Natural Science Collections Facility

SOUTH AFRICA

Annual Report to the

Department of Science, Technology & Innovation

1 April 2025 to 31 March 2026

science, technology & innovation

Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

SANBI
Biodiversity for Life
South African National Biodiversity Institute

Contents

1. Rationale and Scope

- Research collections are essential for all countries with scientific enterprises, and they should be considered as large scale, global research infrastructure. South Africa has an estimated 20 million objects or specimens representing over 100,000 different species in natural science collections.

- Natural science collections and the data associated with these are a crucial resource for a wide range of society both nationally and globally, including researchers, environmental assessment consultants, land use managers and planners, farmers, bio prospectors, students, learners and decision-makers.

- South Africa's natural science collections are managed in a highly fragmented and largely isolated environment and there is no common strategy or approach to research which means that their full potential as a national research infrastructure is not being realised. In addition, the specimen data are largely inaccessible, which causes delays in decision-making or poor decision-making relating to sustainable development and sustainable harvesting of natural resources, both of which have considerable economic impacts. Inaccessible data also limits their use in large scale, multi- and trans-disciplinary studies.

- The NSCF aims to address this situation, which will have positive impacts on research in numerous fields, on the economy through providing critical information for agriculture, fisheries, pest control, alien invasive management, natural products, and on society which benefits from biodiversity in virtually all aspects of life.

- The NSCF is a distributed network of institutions that hold natural science collections, with a Central Co-ordinating Hub hosted at SANBI in Pretoria. There are currently 18 institutions participating in the NSCF, including three national and five provincial museums, one municipal museum, four science councils, four universities and one citizen science organisation. SANBI is responsible for the overall implementation of the project plan and management of the budget allocation for the NSCF from the DSTI. The individual institutions continue to be supported by their existing structures, and continue to report to these but will collaborate to meet the objectives of the NSCF, and will receive support in order to enable this.

Expected deliverables, outputs, outcomes and impacts

Deliverables specified in the Agreement between the Department of Science, Technology & Innovation and SANBI for the NSCF from 2024/25 to 2028/29.

Deliverables	Outputs	Outcomes	Impact
Publication of methods and approaches used in 2023 collections assessment	Papers published in peer reviewed journal	Sharing of knowledge and tools developed by NSCF internationally	Recognition of NSCF and South Africa for innovation in collection assessment
Three to six orphan and at risk collections transferred to secure environments according to the NSCF guidelines	Well managed, secured and accessible collections of biological specimens; secured for long term use.	Increased research and education outputs in a range of fields, by national and international scientists currently and into the future.	Increased knowledge of South Africa's past and present biodiversity for the benefit of all of society, including future generations; International recognition for SA collections
Online tracking tool for status of collection management and curation - ongoing updates by collection institutions according to progress on meeting standards set in NSCF Manual	Information available for collection management and curation activities and targets in annual and three-year plans of institutions and individual workplans. NSCF Hub staff able to identify problem areas for interventions (training, investment or other forms of support).	Efficient allocation of resources to address priorities. Increased accountability.	
Virtual museum includes type specimen images (>3000 specimens); herbarium specimen images (>1.5 million); specimen data sets (15 collections); and archival documents (1000) for plant, animal, fungi and fossil groups	Integrated and openly accessible images of specimens and digitised archival documents used by researchers, postgraduate students, undergraduates and learners nationally and globally.	Increased research and education outputs in a range of fields. Reduced impact of use on specimens and documents which results in longer term preservation.	

Review of status of collection data sets (extent, quality and completeness; extent of publication on GBIF) **Tracking tool for status of specimen data**: extent of digitization, verification, upgrading and publication on GBIF	Information available for data management and digitisation activities and targets in annual, three-year and individual workplans. Informed decisions for NSCF plans.	Increase in extent and quality of data available for research and decision-making. More efficient use of resources by institutions and NSCF to address priorities.	Improved quality of biodiversity assessments and decision-making to mitigate development impact on biodiversity; sustainable development. Increased knowledge generation in a wide range of fields including biodiversity conservation, climate change and mitigation; and improved conservation assessments
Expansion of collection data sets: data for a minimum of 300 000 specimens captured **Publication of at least 15 new collection data sets on GBIF**	Specimen data accessible globally for research, decision-making.	Increased use of collection data for research and decision-making.	
At least 3 Communities of Practice established for collection management and curation; data management, with regular sessions focused on specific topics identified in the collections assessment **Attendance by staff at a minimum of 6 courses in collection management / curation and data management** **Participation in a minimum of 6 international conferences and workshops** on natural science collections and data **Three NSCF Forums** to bring all collection staff together to share knowledge and experience	Collection based staff, including interns and postgraduate students upskilled. NSCF network strengthened.	Upskilled and qualified collections-based staff; greater effectiveness and efficiency in curation and management of collections. Sustainable network developed with increased collaboration and sharing of knowledge and resources.	Improved capability of institutions. Secured collections used globally by scientists to address critical issues related to biodiversity.

Organisational development and transformation sessions run with a minimum of 6 institutions; and with the NSCF Hub team	Institutional plans for collection management and curation, data management and research. Improved team coherence and effectiveness within institutions and the NSCF Hub.	Improved standard of collection management and curation; data management. Improved efficiency and productivity; use of scarce resources.	Collection management and curation, data management, research improved in institutions in both short and long-term
Emerging leaders development: at least 6 sessions run	At least 30 young staff working in collections as researchers, curators or technicians developed to play leadership role.	Improved succession in institutions. Improved productivity of staff in institutions. Youth empowerment.	
Report and publication on the impact of collection-related research and data in terms of the value chain	At least 1 paper published. Identification of mechanisms to improve knowledge and data flows.	Improved understanding of the value of collections and associated data. Increased accessibility of knowledge and data from collection-based research.	Improved evidence-based conservation and sustainable use of biodiversity
NSCF website provides materials promoting the value of natural science collections	Video showing collections, iconic specimens. Downloadable showcase documents explaining value of natural science collections.	Improved public understanding of biodiversity, its importance for human well-being and for national and cultural identity.	Biodiversity and collections viewed as national assets and treasures of value for science and decision-making; social cohesion; increased interest in life sciences by learners

2. Aim and objectives

The overall aim of the NSCF is to enable sustainable, enriched life on Earth by working as a dynamic network that values the African context, **to promote, upgrade and make accessible natural science collections and data for research and services.**

In order to realise this aim, the NSCF has the following overall goals:

NSCF goals, progress and future plans

1. Estimated 18-20 million **preserved plant, animal, fungi and fossil specimens** collected over the last 200 years, **well curated, and accessible either virtually or physically to the global research community for research** in biological, environmental and palaeosciences, for contributing to documenting past and present biodiversity, understanding global change impacts on species and biological communities, and possible mitigation and adaptation mechanisms.

2024/25 – 2028/29

- The methodology and approach for the collection assessment are novel and could be used internationally by other research collections or network initiatives (there is currently no standard system for assessing management and curation status). This will be published in appropriate international journal/s.
- The assessments have revealed some collections that remain at significant risk of deterioration and loss. There are a number of factors that are responsible for this situation and in some cases the collections or at least the most significant specimens should be moved to more secure institutions. This will require negotiation and support for packing and moving the collections and their accessioning at the receiving institution. Guidelines for decision-making for moving orphaned collections are required, including resourcing of recipient institutions and legal considerations.
- Support will be provided to institutions for addressing gaps in documentation (policies, procedures, workflows and standards) and for some of the curation processes. This support will be in the form of a number of Communities of Practice, co-ordinated and facilitated by the NSCF Hub together with staff from partner institutions.
- Interventions in the form of guidance and support for aligning plans with the gaps identified are planned, with the assistance of organisational development and transformation facilitators.

