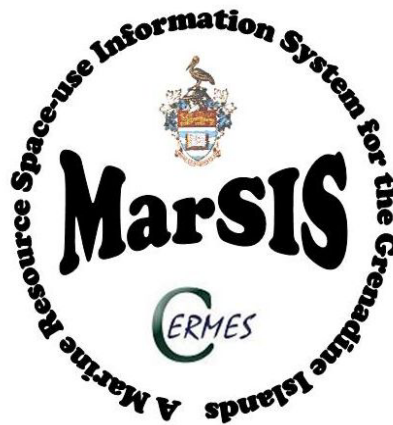


A Summary Report
of the

***Stakeholder Evaluation Workshops
of the Grenadines MarSIS Research
(Process and Product)***



St. Vincent, Union Island and Grenada Workshops

November 9 – 12, 2009

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Citation for this report:

Baldwin, K. 2009. Summary report of the evaluation workshops for the 'Grenadines MarSIS' PhD research. November 9-12, 2009. MarSIS Stakeholder Summary Report. University of the West Indies, Cave Hill. 19 pp.

RESEARCH RATIONALE

Marine resources (including fishing and marine-based tourism) are of vital importance to the people of the Grenadine Islands. A greater understanding of the abundance and distribution of key marine resources, marine resource users and the patterns of use is critical to planning and the sustainable use of the coastal resources of the Grenadines. Effective coastal resource management must balance the sustainable use, resource protection and conservation within the communities' need for food security, livelihood and equitable use of resources. Therefore, multi-sectoral collaboration and strong community participation are required to successfully maximise management efforts.

As such, the Grenadines Marine Resource and Space-use Information System (MarSIS) research began in 2005 and has been collaboratively developed to integrate social, economic, political, cultural and biophysical marine resource information in a single GIS framework to aid effective coastal resource management and sustainable livelihoods. By taking a participatory research approach, including the social frame of reference and local ecological knowledge together with a conventional scientific methodology, it is envisioned that important information gaps can be filled, potential problems can be identified and management priorities focused accordingly. Furthermore, involving a range of stakeholders in the information gathering and research processes allows for a more transparent framework for management and decision making by meaningfully including and considering all sectoral and community interests.

SUMMARY OF WORKSHOPS

A series of three one-day workshops were held in the islands of St. Vincent, Union and Grenada during the week of November 9-12, 2009 (Workshop agenda can be found in Appendix I). These workshops were hosted on behalf of the University of the West Indies, Cave Hill Campus in order to share and review the research activities and key findings with a variety of stakeholders involved in the research. Furthermore, these workshops allowed a variety of stakeholders to get a 'hands-on' opportunity to use the Grenadines Marine Resource and Space Use Information System (MarSIS) using either an ArcGIS or Google Earth interface. Training in the use of Google Earth was also provided in order to enable stakeholders to fully participate in the practical application of using MarSIS as a planning, management and decision-making tool. Moreover, these workshops were used to obtain stakeholder evaluation of the research methods employed and assess the practical usefulness of the MarSIS product.

All three workshops were well attended by a wide variety of marine-related government agencies, local NGOs or groups and members of the Grenadine community involved in the research. A total of 55 participants (25 Grenadian and 30 Vincentian) attended the workshops emanating from 23 different agencies or groups. Of the 55 participants, 30 persons represented government agencies, 14 were from the Grenadines community and 11 from local NGOs. This allowed for a range of stakeholders to evaluate the participatory research methods employed as well as obtain feedback on the usefulness of the MarSIS product before the final release of the

information system to the public via the website. Appendix II lists the participants which attended the three workshops.

REVIEW OF MARSIS RESEARCH ACTIVITIES & TIMEFRAME

To start, workshop participants were given a series of presentations summarising the Grenadines MarSIS research as well as showcasing the power of the MarSIS as a GIS and its' applications for planning, management and decision-making tool for a variety of disciplines and scenarios. An outline of research activities is listed below.

