BID Caribbean – National Grant Template
Midterm narrative report

Instructions

- Fill the template below with relevant information. If no result has been achieved on a specific point, please indicate it as "no result achieved yet" and **indicate 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 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 the link or sending a copy of the documents.

- This report must <u>first</u> 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

1. Table of Contents

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2. Project Information

2.1. Project Coordinator: Institution/network/agency name: Institute of Jamaica

2.2. Main contact person and role: Suzanne Davis (Project Coordinator, and Co-Facilitator for the Jamaica Invasive Species Database Workshop)

2.3. BID proposal identifier: BID-CA2016-0001-NAC

2.4. Project title: Advancing Jamaican Biodiversity Data Products and Information Services

2.5. Start date and end date of the reporting period: September 11, 2017 – July 30, 2018

2.6. Country in which the activities take place: JAMAICA

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)

The BID Jamaica Project Contract was signed in September 2017 but progress has been slow due largely to some human and financial resource, logistical and IT issues. There were difficulties in procuring a project manager and one was not hired until April 17, 2018. At the time of the project proposal, the IOJ had a full complement of project related staff, but since then the staff complement has decreased and this has affected the pace at which work can be completed.

The JISD workshop was held in January 2018 and the target of 25 new records and 10 updated records met, inclusive of the addition of geographic coordinates where available. However the database software could only accommodate low resolution images and a few of these were entered with the plan to configure the database to accommodate higher resolution images. This is still an issue being worked on. The specimen digitization workshop was held in March 2018 and cameras, light boxes, stands, and a Dell workstation for digitization were purchased.

The GIS and Metadata workshop was held July 5 – 6, 2018, four members of staff from the IOJ Natural History Museum of Jamaica, and two members of staff from NEPA attended. Unfortunately, no one from the JCDT was able to attend at that time.

Approximately 3,033 plant samples from 114 families, 152 genera and 247 species have been entered into the database by the Botany department.

Digitization of samples by the Zoology department has been hampered by three main issues – the wrong adapter sent for the camera, the delayed arrival of a computer for the digitization process, and the delayed arrival of a barcode reader. However, the department is working

on verifying the data in their records to fit the Darwin Code format. So far, the Zoology department has completed verification on 104 families, 233 genera, and 293 species.

Work by both Botany and Zoology has also been hampered by the lack of a suitable printer for printing permanent labels. Measures are being taken to acquire a suitable printer.

Work on the image database has been delayed due to reduced human resources in the IT department.

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3.2. Progress against expected milestones:

Expected milestones/activities	Completed? Yes/No	Explanatory notes	Sources of verification
Completed capacity self-assessment questionnaire for national biodiversity information facilities (www.gbif.org/resource/82277).	Yes		See Appendix 1 of the Early Progress Narrative Report.
At least one national data publishing institutions are registered with GBIF.org Guidelines to become a publisher: https://www.gbif.org/become-a-publisher For registered data publishers see: http://www.gbif.org/publisher/search	No		
At least one person from the project team has completed the certification process following the first BID Capacity Enhancement workshop	Yes	On-site and off-site exercises were completed and submitted	See Appendix 2 of the Early Progress Narrative Report.
Knowledge dissemination activities have been scheduled following the first BID Capacity Enhancement workshop	Yes	Meeting of the local Project Implementation Team members held on September 29, 2017 where presentations on the Capacity Enhancement and Regional Workshops were made by Keron Campbell and Suzanne Davis.	See Appendix 3 of the Early Progress Narrative Report.
At least one dataset has been published to GBIF.org	No	Scheduled for later in the year.	
The data users identified in the full proposal have documented their intended use of the mobilized data and provided early feedback	No	Scheduled for later in the year.	

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.

