



BID Africa 2017 – Small Grant Template

Final narrative report

Instructions

- Fill the template below with relevant information. **please indicate the reason of the delay and expected date of completion.**
- Use the information included in your project Full proposal (reproduced in annex III of your BID contract) as a baseline from which to complete this template
- The information provided below must correspond to the financial information that appears in the financial report
- Sources of verification are for example direct links to relevant digital documents, news/newsletters, brochures, copies of agreements with data holding institutions, workshop related documents, pictures, etc. **Please provide access to all mentioned sources of verification** by either providing direct link or sending a copy of the documents.
- This report must first be sent as a **Word document** to BID@GBIF.org and be pre-approved by GBIFS
- Once this report is pre-approved in writing by GBIFS, it must be signed by the BID project coordinator and sent by post to:

The Global Biodiversity Information Facility Secretariat (GBIFS)
Universitetsparken 15
DK-2100 Copenhagen Ø
Denmark

Template

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2. Project Information

2.1. Project Coordinator: Institution/network/agency name: Natural History Museum of Zimbabwe

2.2. Main contact person and role: Tsitsi S Maponga (Assistant Curator of Mammalogy)

2.3. BID proposal identifier: BID-AF2017-0052-SMA

2.4. Project title: Mobilizing specimen data on bats and rodents from Zimbabwe

2.5. Start date and end date of the reporting period:01/10/2017-31/12/2018

2.6. Country in which the activities take place:Zimbabwe

3. Overview of results

3.1. Executive summary

Give a short summary of the activities implemented and the outcomes of the project for the reporting period (500 words maximum)

78 bat species (33 genus' and 9 families), 3 shrew species (2 genus' and 2 families), 1Hare species, and 14 rodents (14 genus' and 4 families) from 6188 specimens in the wet collection have been updated and digitized (published in January 2019). The data was digitized according to the Darwin Core standards was cleaned on excel and further cleaned on open refine. The specimen records were also geo-referenced at country level and checked for taxonomic errors. Data was uploaded into our database system on SPECIFY 6. We created maps using QGIS, and these would be uploaded on our website for easy accessibility and the link made available through the IPT. With regards to capacity building, five workshops linked to data digitisation, analysis, policy making and main streaming were attended the program coordinator.



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3.2. Progress against expected milestones:

Give an overview of all the expected milestones for your project from the beginning until now (see Annex V of your contract)

Expected milestones/activities	Completed ? Yes/No	Explanatory notes	Sources of verification
Completed capacity self-assessment questionnaire for data holding institutions https://www.gbif.org/document/82785/self-assessment-guidelines-for-data-holding-institutions (EN) https://www.gbif.org/document/82813/modele-dauto-evaluation-pour-les-institutions-detentrices-de-donnees (FR) (Early Progress report milestone)	Yes	Self assessment forms filled in and submitted to the secretariat.	
At least one national data publishing institutions are registered with GBIF.org Guidelines to become a publisher: https://www.gbif.org/become-a-publisher (Early Progress report milestone)	Yes	The Natural History Museum is a registered publisher and currently hosts its own IPT.	http://www.gbif.org/publisher/5f2df235-914f-4cc9-b247-08fb981e8b8a
At least one person from the project team has completed the certification process following the BID Capacity Enhancement workshop on Data Mobilization organized as a part of the BID programme Africa 2015 or the BID programme Africa 2017 (Early Progress report milestone)	Yes	The project leader was certified in 2015 during the BID Capacity Enhancement workshop.	
Knowledge dissemination activities have been scheduled following the first BID Capacity Enhancement workshop (Early Progress report milestone)	Yes	A biodiversity digitization workshop was hosted from 16-19 January 2018 at the Natural History Museum. Bindura University also attended this workshop. Workshop on ecological niche modelling which was held in	https://www.facebook.com/pg/NHMZimbabwe/photos/?tab=album&album_id=1595574997223440