1. Background and Data Scoping (2005)
 - a. Overview of Study Area
 - b. Review of Current Management, Resources and Related Issues
 - c. Initial Development of Research Problem/Question
2. Existing Secondary Data Collection/Compilation/Review (2005 – 2006)
 - a. Hard-Copy: Marine research, management plans, environmental legislation
 - b. GIS datasets: Global, Regional, National
 - c. Maps: Topographic and Nautical
 - d. Socio-economic & Census Information
 - e. Stakeholder information surveys
3. Review of GIS (2005 – 2006)
 - a. Information integration
 - b. Applications in Natural Resource Management
 - c. Applications in Marine Space Use /Planning
4. Review of Participatory Research Methodologies (2005 – 2006)
5. Data Scoping & Stakeholder Identification/Assessment Exercises (2006)
 - a. Formal Government Meetings
 - b. Key Informant Interviews & Information Exchange
 - c. Observation/Informal Conversations for each Island
6. Development of Research Question - Research Proposal (2006 – 2007)
 - a. Marine Resource User Inventory
 - b. Socio-Economic Profiles
 - c. Environmental Profiles
 - d. Space-use Profiles
 - i. Fishers
 - ii. Water-taxis
 - iii. Dive Shops
 - iv. Ships / Ferries
 - v. Yachts
 - vi. Day Tours
7. Geodatabase Structural Design & Compilation (2006 – 2009)
 - a. ArcGIS training
 - b. Database design/development
 - c. Compilation, review & evaluation of existing GIS datasets
 - d. Production of metadata

- e. Standardisation of existing GIS data
 - f. Identify data gaps
8. Development of Benthic Classification Schemes & Habitat Mapping (2007 – 2009)
 - a. Inventory/research existing habitat schemes
 - b. Develop MarSIS scientific classification scheme w/ govt. decision-makers
 - i. Remote Sensing - Initial Habitat Map Creation
 - c. Validation of Habitat Maps (w/ fishers & divers marine resource users)
 - i. Classification scheme development
 1. Learning Exercises & Habitat Flashcards
 - ii. Local Knowledge Mapping Exercises of critical areas
 - iii. Explore local knowledge of Grenada Bank (deep waters)
 9. Review & Evaluation of Geodatabase, Participatory Research & Implementation (2009)
 - a. Stakeholder workshops in St. Vincent & Grenada
 - i. Additional Data Collection for Information Gaps
 - ii. Identify Stakeholder Capacity and Application Needs of Geodatabase
 - iii. Plan for Sustainability of MarSIS (post-research)
 10. Marine Habitat Model Development – Research Cruise (August 2009)
 - a. Deep Water Grenada Bank Modelling - 1 km² Grid & Drop-Camera
 - b. Shallow Habitats – Conventional ground-truthing via diving
 - c. Local Knowledge of Fishing Grounds (type, quality & gear)
 11. Final Data Validation Exercises (September 2009)
 - a. Additional Local Knowledge & Space-use Patterns
 - b. Fill in Remaining Information Gaps (scientific & local knowledge)
 - c. Stakeholder Validation of Local Knowledge Datasets
 12. Finalise Geodatabase & GIS Analyses (October 2009)
 - a. Between Marine Resource Users
 - b. Scientific & Local Knowledge
 - c. Between Islands & Countries
 - d. Evaluation of existing MPAs/Conservation Areas
 13. Stakeholder Evaluation Workshops & Surveys (November 2009)
 - a. Geodatabase – ArcGIS & Google Earth
 - b. Participation / Methods
 14. Website Launch – February 2010
 - a. Release of ArcGIS & Google Earth MarSIS files
 - b. Download of Grenadines E Library, Videos, Pictures and Atlases
 - c. Training workshops for Grenadine Communities
 15. PhD Dissertation - 2010
 - a. Recommendations for further research
 - b. MarSIS Maintenance Schedule
 - c. Four Primary Scientific Journal Publications
 - i. *Stakeholder Engagement*
 - ii. *Benthic Habitat Map Development*
 - iii. *GIS Analyses for Marine Planning & Decision-making*

iv. *Governance & Marine Policy Implications*

A list of the contents of the MarSIS geodatabase was distributed and is listed as Appendix III. Appendix IV provides a list of all written reports produced in relation to the MarSIS research thus far.