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Deliverable	Related activity	Completed ? Yes/No	Explanatory notes	Sources of verification
1.1 Curatorial staff for NHMJ (8 persons) trained in the digitization of biological specimens and publications, producing approximately 20, 000 digitized plant and animal specimens.	With the assistance of personnel from the Natural History Museum, UK (NHMUK), NHMJ staff will be trained in developing and using digitization techniques and workflows for plant and animal specimens	Yes	Training was completed but progress in digitization has been slow due to: • the NHMJ staff having to learn a new software for digitization; • also delays such as the wrong camera adapter for one of the cameras being sent from the UK; and also • the delayed delivery of a new computer (capable of handling the digitization process) for the Zoology department and lack of a barcode reader has resulted in no further digitization of specimens by Zoology. In the meantime the Zoology department is working on extracting data from their database and cleaning up the data.	See Appendix 1 – digitization workshop expenses See Appendix 2 – receipt from the Post Office for the adapter to be sent back to the UK.
1.2 Document with approaches to digitization customized to the NHMJ specimens, publications, resources and workflows	Documentation of steps taken in the pre- and post-training processes of developing and using digitization techniques and workflows	Completed	This has been completed by the NHM-UK.	See Appendix 3 which is the table of contents of the document.
1.3 Trained staff (1-2 persons) in Darwin Core Archive standard for preparation for creating metadata for biological databases	One or two selected staff members will attend a regional training workshop hosted by GBIF on Darwin Core Standard in	Yes	Basic Darwin Core Archive standards were covered in the Capacity Building Workshop in June 2017	Trainer, Laura Russell, can be contacted for confirmation at larussell@gbif.org

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	preparation for creating Metadata for biological databases			
2.1 New online image database for 50 plants, 40 animals and 10 ecosystems from Jamaica that includes taxonomic and geographic information	Collation of images from IOJ, NEPA and JCDT into one dataset for creation of the image database	No	In progress. So far 32 plant, 3 animal, and 3 ecosystem photos have been selected. Awaiting images from NEPA.	See Appendix 4 for some of the photos from the IOJ that are being considered.
	IOJ, NEPA and JCDT agree on criteria for selection of images	Yes	Criteria agreed on	See Appendix 5 for Image Selection Criteria.
	Scanning of images by Image Database Assistant	No	Having received cameras for digitization workshop, the cameras are of sufficiently high resolution to digitize slides. Photographs are to be scanned. Image Database Assistant not yet hired.	
	Creation of template for online database and uploading of images into database	No	In progress	
	Adding relevant data and metadata to selected images e.g. Identification, date, locality, altitude, GPS coordinates, etc.	No	In progress	
	Publishing of image database locally	No	Database not completed	

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2.2 Increased content for the Jamaica Invasive Species Database (JISD) via 25 new records and updating of 10 existing records for invasive alien species (IAS)	Configuration of JISD for coordinates and images by JISD Technical Facilitator	Yes	This was done in early January.	See Appendix 7 of Early Progress Report
	Selection of new IAS records to be entered and existing records to be updated	Yes	Species selected form the National list of invasive alien species.	
	Organization of an IAS Data Entry and Content Update Workshop	Yes	JISD Content Workshop held Jan 17-18, 2018. International Trainer (Dr. Silvia Ziller) offered workshop consultancy.	
	Entry of text, images and spatial data to the JISD at the Workshop	Yes	Entry of 10 geographic coordinates means there is now spatial data for some records. Few images were added due to issues with the size of the photos. This is still being resolved.	See Appendix 16 of Early Progress Report
2.3 Total of five expanded (updated) national databases on biodiversity and publications	Addition of digitized insect specimens and/or scanned animal photographs to NHMJ zoology database	No	Computer equipment received but barcode scanner not received. However, data verification is being performed and taxon trees created.	See Appendix 6 for list of Families entered for Zoology.
	Addition of digitized flowering plant specimens and/ or scanned	In progress	Some 3,033 plants have been entered into the database and have been verified.	See Appendix 7 for list of Families entered for Botany.