		<p>Madagascar at the end of January 2018.</p> <p>Biodiversity Data Use for Decision Making workshop which was held in Cape Town from the 9th to the 13th of April 2018.</p> <p>Workshop on data quality and standards, spatial analysis and decision making held in Bulawayo in June 2018.</p> <p>Feedback workshop organised by Bindura University held in Harare in January 2019.</p> <p>Feedback workshop organised by the Natural History Museum in January 2019.</p>	
At least one dataset has been published to GBIF.org (Midterm report milestone)	Yes	A checklist of 62 species, from 30 genus' and 10 families comprising of 4000 specimens has been published.	http://www.nhmbyo.co.zw/ipt/resource?r=checklist_of_bats_housed_at_the_natural_history_museum_of_zimbabwe
The data users identified in the full proposal have documented their intended use of the mobilized data and provided early feedback (Midterm report milestone)	Yes	We are hoping that during the Decision making and ecological niche workshop, we discussed data uses further, and secured intention of use from NUST and National Parks and Wildlife Authority.	
All mobilized data have been published to GBIF.org (Final report milestone)	Yes	A checklist of 96 species, 49 genus' and 16 families for 6188 specimens have been published on GBIF.	http://www.nhmbyo.co.zw/ipt/resource?r=mammalogy_occurrence_datasets
All published data meet the minimum requirements outlined in the Data Quality Requirements available at https://bid.gbif.org/en/community/data-quality/ (Final report milestone)	Yes	Darwin core standards were used from taxonomic cleaning, headings, and presentation.	
The training outcomes of the project have been documented, including the number of people receiving	Yes	The project coordinator attended two training workshops and facilitated in	



certification through the BID Capacity Enhancement workshops, the number of people trained in nationally organized events, and the evaluation of the impacts of these training activities (Final report milestone)		the other three workshops.	
Final capacity self-assessments for national biodiversity information facilities have been completed with sustainability plans. https://www.gbif.org/document/82785/self-assessment-guidelines-for-data-holding-institutions (EN) https://www.gbif.org/document/82813/modele-dauto-evaluation-pour-les-institutions-detentrices-de-donnees (FR) (Final report milestone)	Yes	The forms were completed with all the sustainability plans and were sent to GBIF.	
All uses of the mobilized data have been documented (Final report milestone)	Yes	Data was uploaded onto GBIF website and maps were published on the Natural History Museum website.	https://drive.google.com/drive/folders/1ncRVLlyX4lfm7X1eLKd_Z37ulbaotlus
Best practices and lessons learned have been documented (Final report milestone)	Yes	All our documentation was according to Darwin Core standards, and we used licenses when publishing our data.	



3.3. Project deliverables and activities

Refer to the table in section 2.2 "Deliverables, activities and reporting criteria" of your BID full proposal. Provide updates on the status of each of planned deliverables. In the event of unexpected delay, please provide detailed explanatory notes and indicate planned completion date. Add as many rows as needed.

Deliverable	Related activity	Completed ? Yes/No	Explanatory notes	Sources of verification
6000 mammalogy specimens records digitized and Geo-referenced into a functional database system in SPECIFY 6 and uploaded to GBIF	Data digitization and mobilization	Yes	An occurrence dataset (6188 specimens) has been published on our IPT hosted by GBIF. This data has been georeferenced to country level and maps have been created using QGIS and uploaded onto our website and linked to our occurrence dataset on the IPT.	http://www.nhmbyo.co.zw/ipt/resource?r=checklist_of_bats_housed_at_the_natural_history_museum_of_zimbabwe http://www.nhmbyo.co.zw/ipt/resource?r=mammalogy_occurrence_datasets https://drive.google.com/drive/folders/1ncRVLlyX4lfm7X1eLKd_Z37ulbaotlus
<p>25 Museum staff and 2 staff from the National Parks and Wildlife Authority and 20 undergraduate students from the National University of Science and Technology will be trained on digitization (refresher course) GIS tools, and Ecological modelling techniques and how to access biodiversity data from GBIF</p> <p>The assistant Curator attended two capacity enhancement workshops in Madagascar and Cape Town, South Africa.</p>	Training and capacity building.	Yes	<p>The biodiversity digitization (refresher course) workshop was conducted on the 16-19th of January 2018. This was facilitated by the principal investigators for the mammalogy and fresh water project. Bindura University also attended this workshop.</p> <p>The Biodiversity Data Use for Decision Making follow-up digitization workshop was held in Cape Town from the 9th to the 13th of April 2018. The workshop focused on data quality and standards, spatial analysis and decision making. The other workshop on ecological niche modelling which was held in Madagascar and the project coordinator now has an appreciation of QGIS and Maxent which are a good starting curve to use our collections as baselines and comparisons for future projections. There maybe more need, for the project coordinator to engage in</p>	https://www.facebook.com/pg/NHMZimbabwe/photos/?tab=album&album_id=1595574997223440