GIS APPLICATIONS OF MARSIS GEODATABASE

Next general GIS concepts and considerations were summarised for stakeholders before they were introduced to the MarSIS ArcGIS database through a guided software demonstration. Many practical applications of MarSIS as a planning, management and decision making tool were shown to stakeholders using a variety of examples ranging from fisheries, tourism, climate change mitigation, health, physical planning and potential development opportunities. Furthermore the power of utilising GIS database in the production of tables, querying information and modelling using Grenadines MarSIS data was also shown during this demonstration.

GOOGLE EARTH TRAINING SESSION

As requested by stakeholders in the March 2009 workshops, application of the MarSIS using a Google Earth interface was the preferred means of data access (See Baldwin, K. March 2009 Workshop Summary Report). As such, CERMES solicited the assistance of Fulbright scholar Ms. Meg Stewart, a geospatial technologist from Vassar College, to assist the research in terms of providing technical assistance with the conversion of the MarSIS ArcGIS geodatabase into Google Earth .KMZ files.

Ms. Meg Stewart gave workshop participants a brief Google Earth demonstration training session (Appendix V summarises the topics reviewed). She also gave participants a URL to a Google Earth training tutorial she had previously developed at Vassar (<http://gisatvassar.blogspot.com/2007/10/google-earth-lunchtime-demonstration.html>) so they could review tutorial materials after the workshop if they desired. To conclude this demonstration, the Grenadines MarSIS dataset (in Google Earth) was showcased to the stakeholders.

After this demonstration, stakeholders (either individually or in pairs) were given a hands-on opportunity to use the Google Earth application to explore the Grenadines MarSIS dataset. Stakeholders were guided through a number of structured exercises (see Appendix V) that were designed to utilise the skills taught in the previous demonstration as well as to allow the stakeholder to individually explore areas of interest within the MarSIS dataset. Moreover participants used the MarSIS .KMZ (Google Earth technology) to try to answer a variety of environmental management scenarios, create their own .jpeg maps as well as .KMZ files and email these to themselves and colleagues. Participants were given approximately an hour and a half to explore the datasets and complete the practical exercises. During this time, the two geospatial technologists worked one on one with stakeholders to assist them in familiarising themselves to the Google Earth software and the Grenadines MarSIS .KMZ dataset.

STAKEHOLDER EVALUATION FEEDBACK

Both oral and written evaluation techniques were utilised to obtain feedback on a range of topics from stakeholders at the workshops.

FOCUS GROUP DISCUSSION

Using an oral focus group discussion format, stakeholders were questioned throughout the day on the overall usefulness of: the MarSIS Google Earth product in terms of design and layout, mistakes found the dataset as well as any suggestions to improve the final product; the Google Earth demonstration and exercises given as well as any ideas in relation to future community training workshops. In addition, participants were questioned on their ideas for the MarSIS website content as well as suggestions on desired 'end-products' emanating from the research as well as a brainstorm of ideas for wider public accessibility to the MarSIS information.

Workshop participants gave very positive feedback to the practical nature of the hands-on training and associated exercises which were developed. Many were surprised that after a short period of time how easy the Google Earth application was mastered even by those whom claim not 'to really use computers much'. Many persons were very impressed with the low amount of technical expertise which was required to successfully access the information and create their own maps with the MarSIS dataset. In all of the workshops, participants requested that additional training be provided for other interested persons (including government agencies, schools and communities) to be trained in a similar type of workshop.

WRITTEN SURVEY INSTRUMENT

In conclusion, participants were asked to complete a survey (Appendix VI) which evaluated the process of using participatory techniques and information communication and exchange mechanisms throughout the research. Key questions were asked in relation to the application of PGIS principles in both the process and the development of the final product the Grenadines MarSIS.

STAKEHOLDER FEEDBACK SURVEY RESULTS

A total of 43 of the 55 participants completed the four page evaluation survey. Of those who completed the survey, 23 were government, 11 were community and 9 consisted of NGO stakeholders.