2. The data from the specimens (what it is, where it was collected, when it was collected as a basic minimum) assembled into **databases that are openly accessible in an integrated way for researchers, practitioners involved in monitoring and assessing the status of biodiversity (eg. threatened species assessments, alien invasive species risk assessments, environmental impact assessments for various forms of land use change and development), and decision-makers involved in authorisations for land use change (eg. mining, agriculture), development, and harvesting quotas (eg. medicinal plants, fish).** The data are currently incomplete (only an estimated 50% of specimens have label data captured in databases), with a large number of specimens for which data have not been captured (estimated 6 million, mostly insects) and gaps in the data for which there are digital records.

2024/25-2028/29

- We have realised that the process of transcribing/ digitising specimen data using an NSCF appointed team of data technicians was inefficient in relation to the extent of the work and the salary costs. Over the next year the **use of automated technologies and machine learning will be investigated** in collaboration with international teams and if feasible, implemented to increase specimen data sets over the subsequent five years.

- A **detailed analysis of the status of existing specimen data sets, the publication of these and use of published data** will be carried out to inform data mobilisation and publishing activities, as well as the development of a progress tracking tool.
- More **targeted and strategic data mobilisation and publishing activities** will be carried out depending on user needs (e.g. species threat assessments and data for the Department of Fisheries, Forestry and Environment's screening tool, projects on food and medicinal plants).

3. **Establishment of a Virtual Museum that provides online access to images of specimens from the collections of all participating institutions, specimen data sets and archival documents** such as field notes of historic collectors. Researchers, postgraduate students, EIA practitioners, threatened species and alien invasive species assessors, conservation authorities, and learners will be able to access the Virtual Museum for a range of projects.

2024/25 – 2028/29:

- The Living Atlas software which is open source will be used to set up the platform.
- Specimen data sets, specimen images and digitised documents will be uploaded and made accessible on an ongoing basis.
- Herbarium specimen imaging will continue and completion of all of the medium sized and smaller herbaria is expected by the end of 2026.
- SANBI is working with a conveyor belt system for imaging of the two largest herbaria (National and Compton Herbaria) and they are also expected to complete the work by the end of 2026. This system will then be moved to herbaria in other African countries.
- All newly collected specimens will be imaged on a regular or ongoing basis depending on the availability of equipment.
- Imaging of Karoo fossil and vertebrate (mammal, bird, reptile, amphibian and fish) type specimens will continue and it is expected that this will be completed by the end of 2026.
- Technologies for mass digitisation of millions of insect specimens need to be explored and potentially implemented from 2026/27.
- Digitisation of historical accession registers / catalogue books, field notes and research notes related to collections will continue and priority documents will be completed by the end of 2028.

4. Research outputs and translational research: understanding the use, impact and value of natural science collections

2024/25 – 2028/29

- Over the next three years we intend **investigating how the taxonomic outputs are used by other researchers and for informing policy and decision-making and how knowledge flows along the value chain**. This is essential to promote an understanding of the value of the collections as well as for addressing any breaks or blockages in the chain. Partnerships with institutions or units that have experience in bibliometrics and scientometric analyses will be necessary for this research. We will also analyse the use of collection data sets for South African biodiversity accessed on GBIF.
- The report and publications from the analyses will include **recommendations for increasing access, uptake and use of publications and data for enhancing impacts and benefits to society** and these will be implemented in from 2027.
- The NSCF Hub will continue to co-ordinate **the use and outputs from the collections and data** and will need to develop mechanisms to track use of the Virtual Museum resources.
- **Data and specimen identification services will be provided to requesters** on an ongoing basis. This includes provision of data for conservation and threat assessments for species, for the DFFE Screening Tool for land use decision-making, and for environmental impact assessments. Identification of biological material is carried out for a wide range of clients. These services are generally demand driven rather than being initiated by the collections community.

5. Outreach and communicating the value of natural science collections

The natural science collections are generally inaccessible to the general public, and few people, including decision-makers are aware of their existence or extent or value. The collections are often perceived as colonial relicts or as curiosities rather than as critical research infrastructure and a tangible, irreplaceable reference for the country's biodiversity.

2024/25-2028/29

- Over the next six years communication and outreach activities will be more targeted and strategic to **promote understanding of the value of collections to society**. The information presented will be audience specific, relevant to the African context, promote indigenous knowledge systems and contribute to public understanding of science and social cohesion. The outcome of this goal will have relevance beyond South Africa because many countries face similar challenges related to the lack of awareness of the value of the collections posing a threat to the sustainability of natural science collections.

- Some of the specific activities and outputs include the development of videos of collections and specimens of scientific or cultural significance for distribution on the Virtual Museum and other appropriate platforms, compilation of recommendations for museum displays on the collections and biodiversity to increase relevance to the African context and increasing public engagement in this topic.

6. African and international engagement

The value of international engagement through attending and presenting at conferences and workshops and participation in international bodies has become evident over the last few years, even though this has been predominantly virtual / online. We will increase international engagement through participation in the Society for the Preservation of Natural History Collections, Taxonomic Data Working Group, and iDigBio conferences and workshops, participation in the Specify Consortium Board of Directors and scientific and technical advisory boards.

We have not previously engaged with natural science collection institutions in other African countries. This was largely because the focus over the last six years has been on establishing the NSCF structures and having tangible products and skills that can be shared and have a meaningful impact. Curation and research staff at natural science museums in other African countries will be contacted to consider opportunities for knowledge sharing and collaboration. The possibility of an online African natural science collections symposium, participation in various NSCF online activities such as the collection management and curation course, and the Communities of Practice will be explored.

In order to achieve these objectives the following enabling strategies will be critical:

Strategy 1. Staffing and capacity development

- The NSCF has run training in the use of Specify software for managing collections and data, and a higher level mentorship programme for staff. The NSCF sponsored 17 staff to attend a customised Data Management course presented by the University of Pretoria. Various other workshops related to data management and use have been run by the NSCF or participation in workshops organised elsewhere has been supported. This type of work will continue.
- The NSCF collection management and curation course material will be reviewed and refined and be available online for independent study. More focussed shorter courses will be offered or participation supported over the next six years.
- The Community of Practice approach will be used for increasing capacity for collection and data management and curation. The NSCF will facilitate the establishment of these sessions.

- Emerging leaders from the participating institutions have been identified and a range of activities will be run to support the development of this component of the collections community.
- The NSCF Hub team includes 17 staff, 16 of who are on short term contracts. Ensuring team cohesion, staff well being and ongoing development is critical for the successful implementation of the NSCF.

Strategy 2: Transformation and organisational strengthening to enable the long-term sustainability of the collections and associated research to benefit society

The initial aim of the transformation process was to build a sustainable and functional NSCF network, with full participation and collaboration across institutions, recognising the African and South African context.

We have run a facilitated transformation and organisational strengthening process over the last six years. There was considerable focus on institutional leadership and this has had mixed impacts which is not unexpected given the diversity of governance structures, cultures, size and staff complements. The challenges that need to be addressed are complex and so the transformation and organisational strengthening work will continue but with a more targeted approach.

The collections assessment that was carried out in 2023 was designed as a transformative change process that included strengthening the NSCF network, information sharing, capacity development through engagement with the content of the NSCF Collections Management & Curation Manual and organisational development. Through the assessment process, the reports and regional sense-making workshops, some of the underlying factors that contribute to institutional challenges or achievements have become evident.

