annual programme of activities. The outputs aim to standardise and promote scalable, community-driven approaches to integrative taxonomy across CETAF institutions.

4.1. Thematic Focus Areas:

Each year, the group will concentrate its work around core theme(s)/subthemes (e.g. Scalable Workflows, Dark Taxa, Monitoring-Ready Taxonomy, Natural Science Collections in the Digital Age). For each theme, we will deliver:

- A **thematic online lecture or panel discussion** with invited experts (1–2 per theme);
- A **publishable output**, such as a best-practice brief, opinion piece, or protocol draft (eg. Guidelines for Ethical Sampling in Taxonomy or a Dark Taxa Primer);
- A **highlighted case study** from within the CETAF community.

4.2. Annual Events and Community Exchange:

- A **roundtable or discussion session** at the CETAF General Assembly each year, focused on collaborative decision-making and cross-WG alignment;
- **Online working sessions** or training-focused meetings (1–2 per year), hosted on CETAF's digital platform;
- An **annual calendar of events and outputs**, published at the beginning of each year.

4.3. Communication and Dissemination:

Regular social media presence (LinkedIn, other channels t.b.d.);

- A **featured paper or tool spotlight** in CETAF communications (e.g. newsletter, blog), selected via open call to ensure inclusive and representative showcasing of community contributions;
- A shared **repository**¹ for SOPs, protocols, and curated tools developed or recommended by the group;
- Ongoing **coordination with other CETAF working groups** to identify and build on interface topics.

¹ The SciReG prefers to contribute to already existing repositories

4.4. Evaluation and Reflection:

- Annual **feedback collection** after key events to track relevance, engagement, and priorities;
- Periodic **internal reviews** of output uptake and community participation to inform future planning.

5. Evaluation and Success Metrics

The success of the working group will be measured by the quality, relevance, and uptake of its outputs, as well as the depth and breadth of community engagement. This evaluation framework is designed to ensure transparency, responsiveness, and continuous improvement, reinforcing the group's value to the CETAF network and beyond. Evaluation will focus on both deliverables and impact, with the following indicators used to guide annual reflection and planning:

5.1. Delivery of Planned Outputs

- Completion of planned activities per theme (e.g. online sessions, briefs, roundtables), as defined above;
- Timely publication of working documents such as SOPs, position papers, or protocols;
- Maintenance of an updated annual calendar and shared resource repository.

5.2. Community Engagement and Participation

- Number of attendees per event (with special attention to institutional diversity and role representation);
- Conduct an annual online survey of the CETAF community to identify emerging topics and priority themes members wish to see featured in the year ahead;
- Participant feedback gathered via short post-event surveys, including:
 - Satisfaction scores (e.g. usefulness, clarity, relevance).
 - Open-ended feedback on improvement and priorities.
 - Voting or ranking of future topics of interest.

5.3. Adoption and Uptake of Group Outputs

- Citable use of protocols, SOPs, or terminology in external projects, publications, or grant proposals;
- References to group outputs in CETAF-wide or partner initiatives (e.g. DiSSCo, TETTRIs, GBIF, EU biodiversity policy reports);
- Uptake of proposed frameworks by other CETAF working groups or national monitoring programmes.

5.4. Collaboration and Cross-Group Integration

- Number of joint sessions or initiatives with other CETAF working groups;
- Invitations for SciReG representatives to contribute to policy-facing or cross-sector discussions.

5.5. Adaptive Planning and Transparency

- Annual self-assessment report shared with the CETAF network, summarising:
 - Completed activities and deliverables.
 - Key outcomes and insights.
 - Community feedback trends and planned adaptations for the coming year.

6. Timeline and Lifetime

The Scientific Research Group (SciReG) is envisioned as an **ongoing, long-term initiative** designed to evolve with the needs of the CETAF community and the rapidly changing landscape of biodiversity research. The ongoing timeline supports sustained collaboration, while also allowing the group to remain responsive to scientific developments, and community interests.

6.1. Rolling Calendar of Activities

A rolling calendar of activities will be developed and maintained by the organising committee. This calendar will include:

- Quarterly organising committee meetings to coordinate activities, review progress, and adapt plans.
- Thematic sessions scheduled across the year, as below.

6.2. Integration with CETAF General Assemblies

In addition to regular sessions, the group will contribute annually to the CETAF General Assembly with:

- A roundtable or discussion session focused on a topical issue.
- Presentation of key deliverables or working documents.





7. Roles and Responsibilities

This structure is designed to foster active, community-driven participation while maintaining clear accountability for key functions.