One hundred percent of respondents believe that the MarSIS will be of use for their work in regards to integration and access to information thus allowing for more informed decision-making in regards to the management and planning of coastal and marine resources. All stakeholders agreed that the MarSIS was what they had anticipated it to be after hearing about it and all believe that the types of information within MarSIS were easy to understand and meaningful to them. There was unanimous agreement from stakeholder about the usefulness of including local knowledge to the dataset. As such everyone surveyed agreed that MarSIS will be a good educational resource which highlights the importance of the sea to the people of the

Grenadines and can therefore be used to better understand the marine environment in order to better inform decision-making, prioritise management decisions and be used to plan more sustainable development in the Grenadines. Fifty-three percent of respondents believe that government and 21 percent believe that NGOs will use this information system the most.

In terms of using Google Earth as a platform for dissemination of MarSIS information to the wider public only 14% (6 respondents) believe that it will be too technical a format for most people to use. Similarly, only 1 respondent thought that the objectives of the research were not developed appropriately to meet local needs. Again, 84% believe that Google Earth is the appropriate technology to be used for the local technological capacity.

All respondents reported that the research was conducted in a clear and open manner, that a wide range of stakeholders were included in the research and that care was taken to validate the datasets and incorporate local feedback into the research methods employed. Furthermore, all stakeholders agreed that the compilation of MarSIS was a collaborative effort and 70% feel a sense of ownership in the final product.

In terms of the use of communication and information exchange mechanisms employed throughout the research, stakeholders preferred the use of summary meetings and email the most. Hard-copy reports were the third most preferred format followed by the MarSIS website in which 60% of stakeholders visited and thought a useful communication tool. Half of respondents reported to think that personal visits were useful aspect of information exchange and enjoyed the distribution of informational CDs and hard-copy maps. Likewise 22 of the 23 respondents whom reported to assist in the validation of datasets believe that this was a worthwhile exercise. The use of the MarSIS BLOG was the least utilised mechanism for communication although its users felt it was a useful tool.

Everyone surveyed agreed that the process of participating in this research taught them new approaches to using participation increased their knowledge of the marine environment as well skills in the use of technology. As such, 98% of stakeholders surveyed report that effort of participation in this research was worth their time.

CONCLUSION

All of the workshops were considered to be a great success. Stakeholders strongly agreed that the research methods were carried out in an open and transparent fashion and developed collaboratively with stakeholders in a manner appropriate for the local context, capacity and needs. Furthermore, the vast majority of survey respondents feel a sense of ownership in the process and final product of this MarSIS information system. All involved reported that the process of participation was a learning experience in terms of participation, acquiring new skills and technology was well as provided a better understanding of the marine environment. This does not ignore the fact that more training in both Google Earth and ArcGIS are requested by stakeholders and is truly needed in order to allow for wider dissemination of MarSIS information to the general public. Furthermore, stakeholder feedback will be incorporated in order to modify and create the most suitable Grenadines MarSIS Google Earth end product.

Many stakeholders also mentioned the serious consideration that must be given to a maintenance schedule for this unique information system and a plan to provide for the future sustainability of the MarSIS project beyond the life of the PhD research. Suggestions for these considerations will be included in the PhD dissertation.

ACKNOWLEDGEMENTS

I gratefully acknowledge the support of the University of the West Indies Graduate Studies Research Awards for providing financial assistance in order to hold these final evaluation workshops. Moreover, thanks must be given to the hundreds of people who lent their time and support in the collaborative development of this Grenadines MarSIS. Many thanks to Meg Stewart for joining me on this trip and providing her technical assistance in preparing the data in Google Earth as well as with the workshops. In particular I'd like to extend a special thanks to the Sustainable Grenadines Project for identifying the need for this research as well as assisting in many ways to the research thus making the success of this project possible. Last but definitely not least, I'd like to extend much gratitude and thanks to all of my academic advisors (Prof. Robin Mahon, Prof. Hazel Oxenford and Dr. Patrick McConney) whose guidance since 2005 on the many aspects of this truly multi-disciplinary research will not be forgot. Without the support and encouragement of all of these people and my loving family none of this research would have been possible. Thank you – it has been a truly rewarding experience!

