



REPORT
on
DATA MANAGEMENT TRAINING
September 7th – 11th 2015

Nassau, New Providence

The Bahamas

Held: Synergy Bahamas,

Shirley Street, Nassau, N.P., The Bahamas

The training is financially supported by the 10th European Development Fund
through the BIOPAMA programme.



1. Training Objectives

The purpose for engaging in this data management training was primarily to increase our local technical capacity with using GIS technology as it relates to the Forestry Sector. The premise was that the skill would be transferred on proper data management on providing relevant information on ecosystem biodiversity, direct/indirect pressures, anthropogenic threats, mitigation of landscape fragmentation and monitoring conservation effectiveness.

All participants will obtain practical experience in the following areas:

- review of ArcGIS and GPS systems;
- Introduction to database design incl. concepts, methods, various software formats (MS Excel/Access, ArcCatalog);
- Introduction database management protocols: maintenance schedules, methods, standards;
- Introduction to database design and protocols.

The training was held in the framework of the Biodiversity and Protected Areas Management (Programme) in the Caribbean. BIOPAMA is an initiative of the ACP Group and financed by European Union's 10th EDF.

2. Hardware and software used during training

- The hardware that was used during the training were Dell systems
- The Global Positioning System Unites used during the training were Trimble Explorer XM 2005 series.
- The software used during the training was ArcGIS 10.2. demo licenses (including ArcCatalog and ArcMap)

3. Summary of presentations/lectures and exercises

Day	Morning	Afternoon
Monday	<ul style="list-style-type: none">• Presentation IUCN• Introduction to hardware and software• (re)familiarize with hardware and software	FIELD Proposed conservation forest Carmichael South <ul style="list-style-type: none">• Mapping effects of prescribed burn

Tuesday	<ul style="list-style-type: none"> Lecture Spatial data and Databases Exercises databases and SQL Exercise design (geo)database 	FIELD Proposed forest reserve Coral Harbour West <ul style="list-style-type: none"> Collecting field data for forest inventory
Wednesday	<ul style="list-style-type: none"> Processing and analyzing data for management decisions (continuation of the Tuesday afternoon session) 	<ul style="list-style-type: none"> Lecture Quality Assurance and Quality Control (QA/QC) Evaluation of BNGIS protocols Exercise validation of boundaries proposed conservation forest Corry Sound
Thursday	<ul style="list-style-type: none"> Exercise design geodatabase Exercise data collection: digitizing and georeferencing recreational infrastructure and facilities 	FIELD National Park Harrold and Wilson Ponds <ul style="list-style-type: none"> Ground truthing created dataset
Friday	<ul style="list-style-type: none"> Lecture and demo data sharing and publishing Exercises data sharing and publishing 	<ul style="list-style-type: none"> Presentation of exercises Evaluation training program

4. Table with GIS datasets used during the training workshop

No.	Name of Dataset	Type of Dataset
1	Demo	Point
2	After Burn Assessment	Line
3	Fire breaks	Line
4	Proposed Forest Reserve Coral Harbour West	Polygon
5	Sample plots	Polygon
6	Trees	Points
7	Corry Sound	polygon
8	National Park Harrold and Wilson Ponds	Raster dataset

5. List of participants

Number	Agency	Name	Position
1	Forestry Unit	Arien Sikken	Consultant/Trainer
2	Forestry Unit	Danielle Hanek	Forest Officer
3	Forestry Unit	Latonya Williams	Forest Assistant 1
4	Forestry Unit	Wavell Hanna	Forest Supervisor 1
5	Forestry Unit	Terrance Rodgers	Forest Supervisor 1
6	Forestry Unit	Kurt Cunningham	Intern
7	WSC	Hugo Andrews	GIS Analyst
8	BNT	Agnessa Lundy	
9	BNT	Scott Johnson	Warden
10	BNT	Cameron Saunders	Warden
11	Forestry Unit	Christopher Russell	Director
12	IUCN BIOPAMA	IUCN Representative	Jason Williams

6. Training agenda

Monday 7th September 2015

Morning Session

- 9:00 AM Workshop opening and introduction to training program
- 9:15 AM IUCN presentation
- 10:00 AM Overview GIS software and hardware that will be used in training
- 10:15 AM ArcGIS functionality exercises
- 11:00 AM Instructions on the use of GIS/GPS
- 11:45 AM Working Lunch

Afternoon Session

- 12:15 PM Transfer to field site Carmichael South (proposed conservation forest)
- 1:45 PM Assessment of prescribed burn site
- 3:00 PM Transfer to training center
- 4:00 PM Presentation and discussion of collected field data
- 5:00 PM End of training activities

Tuesday 8th September 2015

Morning Session

- 9:00 AM Lecture spatial data and databases
- 9:30 AM Exercises DBMS, (geo)database design and SQL queries
- 10:00 AM (Geo)database design

- 11:45 AM Working Lunch
12:15 PM Transfer to field site Coral Harbour West (proposed forest reserve)

Afternoon Session

- 1:45 PM Mapping tree characteristics in permanent sample plots
3:00 PM Transfer to training center
4:00 PM Processing of collected field data
5:00 PM End of training activities