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	plant photographs to NHMJ herbarium database			
	Addition of coordinates to Jamaica Invasive Species Database (JISD)	Yes	A total of 10 species records have spatial data.	See Appendix 16 of Early Progress Report
	Addition of flowering plant specimens scanned images to Jamaica Virtual Herbarium (JVH)	No	Scheduled for late-2018	
	Addition of digitized publications to NHMJ library database	No	Scheduled for mid-late 2018	
2.4 Total of three maps and one checklist based on wildlife research permit data for 2010-2015, showing biodiversity research i) in protected areas islandwide, ii) in the Blue & John Crow Mountains National Park, iii) fo *Miconia sp.*, and a checklist for birds located in front Hill, St. Elizabeth	Creation of research distribution maps from Wildlife Research Permit data and the IOJ databases using ArcGIS tools with a focus on the Blue and John Crow Mountain National Park (BJCMNP) Online publishing of maps and checklist	Partially	Maps completed during workshop held July 5 – 6, 2018. However, there are difficulties with finding a server to host the content generated due to IT resource issues at both the IOJ and NEPA.	See Appendix 8 for list of maps created. See Appendix 9 for the Course Outline.
2.5 Metadata for a total of four to five datasets or databases:	Training Workshop for the creation of metadata using the Darwin Core Archive Standard	No	Metadata (ArcGIS' item description) has been added to one of the maps from 2.4 above and will be added to the other two. Darwin Core Archive Standard metadata is being applied to data during the digitization process.	
	Online publishing of metadata on IOJ web and Jamaica	No	Scheduled for last Quarter of 2018. At present the IOJ and the	

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	CHM websites		CHM websites are experiencing technical issues.	
2.6. Project data and information accessible through GBIF.org	Dialogue with GBIF on Data Publishing and hosting options for our project data information	No	September 2018	
	Submission of project data, i.e. images, digitized specimens, coordinates (where available) and metadata to a GBIF Publisher	No	Need assistance from GBIF in identifying Host Institution for published data.	
	Online publishing of project data by GBIF Publisher	No	Scheduled for late 2018	
3.1 Sensitization of key biodiversity stakeholders (e.g.) natural resource regulators, protected area managers, academia and policy makers) on freely available data and information to inform national biodiversity planning, policy and reporting. Examples of how digitized specimens, images and maps can inform the biodiversity strategies, the BJMNP Management Plan and complement the monitoring of wildlife research in Jamaica.	Jamaica Biodiversity Information for National Development (BIND) Workshop to i) present and share project outputs and ii) highlight both actual and potential uses of the project data and information under 2-3 themes e.g. invasive species management, national biodiversity reporting and protected area planning.	No	Scheduled for late 2018	

3.4. Datasets published on GBIF.org

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
Invasive Alien Species	Institute of Jamaica	To be discussed with GBIF/BID Secretariat	By Oct 2018	Data not yet mobilized
Insects	Institute of Jamaica	To be discussed with GBIF/BID Secretariat	By Oct 2018	Data not yet mobilized
Flowering Plants	Institute of Jamaica	To be discussed with GBIF/BID Secretariat	By Oct 2018	Data not yet mobilized
Mushrooms, mosses	Institute of Jamaica	To be discussed with GBIF/BID Secretariat	By Oct 2018	IT technical issues
Miconia and Bird Species	Institute of Jamaica	To be discussed with GBIF/BID Secretariat	Aug - Sep 2018	IT technical issues

3.5. Examples of use of biodiversity data available through GBIF

Use the table to document use or planned use of data available through GBIF as part of your project. You may want to refer to the section 2.5 "Plan to support the integration of biodiversity information into policy and decision-making processes" of your BID full proposal. Please provide the DOI for datasets published on GBIF or data downloaded from GBIF in the "Dataset" column. Briefly describe how the data have been used or are planned to be used in the "Data use" column (ca. 50 words). Provide the date or approximate time frame in months for the use or planned use in the "Date/time frame" column. Please provide links to any documents or webpages documenting the use in the "Sources of verification" column. Add as many rows as needed.