APPENDICIES

Appendix I. Workshop Agenda

Workshop Agenda

- | | |
|-------|--|
| 9:00 | Welcome and Introductions |
| 9:15 | Review of MarSIS Research Activities (2005-2009) |
| 9:35 | Key MarSIS Findings and Implications of Research |
| 10:15 | Coffee Break |
| 10:30 | GoogleEarth Introduction and Training |
| 12:00 | Lunch |
| 1:00 | Participants use MarSIS for decision-making exercises in GoogleEarth or ArcGIS |
| 2:30 | Evaluation of MarSIS and Research Methods |
| 3:15 | Thanks and Closing |

If you brought a laptop and do not have Google Earth installed please be sure to let us know this morning. We will load the Google Earth software and MarSIS (.kmz) data during the workshop for use in the afternoon Google Earth exercises.

Appendix II. Workshop Participant Lists

<u>Workshop</u>	<u>Name</u>	<u>Organisation</u>
Grenada	Crafton Isaac	Fisheries Division
	Bobby Medford	Coast Guard
	Johnson St. Louis	Fisheries Division
	Spencer Thomas	Sustainable Development Cou
	Wilbur Francis	Coast Guard
	Francis	Fisheries Division
	Sally Anne Baghwhan Logie	Ministry of Environment
	Lisa Chetram	Fisheries Division
	Paul Phillip	Ministry of Environment
	Kiri Grant-Hoschtialek	Board of Tourism
	Clare Morrall	St Georges University
	Denyse Ogilvie	People in Action
	Moran Mitchell	Fisheries Division
	Ron Simon	Fisheries Division
	Justin Rennie	Fisheries Division
	Hon. Minister Lett	Ministry of Agriculture
	Jerry Mitchell	St Georges University
St. Vincent	Jennifer Cruikshank	Fisheries Division
	Leslie Straker	Fisheries Division
	Lucine Edwards	Fisheries Division
	Bernard Soleyn	Fisheries Division
	Kris Isaacs	Fisheries Division
	Raquel Hamlet	Ministry of Tourism
	Cheryl Jardine	Fisheries Division
	Ottis Joslyn	CCCCC
	Shelly-Ann Lewis	National Trust
	Berris Lyttle	Mustique Co
	Lezlian James	Fisheries Division
	Darnely Hazell	Mustique Co
	Lucille Grant	Fisheries Division
	Alisa Martin	Fisheries Division
	Joanna Stowe	Bequia Highschool
	Michelle Stowe	Bequia Highschool
	Dornet Hall	Physical Planning
Union	Mevion Clement	Millennium Connection
	Robin Hartley	Tobago Cays Marine Park
	Carlisle Swift	Police Dept.
	Sherwin Noel	Water taxi
	Mericia Mitchell	Board of Tourism
	Kayon Roberts	PM School
	Patrice Froget	Sustainable Grenadines
	Junior McDonald	Fisheries Division
	Stanton Gomes	Environmental Attackers
	Lennus Wilson	Union Secondary School
	Martin Barriteau	Sustainable Grenadines
	Olando Harvey	Tobago Cays Marine Park
	Krista Kavanaugh	Sustainable Grenadines
	Ken Isaacs	Petit St Vincent Resort
	Meritha Small	Tobago Cays Marine Park
	Sharon Gulick	Tobago Cays Marine Park
	Roseman Adams	Environmental Attackers
Kester Douglas	Fisher	
Valgine Francis	Sustainable Grenadines	
Mathew Harvey	Fisher	
Unknown name	Police Dept.	