Wednesday 9th September 2015

Morning Session

- 9:00 AM Continuation of Tuesday's afternoon session
11:45 AM Working Lunch

Afternoon Session

- 12:15 PM Presentation of outcomes by each group and discussion/comparison
1:30 PM Lecture quality assurance and quality control
2:00 PM Exercise: Validation of boundaries of proposed conservation forest Corry Sound
4:00 PM Presentation and discussion exercise
5:00 PM End of training activities

Thursday 10th September 2015

Morning Session

- 9:00 AM Design of geodatabase
10:00 AM Exercises data collection (digitizing, georeferencing, conversion between data formats)
11:45 AM Working Lunch
12:15 PM Transfer to field site Harrold and Wilson Ponds (BNT National Park)

Afternoon Session

- 1:45 PM Ground truthing and mapping exercises in Harrold and Wilson Ponds
3:00 PM Transfer to training center
4:00 PM Presentation and discussion of collected field data
5:00 PM End of training activities

Friday 11th September 2015

Morning Session

- 9:00 AM Lecture and demonstration data sharing and publishing
10:00 AM Exercises related to data exchange and sharing
11:45 AM Working Lunch

Afternoon Session

- 12:15 PM Finishing and presentation of exercises

3:30 PM Evaluation of data management training
5:00 PM End of training activities

8. Workshop evaluation results

Workshop Evaluation Form

Evaluation Questions	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
A. PREPARATION AND COURSE DELIVERY					
Workshop objectives were clear to me prior to my attendance.	4	3	1	1	
Logistics for the workshop were well executed.	4	5			
Workshop content was organized & easy to follow.	2	5	1	1	
Workshop provided sufficient opportunity for inter-active participation.	7	2			
Materials distributed were pertinent and pitched at the right level.	6	3			
Workshop provided sufficient time to cover all proposed activities.	4	1	2	2	
B. FACILITATOR/MODERATOR					
Facilitator provided proper guidance and clear instructions.	2	7			
Facilitator was/were well prepared for the workshop.	6	3			
Facilitator encouraged active participation and ownership of expected workshop outputs.	7	2			
C. GENERAL SATISFACTION					
Workshop objectives were met.	5	4			
Learned a lot of new concepts and tools.	6	3			
Satisfied with my increased understanding of the topic.	3	5		1	
Definitely will help me make a difference in the way I do my job.	6	2	1		
Design of workshop facilitated exchange of information/knowledge amongst participants.	6	2	1		

D. Please rank the usefulness to your work at your institution of the following topics that you were taught during the workshop. Select a number from 1 to 4 representing your opinion below each topic. If you did not have one of the topics, please select "NA" for "Not applicable".

Evaluation Workshop	Not useful at all	Not useful	Useful	Highly useful	Not Applicable
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	1	2	3	4	N/A
Field data collection and management (field template development, workflow)			4	5	
Database design and development (relational database fundamentals)			4	5	
Quality assurance and quality control			4	5	
Data storage and security			5	4	
Data documentation (metadata)			5	4	
Access to data / information exchange			3	6	

E. What is your biggest challenge involving data management?

- a) Some of the challenges include (i) technical challenges in terms of physical storage of the data, (ii) the integrity of the data collected and updating schedules (iii) accessibility to current/updated data
- b) My biggest challenge was not knowing how to master Data Management Training.
- c) Lack of Equipment to collect and manage data and limited understanding in the organization about how to incorporate GIS in projects.
- d) Using Advanced Geo-database functions that cannot be readily activated from the toolbar.
- e) I will have a challenge practicing the skills that I learned in the training because I do not have ready access to the handheld and computer software used to facilitate the training.
- f) I struggled with navigating through the software to get to the appropriate tools.
- g) My biggest challenge to data management is being able to process and load all data that has been collected or created within a specific time frame that allows the data to be readily available for anyone who needs to use it.
- h) Not really a challenge, but I wish to take this Training to another level. Perhaps do a PT. 2.
- i) My biggest challenge is or was the time to use the GIS program and apply

F. Give an example of what you will do differently in your work/practice setting as a result of this workshop?

- a) The maps and pin pointing plots
- b) thanks to the workshop, I will use the standards for metadata, as well as proper data collection methods
- c) Work more diligently and precisely in my data collection and geodatabase creation and maintenance.
- d) I understand Quality Assurance, so I will be able to validate datasets to confirm whether or not they suit my purpose.
- e) Attempt to incorporate proper data collection in projects
- f) The workshop has allowed me to acquire the skills to apply real imagery with GPS coordinates allowing accuracy in field information and gives me the edge of digitally controlling my work/project environment to plan outcomes and changes as i wish. Its manipulative properties give a great

advantage in Quality Control and assurance pertaining to work projects and other important data to be documented and or presented.

- g) I will try to gather as much information on a day to day basis of my patrols and improve on digitally recording a daily log. This will help my organization to have records of the field experience that I would receive from the field.
- h) I will now be able to document and provide maps for my colleagues.
- i) It was an eye opening experience that gave me a better understanding of how GIS works. I can't really say as I need more practice.