Dataset	Data user	Data use	Date/time frame	Sources of verification	Notes
Invasive Alien Species	Invasive Alien Species Working Group (Jamaica)	In both supporting and promoting planning, research on and public outreach about invasive alien species, inclusive of the Blue and John Crow Mtns. National Park. Documents on the status and trends of biodiversity e.g. Jamaica's State of the Environment Report; and National Spatial Plan	Within an 18 mth period		
Insects	IOJ, National Environment and Planning Agency	Documents on the status and trends of biodiversity e.g. Jamaica's State of the Environment Report	Within an 18 mth period		

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	(NEPA), Jamaica Conservation and	Environmental research in the Blue and John Crow			
Flowering Plants	IOJ, National Environment and Planning Agency (NEPA), Jamaica Conservation and Development Trust (JCDT)	Documents on the status and trends of biodiversity e.g. Jamaica's State of the Environment Report Environmental research in the Blue and John Crow Mountains National Park	Within an 18 mth period		
Mushrooms, mosses	National Environment and Planning Agency (NEPA), Jamaica Conservation and Development Trust (JCDT)	Documents on the status and trends of biodiversity e.g. Jamaica's State of the Environment Report Environmental research in the Blue and John Crow Mountains National Park	Within an 18 mth period		
Miconia and Bird Species	IOJ, National Environment and Planning Agency (NEPA), Jamaica Conservation and Development Trust (JCDT)	Documents on the status and trends of biodiversity Assist in identifying gaps in conservation monitoring.	Within an 18 mth period		

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.

Full title	Organizing institution	Dates	Number of participants	Sources of verification
JISD workshop	IOJ	Jan 2018	14	https://pbs.twimg.com/media/DeT5hETUQAAAehJ.png JISD Manual
Digitization Workshop	IOJ	Mar 2018	7	https://pbs.twimg.com/media/DeUAMh5VQAATDee.png See Appendix 3

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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 5.1 'Explanatory Notes'.

Implementation period start date and end date (dd/mm/yy) 11/09/18 – 15/02/19																			
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	**Notes**
Hiring of project manager		*	*	*	*	*	*	*											After a number of interviews, a Project Manager was selected and the contract signed April 17, 2018.
Project management (Hiring of project staff, monitoring, evaluating and reporting on project)			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
BID Regional Meeting and Capacity Enhancement workshop (Participation is mandatory)		*																	
Early Progress evaluation and Reporting					*	*													
Mid-term evaluation and reporting									*	*	*	*	*						
Project Partner Meetings	*						*		*										Project meeting scheduled for Nov 2017 was not held as a Project Manager had not yet been employed. Meeting held May 17, 2018
Digitization Training							*												Held March 2018
Digitization Documentation							*	*	*	*									Completed.
Darwin Core Training							*												

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Implementation period start date and end date (dd/mm/yy) 11/09/18 – 15/02/19																				
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	**Notes**
Purchase and Importation of Materials/IT items					*	*	*												See purchase order for PC Workstation – Dell (see Appendix 18 from Early Progress Report) Also invoices from Gravitas, Argos, Softek, Aero, and Jamaica Customs in Appendix 1
Image collation			*						*										Delayed but in progress.
Image selection									*	*	*								See list of images from the IOJ selected so far in Appendix 4
Hiring of Image Scanning Assistant										*	*								
Image scanning										*	*	*							
Creation of online image database											*	*	*						Interface designed.
Image annotation											*	*	*						
Online image publishing											*	*	*						
Configuration of JISD					*														Configuration completed, except for additional configuration of larger photographs.
IAS selection					*														
IAS Workshop Preparation				*	*														
IAS Workshop					*														
Adding coordinates to JISD					*														Targets met and process is ongoing.
Digitization Training						*													
Digitization of Biological Specimens and							*	*	*	*	*	*	*	*	*	*			Digitization of Biological Specimens is