Appendix III. MarSIS Geodatabase Structure

(8 Feature Classes) * *Indicates the use of Local Knowledge*

1. Bathymetry
 - a. Isobaths (Contour Lines) of Grenada Bank
 - b. DEM (Shaded Relief for 3D- Depth)
2. Infrastructure
 - a. Coastlines
 - b. Roads
 - c. Hotels
 - d. Airports
 - e. Seaports
3. Imagery/Maps
 - a. Nautical Charts {Imary}
 - b. Topographic Maps {1:25,000}
4. Marine Habitats
 - a. Benthic Habitats (Shallow, Deep)*
 - b. Geomorphology {TNC – Millennium Mapping Project}
 - c. Upwelling Zones
 - d. Shorelines (rocky, white sand/black sand beaches)
 - e. Turtle Nesting Beaches*
 - f. Seabird Roosting Areas {EPIC & West Indian Sea Bird Atlas}
 - g. Baitfish Bays*
 - h. Iguanas*
 - i. Nursery Areas*
 - j. Oyster Beds
 - k. Whelks*
5. Marine Resource Users
 - a. Day-tour Operators
 - b. Water-taxi Operators
 - c. Ferries
 - d. Dive Shops
 - e. Artisanal Fish Landing Sites
 - f. Yacht Charter Companies
6. Space Use Patterns
 - a. Anchorages
 - b. Ship/Ferry Routes
 - c. Dive Sites*
 - d. Fishing Grounds*
 - e. Recreational Areas*
 - f. Historical/Cultural Areas*
 - g. Vending Sites
 - h. Aquaculture
 - i. Shipbuilding Sites*
 - j. Ship Wrecks*
7. Threats
 - a. Sand-mining*
 - b. Landfills
 - c. Illegal Dumping Sites*
 - d. Land-Based Sources of Pollution*
 - e. Artificial Structures
 - f. Desalination Outfalls
 - g. Dredging
 - h. Goats*
 - i. Mangrove Cutting*
8. Other
 - a. Protected Areas
 - b. Exclusive Economic Zones
 - c. Local Names of Coastal Features*
 - d. Geographical Scope of MarSIS (maximum of 200 metre depth on the Grenada Bank in Grenadines)

Appendix IV. List of publications related to the MarSIS research

- 2009 Baldwin, K. Summary report for the '*Knowledgebase for Lessons Learned Best Practices in Coral Reef Management -Applications for Review & Evaluation of MarSIS*' St. Vincent & the Grenadines and Grenada Workshops. March 11-12, 2009. 17 pp.
- 2008 Baldwin, K. and S. Punnett. *A Preliminary Investigation of the Queen Conch Fishery in St. Vincent & the Grenadines*. Poster presentation. 61st Gulf and Caribbean Fisheries Institute, Guadalupe. November 2008.
- 2007 Baldwin, K., R. Mahon, P. McConney, and H.A. Oxenford. Student Travel Award Winner. *Stakeholder engagement in the development of a participatory GIS for the Grenadine Islands*. In press. 60th Gulf and Caribbean Fisheries Institute. Punta Cana, Dominican Republic. 11 pp.
- 2007 Baldwin, K., R. Mahon & H.A. Oxenford. *Participatory Mapping for the Grenadines Marine Resource Space-use Information System*. 45th Annual Urban and Regional Information Systems Association (URISA) GIS Conference. Washington D.C. August 20-23, 2007. 18 pp.
- 2007 Baldwin, K. *A marine space-use information system for the Grenadine Islands: a basis for collaborative planning and management*. PhD Seminar Proposal. Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies, Cave Hill Campus, Barbados. 26 pp.
- 2007 Baldwin, K. *Participatory Mapping for the Grenadines Marine Resource Space-use Information System*. Presented at the ESRI International Users GIS Conference. San Diego, California. June 17-22, 2007.
- 2007 Baldwin, K., D. Gill, A. Cooke, T. Staskiewicz, D. Lizama, R. Mahon, P. McConney and H.A. Oxenford. *A socio-economic and space-use profile of Grenadine marine resource users*. A technical report for the Nature Conservancy. CERMES, University of the West Indies, Cave Hill Campus, Barbados. 116 pp.
- 2006 Baldwin, K., R. Mahon, H. Oxenford, A. Cooke, D. Gill, T. Staskiewicz. *A profile of marine resource users in the Grenadines*. 59th Gulf and Caribbean Fisheries Institute. Belize City, Belize. 9 pp.
- 2006 Baldwin, K. *Summary Report for the Stakeholder Meetings and Space-use Mapping Exercises of the Grenadines Marine Space Use Information System (MarSIS)*. MarSIS Stakeholder Summary Report, October 2006. 21 pp.