- The focus of the transformation and organisational strengthening process for the next five years will be on supporting selected institutions with specific challenges that were identified during the collections assessment process, and supporting institutions with planning and implementation for collection management and curation.
- Communication across the institutions includes regular use of a WhatsApp group and a Facebook page, which will both continue.
- The NSCF Forum will be held every 18 months but this is likely to be a virtual event to reduce the costs.

Strategy 3: Contributing to the identification of strategies and models that will ensure financial sustainability of the natural science collections.

As allocations from government and higher education institutions continue to decline, pressure to increase efficiencies is increasing. There are limited opportunities for commercial activities associated with the collections, but sharing knowledge and resources across institutions, and potentially rationalising some collections will be continuously investigated over the next six years.

3. Progress: 1 April 2025 to 31 March 2026

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
1. Securing Collections	- Transfer of orphaned collections to secure institutions	Achieved- (Target exceeded) 1. University of Zululand Herbarium specimens relocated to Bews Herbarium, UKZN, and integration underway. 2. Malawi Fish Collection arrived at South African Institute for Aquatic Biodiversity, and integration has started. 3. McGregor Mollusc collection specimens relocated to KwaZulu-Natal Museum and integration started. 4. Integration of Harold Porter (GHPG) & Karoo Desert Herbaria into SANBI Compton Herbarium underway. 5. Incorporation of private African butterfly specimens into Lepidopterists' Society of Africa collection underway.
	- Communities of Practice (CoP) for sharing best practices in curation – 13 sessions	Achieved- (Target exceeded) 17 Communities of Practice (CoP) Sessions have been convened across a total of 4 established CoPs during the 2025/26 financial year: Invertebrate Imaging, Plant Identifications, Documentation Development and Data Management.
	- Tracking of progress in implementing best practices for collection management and curation	Achieved Implementation of collections management standards and practices within collections are progressing steadily. Since the launch of The NSCF Collection Status Tracking Tool in November 2024, the average implementation percentage across all partner collections has increased from 41% to 62%. A total number of 676 updates were made to standards and practices across partner collections from 1 April 2025 to 31 March 2026.

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
2. Upgrading and Expanding Databases	- 100,000 specimen records captured/upgraded	In progress Partner institutions reported a total of 57,241 new specimen records captured for the period. The Hub team is in the process of piloting an AI-assisted transcription process for capturing data from specimen labels, which will increase the rate of capture considerably.
	- Tracking tool developed for monitoring progress of data capture, upgrading and publishing	Achieved Tracking Tool Dashboard developed and finalised, with the launch scheduled during the upcoming quarter.
	- Publication of five collection data sets on GBIF	Achieved Partner institutions published 5 data sets to GBIF with assistance from the NSCF Hub where required: - Skukuza Biological Reference Collection Coleoptera dataset (SANParks). - Skukuza Biological Reference Collection Ornithology dataset (SANParks). - Skukuza Herbarium dataset (SANParks). - Kimberley South African National Parks Herbarium dataset (SANParks). - KwaZulu-Natal Museum Myriapoda Collection dataset.
	- Community of Practice for data management – regular sessions	Achieved First session on data management held in November 2024. Sessions were paused until the appointment of Specimen Database Coordinator, however NSCF community-led sessions resumed in 2025.
3. Virtual Museum	- Uploading of all new images and data and archival documents onto Virtual Museum	Delayed, in progress The Virtual Museum setup and launch has been delayed, due to challenges with the architecture hosting. Following engagement with SAIAB, these issues are largely resolved with revised timelines agreed upon. In parallel, significant backend work has been completed, including development of metadata standards, workflows, and data pipelines to support integration of

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
		digitised specimens. A phased approach is being worked through to allow early rollout of core components while the platform is finalised and digitisation work is scaled to support it. Virtual library created and ready for deployment as a parallel component within the Virtual Museum.
	- Monitoring use of the specimen images and digitized documents	Delayed, in progress To commence once architecture set up is complete. Platform architecture supports tracking of use. Metadata standards for images and documents developed.
	- Specimen imaging of 500 vertebrates, fossils, 160,000 plant specimens	Achieved- (Target exceeded) 264,896 plant specimens imaged, 919 vertebrate and fossil type specimens imaged, for integration into the Virtual Museum.
	-Digitisation of archival documents related to collections: 100 documents	Achieved- (Target exceeded) The archival document imaging team imaged 3,684 historical collections documents (field notes, accession registers and index cards) at the Agricultural Research Council – Plant Health and Protection, for integration into the Virtual Museum.
	-Investigating technology for mass digitisation of insect specimens	Achieved Investigation of appropriate mass insect specimen imaging system complete. Appropriate system identified, procurement in progress.
4. Research Outputs and Impact	- 100 publications produced by researchers using collections - 100 new species described from the collections - 200 scientists visiting the collections for research purposes - 50 loans of specimens sent out for research - 25 MSc, PhD and Postdocs using collections for their research - use of collections for identification of biological specimens	Achieved- (Target exceeded) - 166 papers published - 116 new species described - 755 national visitors - 181 international visitors - 10,879 specimens sent out on loan - 311 postgraduate students using the collections - 610,850 specimens identified
	- Assessment of use of research outputs from collections and impact on society	In progress Development of an NSCF dashboard that visualises key impact indicators derived from

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
		GBIF-published datasets from the NSCF network is complete and will be launched in the next reporting period. The dashboard will benchmark and support evidence-based reporting on societal and scientific impact of published collections data both for the NSCF as a whole and the individual institutions.
5. Outreach and Communication	- Development of video materials on collections and iconic specimens	In progress Pilot video produced, editing stage underway. A revised strategic direction has been proposed to build upon the outcomes of the pilot initiative. This direction is currently under consideration, with exploratory consultations and concept development in progress to ensure full alignment with institutional priorities, communication objectives, and the forthcoming phase of the NSCF.
	- Development of a framework for promoting public engagement and understanding of the value of natural science collections	In progress Progress toward the development of a framework for promoting public engagement remains on track. Throughout the reporting period, the NSCF has actively implemented the core principles of this framework through a series of strategic outreach events and online engagements. These initiatives—specifically curated for learners and the general public—serve as both a proof-of-concept and a foundation for the formal framework document, which is currently being finalized for internal review.
	- Promote NSCF at outreach events	Achieved Participated in the Ezamazwe IST Expo 2025, held on 16 April 2025 at Lenyenye Stadium in Tzaneen. The event targeted high school learners (Grades 9–12), undergraduate students, recent graduates, township SMMEs, young professionals, and unemployed youth, with an estimated attendance of 500 participants. The NSCF delegation of two representatives engaged attendees through exhibits and discussions highlighting the value of natural science

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
		collections for education, research, and career development. Exhibited at the annual Science Forum from 24 to 28 November 2025 at the CSIR International Convention Centre in Pretoria.
	- Maintenance and regular posts of news items on the NSCF website and Facebook page	Achieved Website and Facebook page maintained with current information and news items, weekly updates.
	- Monitoring and analysis of views and visitors to online platforms	Achieved Website views: 69, 307 Website visitors: 49,491 Facebook page followers: 1,036 Instagram followers: 319 Twitter (X) followers: 310 LinkedIn followers: 261 Facebook group members: 451
6. African and International Engagement	- Participation in international conferences, Specify Software Consortium	Achieved - Specify consortium country membership renewed and participated in committee meetings (Technical Advisory Committee and Board meetings). Data Quality Specialist attended Digital Imaging for Biodiversity Collections Course hosted by the iDigBio Digitisation Academy from 4 to 7 August 2025. Collection Management Coordinator attended the Society for the Preservation of Natural History Collections virtual conference from 27 to 31 May 2025. NSCF Science Communication Officer attended and participated in the *World Conference of Science Journalists* from 1 to 5 December 2025. The NSCF Lead participated as an invited speaker at the seminar *Collectomics: Ethical Mobilisation of Natural History Collections for Biodiversity Research* from 10 to 14 November 2025 at the University of Warsaw. A paper