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Implementation period start date and end date (dd/mm/yy) 11/09/18 – 15/02/19																			
Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	**Notes**
Publications																			ongoing. Digitization of Publications completed.
Digitization Documentation							*	*	*	*	*								Digitization Manual completed by NHM-UK
Preliminary Metadata Creation											*	*	*						In progress
Adding photos to NHMJ animal database								*	*	*	*	*	*	*	*	*			Delayed
Adding photos to NHMJ plant database								*	*	*	*	*	*	*	*				In progress
Adding digitized specimens to JVH														*	*				
Adding digitized publications to NHMJ library database										*	*	*							Not done
Production of distribution maps											*								Not done
Online publishing of maps											*	*	*						IT technical issues
Local publishing of metadata											*	*	*	*	*				
GBIF.org Access										*	*	*	*	*	*				
BIND Workshop														*	*				
Project Reporting								*	*					*	*	*	*		
Project Evaluation															*	*	*		

Evaluation period start date and end date (dd/mm/yy)				
Activity	1	2	3	**Notes**
<Activity name>				
<Activity name>				

4.1. Explanatory notes:

   a) There were challenges hiring a project manager and the process was delayed until April 17, 2018.

   b) Darwin Core Training occurred as part of the Digitization workshop.

   c) The Zoology department has had difficulties with digitization due to the wrong camera adapter being sent and also to the delayed delivery (May 29, 2018) of a computer for digitization and installation of required software, as well as the delayed delivery of a barcode reader thus resulting in a delay in digitization. At present their start and end dates will be determined by the date of arrival of the barcode scanner.   There are also issues with the Darwin Core based Museum software recommended by the NHM UK which have not been resolved and will require a subscription to receive support from the developers.

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5. Beneficiaries/affiliated entities and other cooperation

5.1. 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.

To date, all project partners have been engaged in the implementation of one or more project activities. NEPA assisted the IOJ with interviews for the project manager (2017) and documentation for the JISD Trainer. JCDT assisted the IOJ with interviews for the project manager in 2018. IOJ, NEPA and JCDT participated in the JISD Workshop. The Natural History Museum, UK has provided follow up digitization advice via Skype and e-mail and has prepared a Digitization manual for the IOJ.

5.2. 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) ?

Some of the flowering plants which will be digitized will be added to the Jamaica Virtual Herbarium at the University of the West Indies.

6. Visibility

Please refer to the BID guidelines.

6.1. Visibility of the BID project

How is the visibility of your BID project being ensured?

Short summary

Project visibility has been through advertisements for a Project Manager, through a Jamaica Clearing-House Mechanism electronic newsletter, through the JISD and Digitization workshops, and through post-event media releases of the JISD and Digitization Workshops on the Natural History Museum of Jamaica's Facebook and Twitter pages.

Sources of verification

- https://twitter.com/iloveNHMJ/status/1001207087215636480

- https://pbs.twimg.com/media/DeT5hETUQAAAehJ.png

- https://www.facebook.com/naturalhistorymuseumofjamaica/photos/pcb.2014867025212824/2014866498546210/?type=3

6.2. Visibility of the EU contribution

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

Short summary

Post-event media releases for the JISD and Digitization workshops on Facebook and Twitter.

Sources of verification

- https://twitter.com/iloveNHMJ/status/1001207087215636480

- https://pbs.twimg.com/media/DeT5hETUQAAAehJ.png

- https://www.facebook.com/naturalhistorymuseumofjamaica/photos/pcb.2014867025212824/2014866498546210/?type=3

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Signature _____

Name of the contact person for the BID Project: Suzanne Davis

Date report sent by email to GBIF Secretariat for pre-approval: July 31, 2018

APPENDIX 3

Jamaica Digitisation Training Workshop: 12th – 16th March 2018

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APPENDIX 4

Some Photos from the IOJ that are being Considered for the Image Database

Plants

1. *Lisianthus exsertus*
2. Bletia purpurea
3. White Lignum vitae
4. Drosera capillaris and Dionaea muscipula
5. Baobab tree
6. Lindsaea portoricensis
7. Melochia crenata
8. Stenocereus hystrix
9. Cocoloba uvifera
10. Sesuvium portulacastrum
11. Canavalia rosea
12. Ipomoea pescaprae
13. Leonotis nepetifolia
14. Opuntia
15. Govenia utriculata
16. Roystonea jamaicana
17. Zephyranthes carinata
18. Batis maritima
19. Clethra spp
20. Nepseia aquatica
21. Chrysobalanus icaco
22. Paspalum distichum
23. Fimbrisylis cmyosa
24. Alternanthera ficoides and Boerhavia erecta
25. Opuntia spinosissima
26. Leucaena leucocephala
27. Calotropis procera
28. Euphorbia punicea
29. Hohenbergia spinulosia and urbaniana
30. Passiflora oblongata
31. Euphorbia leucocephala
32. Lisianthus exsertus
33. Passiflora and Doctor bird (hummingbird)
34. Nun's Hood Orchid