- 2006 Baldwin, K. *Grenadines Marine Space-use Information System (MarSIS)*. Presented at the 3rd Caribbean Environmental Forum & Exhibition (CEF-3), Antigua, June 5-9th.
- 2006 Baldwin, K. *Data scoping of the Grenadines Marine Space Use Information System (MarSIS): A summary of preliminary observations and key informant interviews from Grenada, St. Vincent and the Grenadine Islands*. MarSIS Stakeholder Summary Report, May 2006. 11 pp.
- 2006 Blackman, K., R. Mahon, M. Pena and B. Simmons. Annotated Bibliographic Information on the Grenadines. CERMES Technical Report, University of the West Indies, Cave Hill Campus, Barbados. 64 pp.

All relevant documents, maps & surveys can be found on the MarSIS Yahoo E-group webpage:

<http://tech.groups.yahoo.com/group/grenadinesMarSIS/>

MarSIS information can be accessed via the research website:

www.grenadinesmarsis.com

Appendix V. Google Earth Workshop Handout and Exercises



Google Earth Workshop

We will give a short overview on how to use Google Earth to begin. You may already be familiar with using Google Earth, so this will be a refresher. Hopefully, you may assist others who are unfamiliar with Google Earth. The Grenadines MarSIS geodata that we are showing today are available you will look at today will be for viewing in Google Earth so we felt it important to get all of us on the same page with Google Earth know-how. The second half of the workshop will give you time to explore the MarSIS data.

The morning's Google Earth short tutorial can be found at this link:
<http://gisatvassar.blogspot.com/2007/10/google-earth-lunchtime-demonstration.html>

I. Topics for Morning Workshop

Getting Started with Google Earth	Navigation
Navigation	
Searching	Measure Tool
Measure Tool	
Setting Up Placemarks	Adding a Polygon
Adding a Polygon	
Adding Your Own Map	Viewing Layers

Viewing Layers

II. Topics for Afternoon Workshop

Exploring the Grenadines MarSIS Database. We will provide you with the KMZ Google Earth file for the MarSIS project Google Earth files. The MarSIS Google Earth files are set up as folders just like the MarSIS Geodatabase Structure (found is set up. Please look at the MarSIS Geodatabase Structure paper in your folder.)

Explore MarSIS:

- Take some time to look through the various datasets. Expand the Layers Folder and review each of the various datasets within each folder to get familiar with the various datasets.
- Turn all layers off except for **Sea Turtle Nesting Beaches** (under Marine Resources) and **Illegal Sand Mining** operations (under Threats). Zoom into some of the illegal sand mining operations. Is there a correlation between the two layers? Find all areas where there is sand mining occurring at beaches where turtles nest. How many beaches did you find?

Look at **Mangrove Cutting** locations (under Threats) and **Nursery Areas** and **Baitfish Bays** (both under Marine Resources). How will mangrove cutting affect these resources? How many nursery areas are currently threatened by mangrove cutting activities?

- Turn on **Shallow Water Habitats** (under Marine Habitats) and turn on **Photos & Videos** layer. Explore the photos of the various habitat types and identify areas with good quality. Find an area of good quality (and with a low amount of human impacts) that has all three (reef, sea grass beds and mangroves) habitats close together as these areas provide for good reef ecosystem function. Draw a polygon around your new 'potential marine protected area' site.

Your turn:

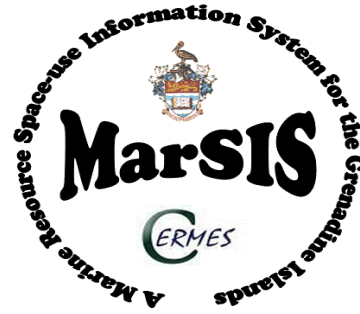
Now that you are familiar with the datasets - Turn on layers that are of interest to you and create your own map. Keep it as simple or as complex as you like but try to show something of interest. Add placemarks or outlines of areas that you'd like to have stand out on your map. Use a descriptive title. When you are finished, save your map as a JPEG and email it to us (baldwin.kimberly@gmail.com) as well as yourself, your boss and your friends!