			<p>extensive GIS training in the future, for the best output of results.</p> <p>Workshop on data quality and standards, spatial analysis and decision making was held in Bulawayo from 25-29 June 2018. We invited stakeholders in and around Bulawayo, and these include, Dambari, NUST, National Parks, Debshan ranch farm, University of Zimbabwe and Natural History Museum.</p> <p>Feedback workshop organised by Bindura University held in Harare on the 11th of January 2019. The project coordinator presented on the importance of mainstreaming Data into policy making.</p> <p>Feedback workshop organised by the three project coordinators at the Natural History Museum on the 22nd January 2019.</p>	
Historical species metadata and checklists for at-least 20 mammalian families of rodents and bats that are housed in the natural History Museum of Zimbabwe.	Applying biodiversity data in decision-making processes	Yes	<p>A checklist dataset has been published 96 species (49 genus' and 16 families).</p> <p>Occurrence data on 6188 specimens in the wet collection have been updated and digitized.</p>	http://www.nhmbyo.co.zw/ipt/resource?r=checklist_of_bats_housed_at_the_natural_history_museum_of_zimbabwe



3.4. Datasets published on GBIF.org

Refer to the table in section 2.4 “Biodiversity data mobilization plan” of your BID full proposal. If the dataset is not yet published, please indicate the name of the institution that is expected to host the data when published in the column “DOI or URL/Planned hosting institution”. Add as many rows as needed.

Dataset title	Publishing institution	DOI or URL/Planned hosting institution	Date/expected date of publication	Explanatory notes
Mobilizing specimen data on bats and rodents from Zimbabwe resource. (Checklist)	Natural History Museum	http://www.nhmbyo.co.zw/ipt/resource?r=checklist_of_bats_housed_at_the_natural_history_museum_of_zimbabwe	Published	More species were added onto the previously published dataset.
Mobilizing specimen data on bats and rodents from Zimbabwe resource. (Occurrence)	Natural History Museum	http://www.nhmbyo.co.zw/ipt/resource?r=mammalogy_occurrence_data_sets	Published	6188 specimens were published.

3.5. Examples of use of biodiversity data available through GBIF

Data mobilised through the BID programme, ultimately, should guide natural resource conservation and management policy. We require you to report on how you have integrated these data into these policy-making processes. You may want to refer to the section 2.5 “Plan to support the integration of biodiversity information into policy and decision-making process” of your original proposal as a reminder of your original commitments.

As part of that process, we request you to provide us with a summary of how you have used these data within the decision-making process and we have included some guiding questions below to help with that process. Please note that if your dataset has been combined with other datasets in analyses that guide the decision-making process, then this should be recorded too.

Description

Has your project been successful in integrating data within the policy-making process?

Where did the demand for these data come from?

If yes, which policies have been developed using your data?

If no, what were some of the challenges you faced in getting your data into those processes?

Did you have a biodiversity data integration plan from the beginning of your project? If so, did you have to adapt your plan as the project progressed and why did you have to make those alterations?

In what format are your data being used i.e. what were the analyses, if any, that you needed to perform on the data to ensure that they were in a format accessible to policy-makers?

What level of communication has there been with the relevant policy stakeholders i.e. by which means? With what regularity? And, how critical have these interactions been for the development policy-relevant analyses?