Animals

1. Megalobulimulus oblangus aka Strophocheilus oblongus
2. Telebasis dominicanum
3. Cyclura collie
4. Dragonfly
5. Erythrodiplax umbrata
6. Spotted Sandpiper
7. Immature white Ibis

Ecosystems

1. Hillside degradation of forest which has been replaced with pine trees and bamboo
2. Salina, Palisadoes
3. Alligator Hole River – swamps and round hill in background

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APPENDIX 5

Criteria for Selection of Images

I   Criteria for selection of images
Images must have been donated
Images older than 70 years can be used (copyright expired)
Terrestrial or Aquatic organisms and ecosystems
Images for which permission can be obtained

Images to be selected should have the following:
    a.   Scientific name/Ecosystem name
    b.   Location – Parish only
    c.   Date – year
    d.   Photo credit (if available)

Colour or black and white photos/slides
No images of animals in captivity, images should be of species in the wild
Natural or disturbed ecosystems can be used
Images of invasive species can be selected

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APPENDIX 6

Data Exports from the Zoology Database Showing Families, Genera and Species Entered

Family entered

Family
Acrididae
Alcedinidae
Anatidae
Apodidae
Apterygidae
Aramidae
Arctiidae
Ardeidae
Blaberidae
Blattidae
Boidae
Caprimulgidae
Capromyidae
Carabidae
Cardinalidae
Cathartidae
Charadriidae
Cheloniidae
Coerebidae
Columbidae
Corvidae
Cotingidae
Crambidae
Crocodylidae
Ctenuchidae
Cuculidae
Dactyloidae
Diploglossidae
Dipsadidae
Dryophthoridae
Ectobiidae
Emberizidae
Emydidae
Estrildidae
Eumastacidae
Euteliidae
Falconidae
Fregatidae
Fringillidae
Gelechiidae
Geometridae
Gryllacrididae
Gryllidae

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APPENDIX 7

**Data Exports from the Botany Database Showing Families, Genera and Species
Entered**

Families entered

Family
Acoraceae
Alismataceae
Alliaceae
Alstroemeriaceae
Amaryllidaceae
Anarthriaceae
Anthericaceae
Aponogetonaceae
Araceae
Arecaceae
Asparagaceae
Asparagales
Asphodelaceae
Asteliaceae
Asteraceae
Beaniaceae
Blandfordiaceae
Boryaceae
Bromeliaceae
Burmanniaceae
Butomaceae
Calamitaceae
Calamostachyaceae
Campynemataceae
Cannaceae
Centrolepidaceae
Colchicaceae
Commelinaceae
Convallariaceae
Corsiaceae
Costaceae
Cycadaceae
Cyclanthaceae
Cymodoceaceae
Cyperaceae
Dasypogonaceae
Dioscoreaceae
Doryanthaceae
Ecdeiocoleaceae
Elaeoecarpaceae
Equisetaceae
Eriocaulaceae
Euphorbiaceae

APPENDIX 8

List of Maps Created in the GIS and Metadata Workshop

Maps created during the GIS and Metadata Workshop were:

1. Biodiversity Research in Protected Areas 2010 – 2015
2. *Miconia* Research in Jamaica 2010 – 2015
3. Research in the Blue and John Crow Mountains National Park 2010 – 2015

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APPENDIX 9

Course Outline for the GIS and Metadata Workshop

Land Information Council of Jamaica

"GIS & Metadata" workshop

OUTLINE

Course Objectives

To provide participants with basic GIS concepts and principles for use in biodiversity, natural resource management and decision making. Participants will develop a working knowledge of the main functionalities of the ArcGIS Desktop 10.3/10.4 GIS software package, inclusive of the common desktop applications. Practical GIS skills will be developed to add, symbolize, label and manipulate geospatial data, in addition to performing basic spatial queries, and producing high quality maps. Further practical skills will be developed to convert excel sheets comprising geographic coordinates to spatial data layers, in addition to the creation of geodatabase and feature classes and maintenance of metadata for spatial data.