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
		emanating from this seminar has been submitted for publication.
	- Invitations to African natural science collection institutions to participate in NSCF online activities / new collaborative activities	In progress List of possible contacts compiled. Initial engagements through G20 Research and Innovation Working Group, and CBD Sub-Regional Technical and Scientific Cooperation (TSC) Support Centre.
Governance & Networking	- Meetings of Advisory Committee (twice a year); Co-ordinating Committee (3 times a year)	Achieved Advisory Committee meeting held in June and November 2025, Coordinating Committee meetings held in July 2025, and March meeting held in April 2025.
	- Six monthly and final report to DSTI; quarterly report to SANBI EXCO / Board.	Achieved Six monthly reports submitted to DSTI, and quarterly reports submitted to SANBI (EXCO/Board).
	- Develop new Collaboration Agreements / addenda with partner institutions.	Achieved Collaboration agreements renewed with all 19 partner institutions.
Enabling Strategy: Capacity Development	- Training courses in data management and Virtual Museum tools	In progress Will commence once the Virtual Museum is launched and the Specimen Database Coordinator post is filled. The community-led Data Management CoP has taken up some of this work.
	- Review and revision of materials for NSCF Collections Management & Curation Course	Achieved The review of the CMC Course was completed in March 2026 and a subsequent report was produced, comprehensively assessing the current design, content and delivery of the course. The report findings and subsequent recommendations on the way forward is currently being finalized for internal review.

Strategic Objective	2025/26 Deliverables	Progress 1 April 2025 to 31 March 2026
	- Emerging leaders development (32 staff from participating institutions and the NSCF Hub).	Achieved Emerging Leaders Programme continued with Organisational Development Facilitators as a strategic transformation and capacity development platform, with consistent participation of ~30 staff from partner institutions attending the sessions (sessions were held in May 2025, November 2025 and March 2026)
Enabling Strategy: Staffing	- Team and individual development of the NSCF Hub and institution-based staff	Achieved Two Hub staff members attained Master's degrees (2 x MSc) and one staff member completed her MPhil research, during this reporting period. NSCF Hub staff conducted training in specimen imaging and image management at several partner institutions during 2025.
Enabling Strategy: Transformation and Organisational Development	- Interventions at selected institutions to support organisational strengthening	Achieved Workshops at 9 partner institutions led by Organisational Development Facilitators were held during this financial year.
	- Communication platforms for the NSCF network – website, Facebook page, WhatsApp group.	Achieved Website, WhatsApp group, Facebook page and group, Instagram and Twitter accounts operational, news circulated via mailing list regularly, on an ad hoc basis.

4. Financial analysis

A detailed financial report for the project (provided by SANBI's Finance Division and approved by the Chief Financial Officer), is provided below and attached to this report. This report forms the basis of the financial information presented below on income, expenditure and commitments.

Income:

The grant for the 2025/26 financial year was transferred to SANBI's bank account in September 2025. The **total project income to date is R162,338,065.**

Expenditure to date is R154,186,063

We have accrued R8,592,205 in interest to date.

Description	Budget Allocation						Actual				
	2021/22	2022/2023	2023/2024	2024/2025	2025/2026	TOTAL	2021/22	2022/2023	2023/2024	2024/2025	2025/2026
Opening Balance						-	**10 442 626**	**13 624 648**	**6 574 310**	**9 511 310**	**13 750 608**
Opening Balance							10 954 433	13 611 316	6 619 185	9 511 310	13 750 608
Prior period adjusted							-511 807	13 332	-44 875	-	-
Income	**18 971 020**	**19 065 285**	**18 215 100**	**19 082 102**	**19 051 674**	**94 385 181**	**19 461 402**	**10 597 974**	**19 371 919**	**19 961 834**	**20 209 992**
Grant	18 971 020	19 065 285	18 215 100	19 082 102	19 051 674	**94 385 181**	18 971 020	10 000 000	18 215 100	19 082 102	19 051 674
Interest earned							490 382	597 974	1 156 819	879 732	1 158 318
Expenditure	**18 971 020**	**19 065 285**	**18 215 100**	**19 082 102**	**19 051 674**	**94 385 181**	**16 292 712**	**17 603 438**	**16 434 919**	**15 722 537**	**17 216 391**
Human Resources and Support Services	**10 177 850**	**11 834 252**	**12 473 363**	**6 208 111**	**6 611 638**	**47 305 214**	**9 721 849**	**9 979 051**	**8 674 183**	**10 332 047**	**9 298 850**
Operational Expenditure	**5 171 789**	**5 331 033**	**5 041 737**	**9 051 787**	**8 973 933**	**33 570 279**	**3 297 371**	**5 105 937**	**5 951 283**	**5 235 790**	**7 371 670**
Training & research support (including workshops)	1 348 320	1 400 000	1 326 610	2 700 000	2 700 000	**9 474 930**	34 456	79 810	93 348	256 775	604 083
Fixed annual operational cost	50 000	690 000	1 037 140	3 258 233	3 308 766	**8 344 139**	702 160	1 477 577	1 322 552	830 152	1 649 086
Travel & accomodation	760 000	471 769	590 000	985 344	880 000	**3 687 113**	208 238	1 108 689	1 672 725	1 363 420	2 108 883
Consumables for office, collections upgrades	1 116 449	862 736	266 477	200 000	180 000	**2 625 662**	455 416	1 439 861	1 041 148	877 231	1 104 452
SANBI overheads charge (10%)	1 897 020	1 906 528	1 821 510	1 908 210	1 905 167	**9 438 435**	1 897 102	1 000 000	1 821 510	1 908 210	1 905 167
Capital Investments	**3 621 381**	**1 900 000**	**700 000**	**3 822 204**	**3 466 103**	**13 509 688**	**3 273 492**	**2 518 449**	**1 809 453**	**154 700**	**545 871**
Webservers & networking	3 470 070	1 300 000	500 000	3 181 204	2 518 852	**10 970 126**	3 273 492	2 518 449	1 809 453	154 700	545 871
Equipment				80 000	947 251	**1 027 251**					
Workstations	151 311	600 000	200 000	561 000		**1 512 311**					
Closing balance							**13 611 316**	**6 619 185**	**9 511 310**	**13 750 608**	**16 744 208**
Less total interest accumulated to dated											**-8 592 206**
Total balance as at 31.03.2025											**8 152 003**

5. Financial information

Financial summary:

Total Project Income	**R162,338,065**
Total Project Expenditure	**-R154,186,063**
Balance	**R8,152,002**

*R8,592,205 interest earned not included in the table above

Expenditure projections indicate that the project will be 90% spent of 2025/26 income received by June/July 2026. The 2025/26 grant was received in September 2025.

Details of financial commitments:

There are several commitments at various stages of finalisation, and with various actions that are required before payments can be transferred from SANBI's accounts. These are commitments against signed staff contracts, and service provider contracts for which the project is obliged by SANBI to keep the committed funds in the project cost centre. Commitments against actual signed contracts are detailed in the table below.