What additional support (resources, tools, network, training) would be needed for your project to ensure the flow of information from mobilisation to decision-making?

How would you improve on your own processes in the future to improve data integration in the future?



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Data may serve other purposes other than for policy-making and these are as valuable. How was your data used for other purposes e.g. development of training materials, scientific publications, communication activities etc?

We are currently working on a syntarsus (Atlas) publication dedicated to the publishing the maps and the data that was uploaded onto GBIF and the museum website. We are working with the librarian to make this publication available (both in soft and hard copy format) to all our stakeholders including the general public. The publication will be entitled “Mobilising and digitizing 6000 specimens housed in the wet collection of the Natural History Museum of Zimbabwe” and we have attached the Introduction of the Syntartus. In our concept note, we highlighted the need to make available distribution and composition data to all our critical stakeholders and partners. They could use this data to set conservation priorities, particularly National Parks Managers who may have the current species distribution trends without baseline of the past distributions which could enable them to identify changes, threats and areas that are critical to be priority for conservation. In the past we have received enquiries from universities such as University of Cape Town in South Africa, University of Zimbabwe and from some NGO's such as CIRAD (French government). This is why it is critical for us to develop readily available distribution and prediction maps into one composite Atlas. We have had stakeholder meetings, in which we discussed the most preferred data presentations, with regards to maps. Therefore two types of maps are emphasized here particularly because, it may be difficult for students and layman to interpret habitat suitability or prediction maps, whilst scientists may find it better to interpret prediction maps. As already emphasized we are currently in the process of producing a Syntarsus (Atlas) but we do have species specific maps that are readily available on our website. Our overall aim is to eventually produce an Atlas' that can help veterinary scientists predict disease prevalence using our bat prediction maps and include this data in their policies. However, in presenting our data, we would need another workshop to present the Atlas to the users, to explain data use and how the data can be incorporated into future policies, in zoonotic diseases, conservation, and management for near threatened species. In the future stakeholder engagement is critical when analysing data, as there are critical or prevailing aspects that may need immediate attention using historical data. Therefore, it is important to present collated data before it is analysed so that the data can be used for resolving current issues using the best possible analysis softwares. However, in order to ensure that a wide range of stakeholders receives information about this project, we are creating posters that we will disseminate to all the local universities and High schools, Matopo National Park, Dambari, Debshan. We will also put it up in our gallery so that visitors can also have an appreciation of what we are doing in the background.

Generally, we have not managed to fully integrate our data into policy making but we hope with the examples of prediction maps that we are going to publish in our Syntarsus more stakeholders are going to find our data more useful. We are also part of the GBIF node, so we hope this will increase our visibility and it will give us a bigger and better platform to present our data and to inform our stakeholders on how they can potentially use our data and collaborate with us in future research. Being part of the GBIF node also means that we have more access to the ministry which is predominantly involved in policy making. Building this relationship was critical for us, especially since the National Museums and Monuments is in a different Ministry (i.e. Home affairs) which is not influential when it comes to biodiversity issues. In the future now that we have built solid networks with other universities (Chinhoyi University of Technology), organisations (EMA, Birdlife, Forestry Commission) and the Ministry of Environment, we can facilitate more stakeholder meetings on data use, biodiversity data integration, and communication. The advantage is that we will have more input and we can liaise with a wider audience which was not possible without the GBIF node. This will enhance integration of historical data on biodiversity, in research and policy making.

Supporting materials

As part of our reporting, we request you to provide us with a copy of any materials highlighting data use on your dataset, either on its own or in combination with other datasets. This could be in the form of:

- Reports – governmental, ministerial, non-governmental organisations, international policy-making bodies
- Policy briefs
- Scientific publications



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- Outputs from analyses that will be used in the future e.g. species distributions maps and other spatial analyses
- Education/communication materials

Please provide a valid dataset to the doi. Where the doi is not known, please state why.