Course Duration

Sixteen (16) hour course offered over two days, between 9:00 am and 4:30 pm daily.

Teaching Method
- Lectures
- Demos
- Discussions
- Demonstrations
- Practical Exercises

Course Materials
- Course Lecture Manual
- Course Workbook

GIS Software

ESRI ArcGIS 10.x Desktop applications

Target Group

Professionals having no or limited prior GIS knowledge.

Course Prerequisites

Basic understanding of Geography, Information Technology (use of computers) and field experience / some on-the- job exposure to GIS.

DAILY OUTLINE

Day 1

✓ *Welcome, Introduction and Icebreaking Session*
- Overview of the NSDMD & LICJ
- Introduction to the Training Team
- Introduction of Training participants
- Icebreaking Activities

✓ *Introduction to Geographical Information Systems*
- What is GIS ?
- GIS Components
- GIS and Geography
- GIS Process
- Why GIS Matters ?
- Areas of Application
- How GIS Works
- Lesson Review

✓ *Exploring ArcGIS*
- Who / What is ESRI ?
- Overview of ArcGIS
- ArcGIS System and Desktop Applications
- Common Desktop Applications: ArcCatalog, ArcToolbox, ArcMap

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- Getting Help in ArcGIS
- Lesson Review

✓ *Working in ArcCatalog*
- ArcCatalog Function
- ArcCatalog Interface
- Connecting to folders
- Managing Data principles
- Examining the Geodatabase content
- Methods of Viewing Data
- Examining Data Properties
- Viewing and updating Metadata
- Lesson Review

➢ *Exercise 1: Exploring ArcCatalog*

✓ *Displaying Data in ArcMap*
- ArcMap Function
- ArcGIS Interface
- ArcMap Interface and Tools
- Data and Layout View
- Layers, Data frames and Map Elements
- Managing the Table of Contents
- Navigating Around the Map
- Magnifier, Viewer and Overview windows
- Changing Symbol Properties
- Layer Symbology
- Labelling Features
- Displaying Qualitative and Quantitative data
- Creating a Definition Query
- Scale Dependent Display
- Catalog Widow
- Search Options
- Lesson Review

➢ *Exercise 2: Displaying and Querying in ArcMap*

✓ *Arc Toolbox*
- Accessing ArcToolbox
- Organization of ArcToolbox
- Geoprocessing Tools
- Lesson Review

✓ *Working with Data - Spatial and Attribute*
- Accessing attribute data
- Attribute table properties
- Attribute table features
- Selecting features
- Viewing attribute data
- Table manipulation
- Creating graphs
- Creating reports
- Lesson Review

✓ *Querying the Geodatabase*
- Identifying Features
- Finding Features
- Measuring Features
- Selection tools, layers and methods
- Lesson Review

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✓ Introducing Spatial Analysis
   • GIS Analysis Functions
   • Analysis Operations: Buffering, Clipping, Overlaying
   • Lesson Review

➤ Exercise 3: Introduction to Spatial Analysis in ArcGIS

✓ Metadata Explored
   • What is Metadata
   • Importance of Metadata
   • Benefits of Metadata
   • Metadata Tools
   • Core Metadata Elements
   • Lesson Review

➤ Exercise 4: Metadata in ArcCatalog

✓ Presenting Data
   • Basic cartographic concepts
   • Creating maps in ArcMap
   • Printing and plotting maps
   • Lesson Review

➤ Exercise 5: Introduction to Mapmaking in ArcGIS

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