Salary costs, contracts and agreements (committed through contracts, and required to be retained in cost centre by SANBI)

Item	Expected date of finalisation	Amount
Service provider for website maintenance and technical support	May 2026	R25,426
Service provider for organisational transformation and development process	March 2027	R1,615,918
Collaboration agreements with partner institutions	February 2026	R1,109,441
TOTAL		**R2,750,785**

Staff contracts for 17 NSCF Hub staff appointed at SANBI and at institutions (dependent on funding)

Item	Expected date of finalisation	Amount
Staff contracts	1 x staff January 2027 2 x staff February 2027 12 x staff March 2027 1 x staff June 2027 1 x staff January 2028	R9,341,629
TOTAL		**R9,341,629**

6. Summary and assessment

Achievements:

1. Integrated Monitoring

Integrated monitoring of outputs from the use of the collections has been carried out, and illustrates the value of the collections as research infrastructure: 202 requests for data serviced, with 78,303 specimen records provided; 755 national visitors and 181 international visitors using the collections; 54 new species described using the collections; 166 peer-reviewed papers where the collections were used published; the number of postgraduate students who used the collections was 311 (note that the same student may be counted more than once if they used more than one institution's collections). Nineteen institutions submitted reports through the online monitoring system. Institutions reported the following outputs from April 2025 to March 2026:

Indicator	Q1	Q2	Q3	Q4	Year Total
Orphan collections: no. of specimens incorporated	0	498	646	5797	**6941**
New specimens accessioned	13167	354436	16440	1526354	**1910397**
Number of DNA samples added	0	55	447	222	**724**
Number of tissue samples added	75	539	87	2384	**3085**
Number of DNA samples supplied for research purposes	266	250	98	380	**994**
Data provided to external users: no. of requests	63	72	20	47	**202**
Data provided to external users: no. of records	12131	16136	3998	46038	**78303**
Number of new specimen records added to Brahms/Specify	24003	11937	10881	10420	**57241**
Number of specimens imaged	17211	19544	2586	28276	**67617**
Number of specimens sent out on loan for research	1893	1061	6195	1730	**10879**
Number of visitors using collection (national)	221	192	97	245	**755**
Number of visitors using collection (international)	68	44	35	34	**181**
Number of new species described	23	31	21	41	**116**
Number of papers published based on collection	48	36	36	46	**166**
Number of papers open access	28	26	19	31	**104**
Number of specimens identified: external stakeholders	15460	237930	250880	106580	**610850**
Number of outreach activities held	65	58	30	41	**194**
Number of learners/attendees exposed to the activity	10968	3531	823	6347	**21669**
Number of postgrad students using the collection	83	71	72	85	**311**
Number of students trained in the collections	23	14	23	37	**97**
Number of students graduated from using the collections	1	1	10	6	**18**
Number of Biodiversity Management and Policy Input Activities	2	2	0	3	**7**

These figures illustrate the extensive use of the collections and associated services, and the high number of outputs.

2. Strategic Research Highlights and Translational Outputs:

NSCF collections, in the 2025/26 cycle, were used to generate 166 reported publications and the discovery and description of 116 species new to science. These outputs demonstrate the ongoing contribution of collections as research infrastructure supporting biodiversity research and associated applied fields. In addition, 69% of publications were made openly accessible, supporting broader dissemination and use of the resulting knowledge.

A selection of publications is provided below to illustrate the diversity of outputs and their areas of application.

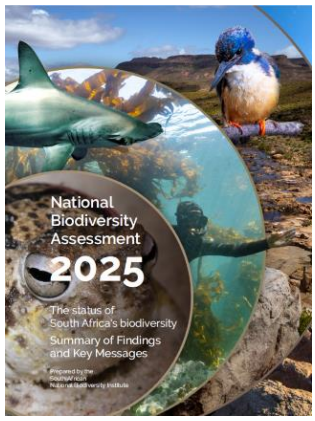
- **New Weevil Discoveries:** Providing crucial taxonomic data for agricultural biosecurity and the monitoring of potential crop pests.
    - *Borovec, R. & Meregalli, M. (2025). The genera Cervellaea and Namaquania, with description of eight new species (Coleoptera: Curculionidae: Entiminae: Namaini). Taxonomy 5(1), 14: 1–30.* https://doi.org/10.3390/taxonomy5010014
- **Livestock Safety:** Improving our understanding of disease vectors by describing and mapping the distribution of two new biting midge species in southern Africa.
    - *Labuschagne, K., van Schalkwyk, A., & Scholtz, C. (2025). Afrotropical Culicoides (Diptera: Ceratopogonidae): description of Culicoides baltusi sp. n. and Culicoides theileri sp. n. African Entomology 33(1): 1-13.* https://doi.org/10.17159/2254-8854/2025/a16023
- **Climate Secrets:** Utilizing machine learning to reconstruct 3.5 million years of climate history, revealing how South African ecosystems respond to long-term environmental shifts.
    - *Linchamps, P., Hanon, R., Steininger, C., et al. (2025). Reconstructing the palaeoclimate of the Cradle of Humankind in South Africa over the last 3.5 million years using machine learning and mammalian fossil assemblages. Quaternary Science Reviews, 370: 109655.* https://doi.org/10.1016/j.quascirev.2024.109655
- **Freshwater Conservation:** Uncovering hidden diversity within the Zambezi grunter revealed to be nine distinct species, a discovery vital for localised water policy and conservation management.
    - *Sithole, Y. & Chakona, A. (2025). Nine in one: integrative taxonomic evidence of hidden species diversity in the widespread Zambezi grunter. Zoological Journal of the Linnean Society, 202(3).* https://doi.org/10.1093/zoolinnean/zlae121
- **Biodiversity Baseline Data:** Strengthening the taxonomic foundation for the rare Afrotropical spider fly, clarifying its unique ecological role and providing new identification tools for this poorly studied group.
    - *Midgley, J.M. & Theron, G.L. (2025). Revision of the Afrotropical spider fly genus Africaterphis Schlinger, 1968. African Invertebrates 66(1): 193–206.* https://doi.org/10.3897/afrinvertebr.66.138761
- **Arid Biome Biodiversity:** Highlighting undocumented endemism through the description of new pygmy geckos and lizards, ensuring these sensitive landscapes are prioritized in national conservation planning.
    - *Conradie, W., Hundermark, C., Kemp, L., & Keates, C. (2025). New Pygmy Gecko (Goggia: Gekkonidae) from the arid Northern Cape Province. Zootaxa, 5618 (4): 552–570.* https://doi.org/10.11646/zootaxa.5618.4.6
- **The "Big Bee" Guide:** An essential guide for protecting the pollinators that underpin South Africa's food security and agricultural resilience.
    - *Eardley, C.D. (2025). Big bees of South Africa: A photographic identification guide to species. Suricata 11: vi + 1–156.* https://doi.org/10.38191/suricata.11.2025
- **Threatened Plant Discovery:** Identifying species new to science and already recommended for "Critically Endangered" status, providing immediate evidence for provincial and national protection lists.
    - *Balkwill, K. (2025). Dyschoriste Nees (Acanthaceae: Ruellieae)... and two threatened new species from South Africa. South African Journal of Botany, 187: 289–305.* https://doi.org/10.1016/j.sajb.2024.12.012

The collections continue to serve as a national **reference for the identification of materials** across multiple sectors. In **agriculture**, they underpin the accurate identification of crop pests, livestock disease vectors and parasites, weed biocontrol agents, and phytosanitary diagnostics that enable the safe import and export of produce. In **health**, they support diagnostic work such as investigating outbreaks (for example, head lice in schools), while in **environmental**

planning and management they provide the basis for environmental impact assessments in development applications. The collections were also used extensively in postgraduate research and by researchers in a number of different disciplines, and for the general public. Between April 2025 and March 2026, **610,850 specimens have been identified** using the collections. Without accurate identifications, the consequences can include crop and livestock losses, international trade restrictions, or the loss of biodiversity through poorly informed development.