Name of resource	Type of resource i.e. report, policy brief, scientific publication, analysis output, education materials, communication materials, other (please specify)	Dataset doi	Link to document or publication citation
Syntartus (Atlas) - Mobilising and digitizing 6000 specimens housed in the wet collection of the Natural History Museum of Zimbabwe specimens housed at the Natural History Museum.	Communication material/ Report		We are still yet to publish the Syntarsus for specimens housed at the Natural History Museum. We are going to publish distribution (using QGIS) for all the species. Prediction maps using maxent are going to be created for the three near threatened bats that are housed at the Natural History Museum using Maxent. The Syntarsus will be made available in both soft and hard copy formats.
Presentation of project and Results in the UNEP/UNESCO/BMU COURSE "Ecosystem Management-Biodiversity Conservation and Ecosystems Services", Germany	Presentation during fellowship		Presentation will be done during the fellowship between the 29 th of August and 26 th of September 2019.
Posters	Communication material		Posters to be disseminated to our stakeholders.
Distribution maps online	Output	https://drive.google.com/drive/folders/1ncRVLLyX4lfm7X1eLKd_Z37ulbaotlus	We have made distribution maps for all the species that have been documented under GBIF.

3.6. Events organized as part of the project

List all the events that have been organized as part of your project. Please provide links to any documents or webpages documenting the use in the "Sources of verification" column. Add as many rows as needed.



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Full title	Organizing institution	Dates	Number of participants	Sources of verification
Refresher course on Introduction to Data mobilization and digitization	African Insect Atlas Madagascar division	31 January - 5 February 2018	35	
Data decision making and ecological niche modelling workshop	Natural History Museum	25 June – 29 July 2018	22	
Feedback workshop organised by the Natural History Museum in January 2019.	Natural History Museum	22 January 2019	30	





4. Updated calendar for the BID project implementation and evaluation period

The calendar should be completed in the same way as in the Full Project Proposal, but should include any expected changes. Provide reasons for any expected changes in section 4.1 'Explanatory Notes'.

Implementation period start date and end date (dd/mm/yy)																	
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Notes	
Early Progress evaluation & reporting			x	x													
Refresher course on digitisation (including lessons learnt)				x													
Mid-term evaluation & reporting							X	X									
BID Capacity Enhancement workshop – Data mobilization and publication (Online training - Participation is mandatory)																	
BID Capacity Enhancement workshop – Data use (Online training - Participation is mandatory)							x										
GIS and Ecological Niche modelling workshop										x							
Analogue to digital documentation	x	x	x	x	x	x	x	x	x	x	x	X					
Clean data, refine data, Georeference localities and confirm taxonomy with experts		x	x	x	x	x	x	x		x	x	X					
Report compilation and checklists				x								x	x	x	x	We are still in the process of developing a bat Atlas which will incorporate future distribution maps for bat species that are near threatened.	
Upload data to GBIF					x		x					x			x		



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Evaluation period start date and end date (dd/mm/yy)				
Activity	1	2	3	Notes
Final financial and narrative reporting		x	x	
<Activity name>				

4.1. Explanatory notes:

- 4.2. We have experienced challenges over the last few months, with regards to our finances, and the political turmoil that led to lack of purchasing of some equipment and fulfilling of duties. However during the evaluation and monitoring stage, we hope to create for instance the Bat Atlas (including species distribution maps for near theated species developed on Maxent) and Brochures as educational materials for High School and University studebts. National Parks could also use these posters to show distribution of bats particularly throughout Zimbabwe. Our hope is to eventually create area specific distribution maps starting with Matopos National Park.



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5. Sustainability plans

Explain the approach that will be taken to ensure the sustainability of the project's results after the end of your project (500 words maximum)

Our main aim is to make available baseline and species distribution information within our collection to different stakeholders, therefore during the monitoring and evaluation stage we aim to produce a Bat Atlas with detailed maps for each species. This will help particularly in tracking species distribution and diversity for each area. Eventually we aim to produce area specific species distribution maps starting with Matopos, which we will give to municipalities, community centres, schools and environmental organisations. This will help keep track of known bat sites particularly caves in Matopo, and it will help us find new sites and species. New sites are particularly important in tracking the bat species diversity. Involving school children will be easier as we already have collaborated with Dambari and we visit schools (environmental clubs) in Matopos once every month, therefore such engagement, increases environmental awareness and involvement within the most critical age group.