7.1. Co-Chairs

Eva van der Veer (Naturalis; Leiden) and Emily Hartop (NTNU; Trondheim) will serve as co-chairs, providing strategic leadership, setting meeting agendas, and ensuring alignment with CETAF's broader goals. They will act as primary points of contact for the group and coordinate collaborations with other CETAF working groups and the Secretariat.

7.2. Organising Committee

David Ott (LIB; Leibniz): chair of the Monitoring working group, will focus on interface topics with monitoring. Martin Kapun (NMW; Wien): Will focus on interface topics with integrative taxonomy. Tony Robillard (MNHN; Paris): Will focus on interface topics with integrative taxonomy. The organising committee will be composed of active members from participating institutions. Their responsibilities include:

- Planning and scheduling lectures and online sessions.
- Coordinating communication and dissemination of outputs (e.g., opinion pieces, community spotlight papers, and working documents).
- Collecting and analysing participant feedback to guide future activities.
- Facilitating connections with other CETAF working groups and external stakeholders, including funders and monitoring initiatives.
- Overseeing the development and maintenance of shared resources such as repositories or toolkits.

7.3. Volunteer Task Leads and Community Participation

Specific tasks, such as organising thematic sessions, leading working paper development, or managing community engagement, will be assigned to volunteer task leads from within the group, ensuring distributed responsibility and expertise-driven progress.

8. Governance and Decision-Making Structure

8.1. Consensus-Based Decision Making

Decisions within the working group will primarily be made by the organising committee through a consensus-based approach, encouraging open discussion and agreement among members. This collaborative method ensures that all voices are heard and considered, fostering community ownership of actions and outcomes.



8.2. Conflict Resolution

In cases of disagreement or conflict, the co-chairs will mediate discussions to seek mutually acceptable solutions, ensuring the group maintains a constructive and inclusive atmosphere.

8.3. Future Voting Mechanisms

Should the group expand significantly, or if consensus cannot be reached on key issues, a formal voting system may be introduced to facilitate timely and transparent decision-making.

9. Communication and Collaboration Tools: List platforms and tools for meetings, document sharing, and coordination.

To ensure efficient coordination and collaboration, the working group will utilise a combination of digital platforms:

9.1. Virtual Meetings

Regular online meetings (shown in blue in annual timeline above) for co-chairs, the organising committee, and the research group (open to all) will be held via platforms such as Zoom or Microsoft Teams, enabling inclusive participation across CETAF members.

9.2. Document Sharing and Collaboration

Cloud-based services will be used to store, share, and collaboratively edit working documents, SOPs, and deliverables.

9.3. Communication Channels

A dedicated mailing list for everyone wishing to receive SciReG Group updates will facilitate ongoing discussions, quick updates, and community engagement.

9.4. Publication and Outreach

Outputs, featured papers, and updates will be shared through CETAF newsletters and social media channels like LinkedIn to engage the broader community.

9.5. Collaboration with the CETAF Secretariat

A close collaboration with the CETAF Secretariat, particularly the communication team, will be essential to ensure strategic alignment, boost dissemination, and facilitate timely exchange of information for key outputs—such as best-practice briefs or thematic reports—that may warrant broader dissemination through CETAF’s communication channels and external outreach.



10. Stakeholder Engagement (Internal & External)

10.1. Collaboration with other CETAF working groups

SciReG will actively collaborate with other CETAF working groups through combined sessions, joint lectures, and coordinated activities focused on overlapping topics to maximise synergy and avoid duplication of effort.

10.2. CETAF Community

We will leverage existing mailing lists - including those from the previous iteration of this group - to reconnect with past members and inform the broader CETAF community about the group's revival and ongoing initiatives. Regular online meetings will be held using digital platforms to facilitate inclusive participation across institutions and geographic regions.

10.3. External Partners

Additionally, we aim to engage external partners such as natural science collections, monitoring programmes, and relevant research networks to ensure our work aligns with broader biodiversity science and monitoring efforts.

11. Resource Planning – Human, Technical, Financial

11.1. In-kind contributions

The working group will primarily rely on in-kind contributions, with members dedicating time and expertise to advance activities such as developing SOPs, organising events, and producing outputs.

11.2. Coordination with CETAF Secretariat for Resource Planning

SciReG's coordination with the secretariat will enable efficient resource planning beyond members' in-kind contributions. In particular, it can help coordinate CETAF's participation in large-scale initiatives and community-driven projects (e.g. EU Framework Programmes), ensuring SciReG's outputs and activities align with and strengthen broader institutional and European research efforts.

11.3. External Funding

As the group expands, opportunities for external funding to support dedicated staff time, travel, or outreach activities will be explored.