3. Input into Biodiversity Management/Policy Activities

Staff from partner institutions provided input into a range of biodiversity management and policy initiatives such as providing, assessing and reviewing biodiversity data for the Mammal Red List Assessment, eThekwini Draft Biodiversity Protection By-Law, the Eastern Cape State of the Environment Report and rabies response plans.



Various partner institutions also contributed to the National Biodiversity Assessment (NBA) 2025, with noteworthy contributions from the **South African Institute for Aquatic Biodiversity (SAIAB)** and the **Agricultural Research Council (ARC)**. SAIAB's technical expertise was instrumental in the aquatic realm, where data from the National Fish Collection facilitated critical extinction risk reassessments for freshwater fishes and the development of marine ecosystem indicators. Simultaneously, the ARC, through the **National Collection of Arachnida (NCA)**, provided the essential occurrence data and taxonomic expertise required to include spiders in the NBA. By digitising historical records from the South African National Survey of Arachnida (SANSA) and conducting regional Red List evaluations, the ARC significantly expanded the assessment's coverage of invertebrate groups.

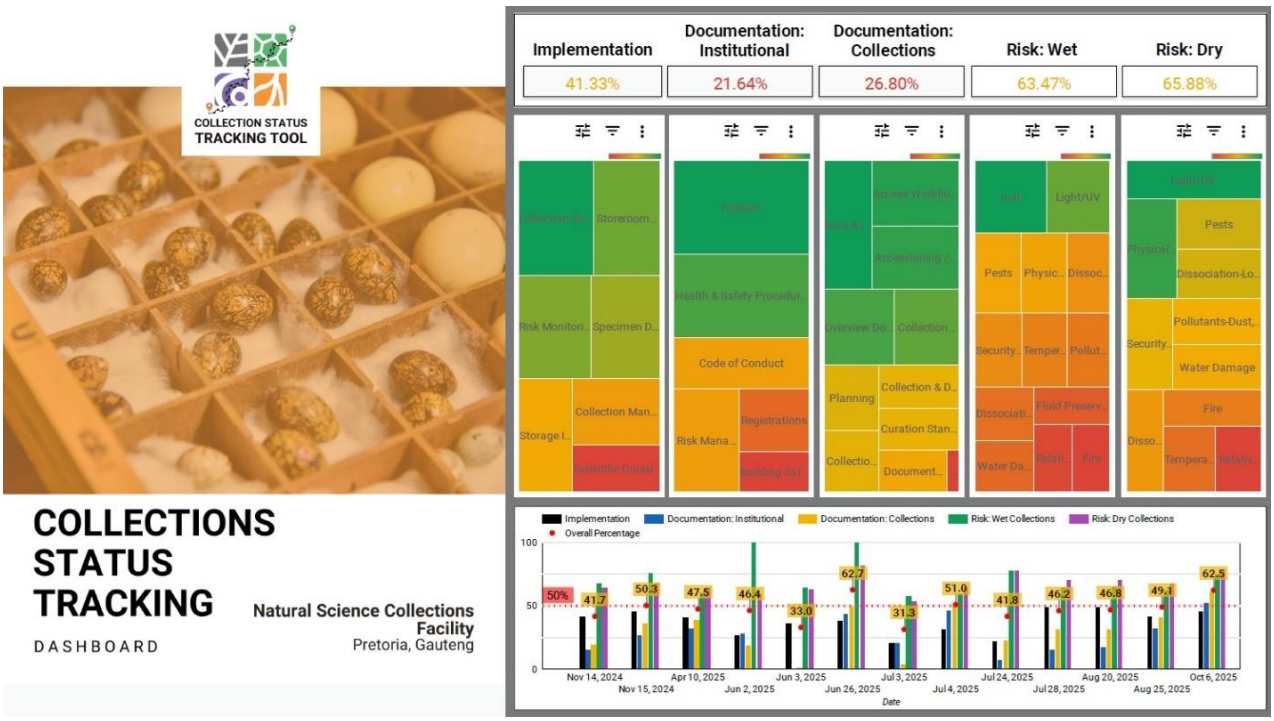
4. Contribution to the Mpumalanga Roadmap under South Africa's G20 Presidency

The NSCF played a prominent role in supporting South Africa's hosting of the 2025 G20 Research and Innovation Working Group (RIWG) process, particularly the Seminar and Workshop on *Developing Global Collaborations to Support Museums and Natural History Collections*, held at the University of Mpumalanga. The NSCF Lead delivered a keynote presentation titled *"Unlocking Value Through Collaboration: Lessons from South Africa's Natural Science Collections Facility"*, showcasing the country's distributed network model and its contribution to collective and inclusive data mobilisation. Representing the Agricultural Research Council (ARC), Adriaana Jacobs-Venter highlighted the efforts of the South African National Collection of Fungi (SANCF) and the emerging African Microbial Culture Collections Consortium in leading pan-African fungal data mobilisation. Roger Bills from the South African Institute for Aquatic Biodiversity (SAIAB) discussed addressing the taxonomic impediment through international collaborations and mentorship-based training workshops for young scientists in the region. Together with representatives from NSCF partner institutions, the Facility contributed to the development of the *Mpumalanga Roadmap for Advancing Global Collaboration in Natural History Collections*, which sets out priorities for international coordination, digitisation, capacity development, and equitable benefit-sharing. The seminar and workshop were attended by national and international representatives of governments, research infrastructures, museums, and funding agencies. The NSCF's organisational development consultants designed and facilitated the participatory process that harnessed collective knowledge to inform the roadmap, ensuring a coherent and inclusive outcome. Several transferable NSCF tools and models were

recognised that could be applied in other national and regional contexts, these include its facilitation-based governance framework for distributed research infrastructures, the co-developed national standard for collection management (NSCF Manual), the action learning collections management curriculum, the guided self-assessment and tracking system for collection status and prioritisation, standardised imaging and digitisation protocols, and its people-centred organisational development approach. Several synergies were also identified between the NSCF's work and that of other international natural science infrastructure initiatives.

5. Improvements in Collections Management and Curation

A **Collections Status Tracking** Tool was developed by the hub team to assist institutions in tracking progress with implementation of collections and data management practices and standards from a baseline situation based on the result from the collections assessments. The roll-out of the tool to institutions continued and serves as a valuable resource to track improvement in collection care and ensuring collection infrastructure is appropriate for safeguarding collections. Since the inception of the tool the **overall implementation percentage across institutions increased from 41% to 62%**. This shows an overall improvement in the management of risks to collections and the development of collection care documentation to ensure professional and scientifically credible practices. A total number of **676 updates** were made to standards and practices across partner collections from 1 April 2025 to 31 March 2026. The Tool provides institutions with a structured way to monitor and demonstrate improvements, enables collection professionals to track and share outcomes of their work, and supports the NSCF network through shared data that highlights progress and areas needing attention.