G. What aspects of the workshop could be improved and how?

- a) I feel as if more one on one training is needed, therefore I was recently reintroduce to (GIS).
- b) Better information sharing prior to the workshop.
- c) The only thing that i feel could have been improved is the GPS equipment to more updated versions.
- d) The workshop could have involved a little deeper explanation of the specific forestry terms that were used. Also, the GIS software terms used were above our beginner level. The presenter could recommend an online tutorial that is felt would compliment the planned lessons.
- e) Due to weather challenges, the field portions were reduced. It there was a possibility to have a back-up venue or rain gear to complete the field portions to obtain enough practice opportunities
- f) It would have been great if we had representatives from other agencies, to see get some understanding of their data collection methods.
- g) The time given
- h) I think the syllabus could have more step by step information and more pics of tools to click on.
- i) Definetly the gps devices and the software needs to be updated and designed with the user(s) needs in mind.

H. Other remarks?

- a) Personally there is a need for more training within (GIS) training Data Management. Hopefully this training will continue in the future.
- b) If time would have allowed to further increase database management techniques using Excel or ArcCatalog.
- c) The training was conducted with a comfortable learning environment and fully exposed participants to the elements they may encounter as they participate in activities that would require such training...Fun and informative the way learning should be!
- d) Overall the workshop was indeed helpful and I feel I have a firmer grip on GIS data management.
- e) Really enjoyed this training, I gained valuable information, that I'm sure will be used in the coming days.
- f) It was a great learning workshop
- g) Nice workshop just requires more practice.

9. Pictures: Presentation of Certificates to participants:

On the final day, Mr. Jason Williams, Technical Officer under the BIOPAMA Programme (left of photos) and Director Christopher Russell of the Forestry Unit (on right) presented all participants with a certificate of participation. All participants were photographed except for Scott Johnson, who left early for previously scheduled for work travel.



Kirk Cunningham



Hugo Andrews



Terrance Rodgers



Wavell Hanna



Agnessa Lundy



Cameron Saunders



Latonya Williams



Danielle Hanek-Culmer

10. Conclusions

The main focus of the training was Natural Forest Resource Management. The Forestry Unit in The Bahamas was commissioned to ensure that the forest resources in the country are sustainably managed. They are now in the process of defining and creating a Natural Forest Estate with the intention of protecting the forest resources. In order to accomplish this they needed to have their staff trained in forest data collection and analysis.

Throughout the training, the participants engaged in field data collection. On the first day they visited Carmichael South, a proposed forest conservation area, where they mapped a prescribed burnt area. On the second day they went to Coral Harbour West, a proposed forest reserve area, where they collected field data for forest inventory. On the final day of field work they visited Harold and Wilson National Park to ground-truth some existing datasets.

In the next few months the Forestry Unit will be implementing a GEF full-size project and one of the main outcomes of that project is the actual establishment of the National Forest Estate. The data management training (DMT) helped to complement the work that they are doing related to protected area management in the country.

Thanks to the DMT, cross sectional agencies openly dialogued about ongoing activities and conservation efforts in their respective fields, which eventually provided linkages to biodiversity and conservation.

The DMT workshop was a learning experience on logistics and technical issues associated with the successful implementation. These experiences range from moving

between field and classroom sites within timelines, equipment or software glitches, uncooperative weather conditions for field work or simply having too much fun on an exercise resulting in limited time. Despite all of this, it is the goal that our agencies will continue to increase our technical capacity and cross-sector knowledge with the hopes to sustain the conservation efforts in The Bahamas.

ANNEX 1:

Workshop Evaluation Form

Evaluation Questions	Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
I. PREPARATION AND COURSE DELIVERY					
Workshop objectives were clear to me prior to my attendance.					
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Workshop content was organized & easy to follow.					
Workshop provided sufficient opportunity for inter-active participation.					
Materials distributed were pertinent and pitched at the right level.					
Workshop provided sufficient time to cover all proposed activities.					
J. FACILITATOR/MODERATOR					
Facilitator provided proper guidance and clear instructions.					
Facilitator was/were well prepared for the workshop.					
Facilitator encouraged active participation and ownership of expected workshop outputs.					
K. GENERAL SATISFACTION					
Workshop objectives were met.					
Learned a lot of new concepts and tools.					
Satisfied with my increased understanding of the topic.					
Definitely will help me make a difference in the way I do my job.					
Design of workshop facilitated exchange of information/knowledge amongst participants.					

L. Please rank the usefulness to your work at your institution of the following topics that you were taught during the workshop. Select a number from 1 to 4 representing your opinion below each topic. If you did not have one of the topics, please select "NA" for "Not applicable".

- _____ Field data collection and management (field template development, workflow)
- _____ Database design and development (relational database fundamentals)
- _____ Quality assurance and quality control
- _____ Data storage and security

_____ Data documentation (metadata)
_____ Access to data / information exchange

1 = Not useful at all

2 = Not useful

3 = Useful

4 = Highly useful

NA = Not applicable

M. What is your biggest challenge involving data management?

N. Give an example of what you will do differently in your work/practice setting as a result of this workshop?

O. What aspects of the workshop could be improved and how?

P. Other remarks?