I NEED TO PUT IN HOW TO DO THE PRINTING/SENDING OF THIS FILE!!Go to File -> Save -> Save Image and give your map a name or (if you have a Gmail account) got to Email -> Email Image and send your map that way.

Appendix VI. Stakeholder Evaluation Survey

Grenadines MarSIS - Final Evaluation

* Answers are confidential



Name _____
 Organisation _____
 Position _____
 Phone # _____
 Email _____

How long have you been involved in this project? *please circle your answer*
 Today Past Year From the start Other _____

Stakeholder Group *Please circle ONE of the following:*
 I represent: *Government* *NGO* *Community / Public*

Do you feel the MarSIS be useful to your agency or group? yes _____ no _____
 How? _____

MarSIS Geodatabase

The MarSIS is what I expected it to be after hearing about it.
Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

The 'layers' of information within MarSIS are easy to understand.
Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

Types of information in MarSIS are meaningful to me.
Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

The MarSIS (in Google Earth) is too technical for most people to use.
Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

Local knowledge datasets are a useful part of the MarSIS.
Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

MarSIS can be used to better understand the marine environment.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS highlights the importance of the sea to the people of the Grenadines.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS provides information that is unique (i.e. not provided by any other source).

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS will be a good educational resource.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS can assist in prioritising marine management needs.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS can be used for more informed marine decision-making.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS can assist in the planning of more sustainable development.

Strongly Agree Agree Disagree Strongly Disagree Don't know

Who do you feel will use MarSIS? & How do you feel it could be used?

1	
2	
3	
4	
5	

Who do you think will use this information MOST? *please circle ONE answer*

Government NGOs Community Schools Consultants

The research was carried out in a clear and open manner.

Strongly Agree Agree Disagree Strongly Disagree Don't know

Effort was made to include a wide range of stakeholders in the research.

Strongly Agree Agree Disagree Strongly Disagree Don't know

Stakeholder feedback was incorporated into the research methods.

Strongly Agree Agree Disagree Strongly Disagree Don't know

Care was taken to properly validate information / datasets.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS objectives have been developed according to local needs.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS (in terms of technology) has been developed appropriately for the local capacity.

Strongly Agree Agree Disagree Strongly Disagree Don't know

MarSIS (in Terms of Datasets/Information) has been developed appropriately for the local capacity.

Strongly Agree Agree Disagree Strongly Disagree Don't know

The compilation of the MarSIS was a collaborative or group effort.

Strongly Agree Agree Disagree Strongly Disagree Don't know

I feel a sense of ownership in the final product.

Strongly Agree Agree Disagree Strongly Disagree Don't know

Use of Communication & Information Exchange Mechanisms

Please rate the usefulness of the following for information exchange during the research:

If Yes - Did you find they were...

Did you:

Attend Stakeholder Summary Meetings

Yes / No

Very Useful Useful Somewhat Useful Not Useful

Receive MarSIS Egroup Emails

Yes / No

Very Useful Useful Somewhat Useful Not Useful

Receive Office/Personal Visits

Yes / No

Very Useful Useful Somewhat Useful Not Useful

Read MarSIS Summary Reports

Yes / No

Very Useful Useful Somewhat Useful Not Useful

Receive Paper Maps **Yes / No**
Very Useful *Useful* *Somewhat Useful* *Not Useful*

Receive Information CDs or DVDs **Yes / No**
Very Useful *Useful* *Somewhat Useful* *Not Useful*

Visit the Website **Yes / No**
Very Useful *Useful* *Somewhat Useful* *Not Useful*

Read the BLOG **Yes / No**
Very Useful *Useful* *Somewhat Useful* *Not Useful*

Assist in Validating Information **Yes / No**
Very Useful *Useful* *Somewhat Useful* *Not Useful*

Communication and Information exchange was an important part of this research.

Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

Participation in this research was a learning experience for me, in terms of:

1. Participatory approaches used

Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

2. New Technology / Skills

Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

3. Increased my Knowledge

Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

The effort of participating in this research was worth my time.

Strongly Agree *Agree* *Disagree* *Strongly Disagree* *Don't know*

Other comment or suggestions: _____

Thank you for completing this survey & participating in the research!