Collection Status Tacking Tool Interface

6. Institutional Organisational Development Workshops

The NSCF's strategic organisational development initiative, the Roots to Fruits workshops, successfully reached a major milestone over the last six months. Our facilitators conducted intensive **sessions across nine partner institutions**, including ARC-PHP, SAIAB, East London Museum, Amathole Museum, Bayworld/Port Elizabeth Museum, NICD, Wits Moss Herbarium, Durban Natural Science Museum, and the SANBI KZN Herbarium. These workshops provide a dedicated collaborative space for teams to reflect on their unique institutional culture and operational environment. By translating assessment recommendations into practical next steps, the sessions aimed to empower staff to strengthen both their collections management and broader organisational systems.

A key focus of the intervention is aligning daily workflows with the NSCF Tracking Tool and long-term collections mobilisation goals for impact and value. Through these facilitated dialogues, it is hoped that institutions are better equipped to navigate shared challenges and build robust, sustainable internal systems.

Institutional Organisational Development Workshops at various partner institutions

7. Emerging Leaders Development

Working with the outcomes of the assessments and implementation of standards and SOPs across institutions requires that new ways of working are designed and piloted, and through a reflective process, revised or modified, taking into account each institution's unique challenges, culture and background but also the need to work as a community of practice. The previous transformation contracts have highlighted the important role that emerging young leaders within the institutions play in effecting change, and development of this community is an imperative for the current phase of the NSCF. The first session with 26 participants from partner institutions and the NSCF hub was held in Cape Town from 8 to 12 April 2024. The session was facilitated by the Organisational Development consultants and covered topics on complexity leadership applied to the NSCF context, competencies for driving change and social technologies for transformation, and participation in communities of practice for capacitation of natural science collection in South Africa.

Building on the success of the 2024 pilot immersion workshop, A total of 30 participants attended the May 2025, November 2025 and March 2026 workshops, representing a diverse range of institutions within the NSCF network. Overall feedback indicates a high level of satisfaction with the Emerging Leaders Programme. Participants valued the quality of facilitation, the relevance of the content, and the opportunities for reflection and growth. The May workshop was broadly viewed as a meaningful and transformative experience that strengthened leadership confidence, collaboration, and self-awareness across the cohort.

The Emerging Leaders Programme has evolved into a replicable leadership development product that can be adapted by other institutions to strengthen organisational capacity and leadership culture. Through its immersive, reflective, and action-based learning design, participants develop confidence, practical tools, and a shared language of leadership that they take back to their institutions. This enables them to foster collaboration, improve team cohesion, and contribute to institutional transformation initiatives. The programme has also inspired greater engagement across the NSCF network, with participants stepping into leadership roles, initiating institutional interventions, and moulding a new generation of forward-looking collection professionals.

Emerging Leaders Workshops, May and November 2025

8. Virtual Museum Collections Digitisation & Knowledge Sharing

This past year marks an important period for the NSCF imaging initiatives, shifting from large-scale imaging to analysis and knowledge sharing across our partner network.

Herbarium Digitisation: A National Milestone Reached

We are proud to announce the completion of the national project to image plant specimens across South Africa's small and medium-sized herbaria. This is a major milestone in which the NSCF digitised over 800,000 specimens from 14 herbaria, many of which were previously difficult to access. Regional and training collections are often under-represented in national datasets and yet these collections frequently hold unique material, including local endemics and fine-scale geographic records that can be important for determining conservation priorities.

Highlights from the final phase included the completion of the Selmar Schonland Herbarium (Albany Museum), the country's fourth-largest collection with 250,000 specimens, as well as the Nelson Mandela University herbarium. Most recently, the team commenced work at the McGregor Museum (Kimberley) in November 2025, where they successfully prototyped the imaging of complex 3D plant specimens using advanced stacking technology.

With the primary capture phase finished, the team is now pivoting to analyse the broader significance and long-term impact of these digital collections on global botanical research. With the primary capture phase now complete, the focus of this project now moves to publication and analysis. This includes analysing how these newly accessible collections fill gaps in national datasets as well as how they can support emerging approaches such as AI-assisted transcription, identification, and trait extraction.

Museum Specimen Imaging: Collaboration and Capacity Building

NSCF imaging and curation technicians spent two weeks onsite at Bayworld and the Durban Natural Science Museum, digitising important type material and training teams. This was sparked by engagements during the NSCF Emerging Leaders Workshop. Beyond the photography itself, the focus was on institutional skills transfer with our technicians provided hands-on training to museum staff and interns, assisting them with workflows for image stacking to post-production. It is hoped that this will build internal expertise at our partner museums to scale digitisation and contribution to the Virtual Museum.

Skills sharing sessions at Bayworld and Durban Natural Science Museums

Palaeontology and Zoology Highlights

- Iziko Museums of South Africa: Digitisation of the Karoo Palaeontology, mammal, and bird type specimens is now complete, with the herpetology collection currently being processed.
- SAIAB National Fish Collection: The project reached a major milestone with over 2,400 fish type specimens now fully imaged. Our photography team has further expanded their impact by contributing to curation, outreach, and high-quality specimen photography for various upcoming scientific publications.

Type specimen images from Iziko Karoo Palaeontology collection

Archival Document Digitisation

The archival document digitisation team has officially concluded the digitisation of historical records at the National Herbarium (SANBI). On 1 July, operations transitioned to the Agricultural Research Council (ARC) - Plant Health and Protection. Since the project's inception in 2024, the team has successfully digitised **4,722 historical documents**.

9. Strategic Rescue and Incorporation of Orphan Collections

A core objective of the NSCF is to secure vulnerable natural science collections that lack the appropriate curatorial and resource capacity, preventing their decay, loss, or transfer overseas. In the current funding cycle, several key orphan and at-risk collections were identified and approved for transfer and incorporation into partner institutions with established infrastructure, curatorial expertise, and long-term sustainability. This initiative not only protects irreplaceable national heritage but also increases accessibility to these valuable resources for the global research community.

The following table summarises the recent collaborative agreements for the transfer and incorporation of at-risk collections:

Receiving Institution	Donating Institution / Source	Collection Type	NSCF Funding and Staffing Allocated	Significance of Collection
South African Institute for Aquatic Biodiversity (SAIAB)	Penn State University (USA)	Malawi Cichlid Fish	R350,000.00 2 x NSCF Hub curation technicians	Globally significant endemic fish from Lake Malawi.
KwaZulu-Natal Museum (KZNM)	McGregor Museum	Mollusc Collection	R160,000.00	Valuable non-marine mollusc material.
University of KwaZulu-Natal (UKZN) - Bews Herbarium	University of Zululand Herbarium	Herbarium Specimens	R80,000.00 1 x NSCF Hub curation technician	Resource-limited collection with high insect pest damage risk.