6. Beneficiaries/affiliated entities and other cooperation

6.1. Relationship with project partners

Please describe the relationship between your project coordinating team/institution and your project partners, and with any other organisations involved in implementing your BID project.

The NUST department of Forestry and Wildlife Management has a memorandum of understanding with museum in terms of research. We also conduct lectures on Mammalogy to their second year students. PhD, Masters and undergraduate students come and make use of our collection particularly the specimens. Now that we have a substantial amount of baseline data that is digital format they can utilise this resource. The data can also be used in setting up sustainable conservation and monitoring strategies of biodiversity in Zimbabwe.

We also work with the ecologists from Matopos and Hwange National Park on their projects particularly in identifying specimens from scats from different species including birds. National Parks also has current trends of distribution which we also request, and our aim is that we provide a valuable database that they can also use to look at species trends. With agreements to utilise each other's data we foresee more research collaborations on current issues for better management of our natural resources.

6.2. Links to other projects and actions

Where applicable, outline any links and synergies you have developed with other actions, e.g. GBIF nodes, other BID funded projects, etc. If your organization has received previous grants in view of strengthening the same target group, to what extent has your BID project been able to build upon/complement the previous project(s) ?

The mammalogy project collaborated with entomology project (under project coordinator Kudzai Mafuwe) in conducting a workshop on bioinformatics which was held on the 16th to 19th of January 2018, at the Natural History Museum. Present was the team from Bindura. The project leader also attended a workshop organised by the Entomology Regional project (African Insect Atlas) on ecological niche modelling and conservation outcomes, in Antananarivo, Madagascar. These two workshops were more of refresher courses, and it became easier particularly for the workshop coordinator to be able to explain terms and to offer guidance on database management to other users/participants. This created better engagement with stakeholders particularly for the first workshop.

The project coordinator also attended a workshop in Cape Town in April 2018, and through networking contacts were made, and the subject on mainstreaming was particularly important, as this was a critical aspect lacking in our stakeholder engagement. It became easier when we engaged with our stakeholders during the Data use and policy making workshop in June 2018. We managed to get expectations and tease out future presentation and use of data, this is where we discussed future intent to collaborate, share and utilise data that each institution produced.

The project coordinator also made a presentation in the Stakeholders meeting which was facilitated by Bindura University in Harare on the 11th of January 2019 and the project coordinator was nominated to be part of the technical



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team of the Zimbabwean GBIF node. The last GBIF workshop (22nd January 2019) which was more or less a feedback workshop was a collaboration between three Natural History Museum projects. We presented our results and challenges throughout the project to all our stakeholders.

7. Visibility

Please refer to the [BID guidelines](#).

7.1. Visibility of the BID project

How is the visibility of your BID project being ensured?

Short summary

Before all the workshops started BID, GBIF and the European Union were acknowledged alongside the Natural History Museum. Project leaders also explained to all participants how they got their funding and the nature of their projects. The materials used such as writing sheets also had the GBIF, EU, BID logo on them and the Biodiversity informatics workshop was made public through the Natural History Museum facebook page, website and via participant twitter accounts. Promotional materials such as t-shirts pens, mugs and folders with GBIF, EU, and BID were also made and given to the workshop participants. Our findings and link to the IPT where our data is published were shared on the museum website.

Sources of verification

7.2. Visibility of the EU contribution

How is the visibility of the EU contribution being ensured within your project implementation?

Short summary

Simialrly to BID, before all the workshops started the EU, was acknowledged. Materials used such as writing sheets also had the GBIF, EU, BID logo on them and the Biodiversity informatics workshop was made public on the Natural History Museum Facebook page and website. Promotional materials with BID, EU, GBIF and NHM such as t-shirts pens, and folders were also made and given to the workshop participants. Our findings and link to the IPT where our data is published were shared on the museum website.

Sources of verification

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