Compton Herbarium (SANBI)	Harold Porter (GHPG) & Karoo Desert Herbaria	Herbarium Specimens	R280,800.00 (includes funding for 3 x research assistants)	Consolidation of small botanical garden collections.
Iziko Museums of South Africa	Various Private Collections	Fossil & Entomology	R550,639.76 (includes funding for 4 x collections assistants)	Incorporation of private Klinger, Van Dijk (Fossil) and Ball (Entomology) collections.
National Institute for Communicable Diseases (NICD)	KZN and Mpumalanga Malaria Control	Mosquito (Disease Vector)	R193,896.00 (includes funding for 1 x collections assistant)	Collections of disease vector species valuable for medical entomology.
Lepidopterists' Society of Africa (LepSoc)	Various Private Collections	Butterfly/Lepidoptera	R170,000.00 (includes funding for 1 x data capturer)	Incorporation of private African butterfly specimens, some potentially extinct.
Total Funding Committed			**R1,748,335.76**	

South African Institute for Aquatic Biodiversity (SAIAB) The NSCF provided R350,000.00 for the repatriation and incorporation of the extensive Malawi Cichlid fish collection from Penn State University in the USA. Additionally the NSCF appointed 2 curation technical staff to assist SAIAB with the incorporation of the collection. This is a globally significant collection of endemic fish from Lake Malawi, collected from African waters. Its transfer to SAIAB, a leading African aquatic research institute, ensures its long-term preservation under professional curatorial standards and significantly enhances its accessibility for African researchers, particularly as the current US curator approaches retirement.

Incorporation of Malawi cichlid fish collection into SAIAB main collection

KwaZulu-Natal Museum (KZNM) Funding of R160,000.00 was allocated to facilitate the transfer of the mollusc collection from the McGregor Museum. This collection, which was inappropriately stored and lacked dedicated curatorial staff at the McGregor Museum, holds significant historical and scientific value, as some material was used in a major 1939 publication on South African non-marine Mollusca. The KZNM is the largest holder of mollusc collections in Africa, ensuring the collection is moved to an environment with appropriate staffing, resources, and storage for its long-term care.

University of KwaZulu-Natal (UKZN) - Bews Herbarium The Bews Herbarium received R80,000.00 for the relocation and incorporation of the University of Zululand Herbarium collection, as well as a curation technician to assist with incorporation. The Zululand collection was suffering from visible insect pest damage due to the limited resources at the University of Zululand. The transfer ensures the collection is preserved in a safe environment, leveraging Bews Herbarium's proven track record and capacity in managing and curating significant provincial collections, preventing the critical loss of material.

UniZulu and Bews Herbarium staff members packing up the collection for relocation

Compton Herbarium (SANBI) A total of R280,800.00 was allocated to the Compton Herbarium to incorporate the collections from the Harold Porter Herbarium (GHPG) and the Karoo Desert Herbarium. This consolidation effort targets small botanical garden collections, bringing approximately 6,500 specimens into the main SANBI curatorial and data management system (BODATSA). This centralisation is a key step towards digital capture, scientific verification, and long-term security, ensuring these valuable botanical records are made accessible to researchers.

Iziko Museums of South Africa Iziko received R550,639.76 for the incorporation of three separate, important orphaned collections: the Klinger and Van Dijk fossil collections, and the Ball entomology collection. By transferring these privately held collections, often lacking stable long-term care, into the nationally mandated structure of Iziko, the NSCF ensures these specimens, including unique fossil and insect material, are integrated into the national network, curated to global standards, and made available for future scientific use.

National Institute for Communicable Diseases (NICD) Funding of R193,896.00 was approved for the relocation and curation of orphan mosquito collections from the KwaZulu-Natal and Mpumalanga provincial malaria control programmes. These collections, which contain approximately 2,000 mosquito species (including disease vector species), are a critical resource. Their integration into the Medical Entomology Museum at the NICD ensures they are maintained and readily accessible for ongoing research in public health, biosecurity, and medical diagnostics.

Lepidopterists' Society of Africa (LepSoc) A sum of R170,000.00 was granted to LepSoc's African Butterfly Centre for the incorporation of orphaned private butterfly collections. The centre manages a consolidated collection containing approximately 200,000 specimens, including representatives of nearly all South African butterflies, some of which may now be extinct. This funding supports essential activities like pest decontamination (using a new chest freezer) and specimen data capture, ensuring the long-term physical care and virtual accessibility of this irreplaceable entomological material.

Challenges:

1. Operational and Financial challenges. Recruitment, procurement, and agreement approvals are managed through SANBI systems, resulting in delays due to multiple layers of authorisation. A key challenge has been recruiting data specialists and other technical staff, given the scarcity of these skills and the short-term nature of NSCF contracts tied to the SANBI–DSTI funding agreement. **While SANBI had previously agreed to three-year contracts following DSTI's confirmation of the NSCF as a long-term project**, this arrangement has recently reverted to contracts limited to the funding period, creating additional challenges when recruitment occurs late in a cycle.

These financial constraints are further complicated by the late transfer of funds, which creates a significant knock-on effect for the entire project. While the project reached the 90% spend target for the 2024/25 cycle by March 2024, the subsequent grant was only finalized in November 2024 and the 2025/26 funds released as late as September 2025.

This cycle directly undermines our recruitment and procurement efforts. Because SANBI mandates that all contracts, including those for scarce technical specialists, be strictly tied to the validity of the current DSTI agreement, the window for meaningful employment offers is constantly shrinking. As we approach the end of the current agreement in March 2027 without a secured extension, it is becoming increasingly difficult to fill vacant posts or offer job security to current staff. This misalignment between funding cycles and administrative requirements creates a persistent bottleneck that hinders our ability to realign with the financial year and meet long-term project goals.

2. Fostering a culture of accountability and societal relevance across institutions remains a core challenge. Many collections and staff have historically worked in silos, focusing on internal priorities rather than collective outcomes, which limits the broader impact of research and the efficient use of resources. The new Organisational Development contract aims to address institutional silos and strengthen a culture of collaboration, accountability, and societal service across the network. The work will focus on institution-level interventions, emerging leaders development, and cross-institutional learning processes designed to build resilience, reduce duplication, and maximise collective impact. Emerging leaders from partner institutions are being supported to champion and embed inclusive, outward-looking practices in their teams. This approach will complement other NSCF initiatives to further position the facility as a coordinated national system rather than a set of isolated institutions.

3. Institutional ownership and engagement. Building on earlier work to improve coordination and inclusivity across the network, the external review identified the need to deepen institutional ownership. Institutional engagement in strategic decision-making has at times been uneven. To address this, the Coordinating Committee undertook a structured review and agreed to trial various substructures to strengthen institutional participation and accountability.
Furthermore, a challenge remains in ensuring sustained engagement and formal participation across all member institutions. While the network has strengthened collaboration, the full commitment of all partners remains tenuous, as evidenced by a lack of cooperation from some parties in critical network activities. This uneven buy-in introduces a risk of fragmentation, jeopardising the vision of a fully integrated and collectively accountable national research infrastructure.

4. Development of an online virtual museum. Development of the online Virtual Museum has proven more complex than initially envisaged, particularly due to delays with system integration and hosting arrangements. Following engagement with SAIAB, these issues are largely resolved with revised timelines agreed upon. In parallel, significant backend work has been completed, including development of metadata standards, workflows, and data pipelines to support integration of digitised specimens. A phased approach is being worked through to allow early rollout of core components while the platform is finalised and digitisation work is scaled to support it. A virtual library has been created and ready for deployment as a parallel component within the Virtual Museum.

5. Scaling and institutionalisation of NSCF initiatives. Several NSCF initiatives have shown strong results at pilot stage, demonstrating clear value and impact. The next challenge lies in scaling these initiatives by embedding them within institutional structures and work programmes. This requires institutional staff to be capacitated and for institutions to take ownership of implementing NSCF-aligned practices and targets.

Approval

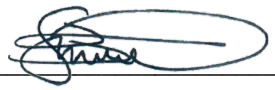
Submitted by:

Dr Anthony Magee

NSCF Lead

Date: 05 May 2026

Approved by:



Prof Ramagwai Sebola

General Manager: Foundational Biodiversity Science

Date: 05/05/2026