



Article Discussion

Geographic information system

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(Redirected from GIS)



MARITIME ACADEMY OF ASIA AND THE PACIFIC KAMAYA POINT

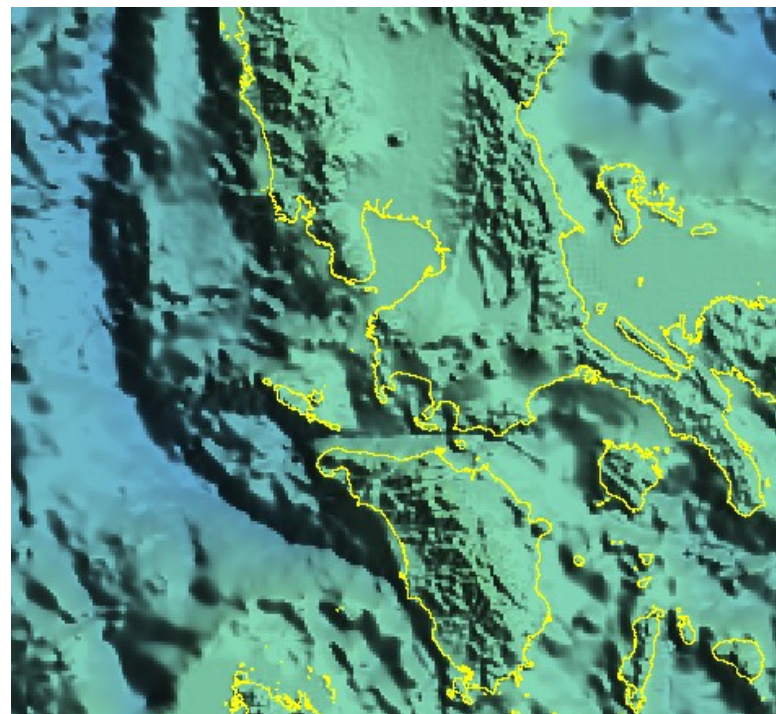
Department of Research and Extension Services
Associated Marine Officers' and Seamen's Union of the Philippines-PTGWO-ITF
Kamaya Point, Brgy. Alas-asin, Mariveles, Bataan

For questions and info about GIS training options, project advisement, assistance, and collaborations, please feel free to contact:

Dr. Angelica M. Baylon, Institutional Research Consultant, at ambaylon@gmail.com, or at 63-919-476-8128, 63-2-741-1024 local 4031, or 63-47-237-2255 Local 4031. Dr. Baylon currently serves as President of the Philippine Association of Extension Program Implementers (PAEPI) and Director for Research and Extension Services at the Maritime Academy of Asia and the Pacific (MAAP) in Mariveles, Bataan. Her professional profile can be viewed at <http://ph.linkedin.com/pub/prof-angelica-baylon-phd-msbm-mba-ms-bschemistry/31/b03/140> and www.maap.edu.ph/research.

Dr. Al Tongco, Research Specialist in GIS at Oklahoma State University, U.S.A., where he earned his PhD in General Engineering. He has more than 6 years experience in GIS. Dr. Tongco is Founder and Project Director of the Philippine GIS Data Clearinghouse (www.philgis.org). He had served as Dean of the College of Engineering and Information Technology of Caraga State University and Universidad de Zamboanga in the Philippines. He can be reached at al.tongco@okstate.edu or al_tongco@yahoo.com. His professional profile can be viewed at http://philgis.org/res_al.pdf

A Primer in GIS



Created using free GIS software (www.mapwindow.org), bathymetric data (www.gebco.net), and coastline data (www.philgis.org)

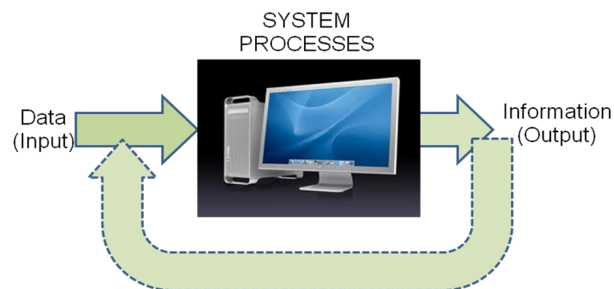
This primer is produced specifically for absolute beginners in GIS: researchers, administrators, managers, decision makers, teachers, students, and others who are interested to learn and apply GIS.

Updated November 4, 2011

What is a GIS?

GIS stands for **Geographic Information System**.

Simply, a GIS is a computerized information system that takes in geographic data, process it, and gives out useful information.



Geographic data are data about people, places, things, and events on earth that have geographic coordinates or are geographically referenced. Because of the data's unique feature, spatial relationships and patterns can be visualized and analyzed to produce information that are useful to researchers and managers.

Since its inception about 40 years ago, the field of GIS has distinctly evolved from a blend of several disciplines, mainly: Geography, Cartography, Graphics and Design, Computer Science, Geodesy, Mathematics, Spatial Statistics, Remote Sensing, and Global Navigation Satellite System (GNSS).

What can a GIS do?

Its simplest task is in mapping and visualization. But its most important function is in spatial analysis. Spatial analysis takes into account the location, geometry, topology, and relationships of geographic data, which lend itself to intelligent decision making.



The map on the left was created using free MapWindow GIS software and elevation and administrative boundary data (www.philgis.org)

Where can I find more info about GIS?

You may start at <http://en.wikipedia.org/wiki/GIS>. From there you can link to numerous sites. You may also wish to visit: www.gis.com, www.gislounge.com, and www.philgis.org. If you need to know more about a specific GIS task or to locate a site, you may be able to find it using Google Search, or you can email us.

I want to learn GIS quickly. Where can I get GIS training?

Short seminars and intensive hands-on training in GIS are available by arrangement. Seminar and training focus will be tailored to participants' background, professional interests, or requesting party's needs, e.g. GIS applications in specific disciplines such as institutional research, environment and natural resources, and maritime. Seminars and trainings may be done onsite if requested.

Is GIS expensive to learn and apply?

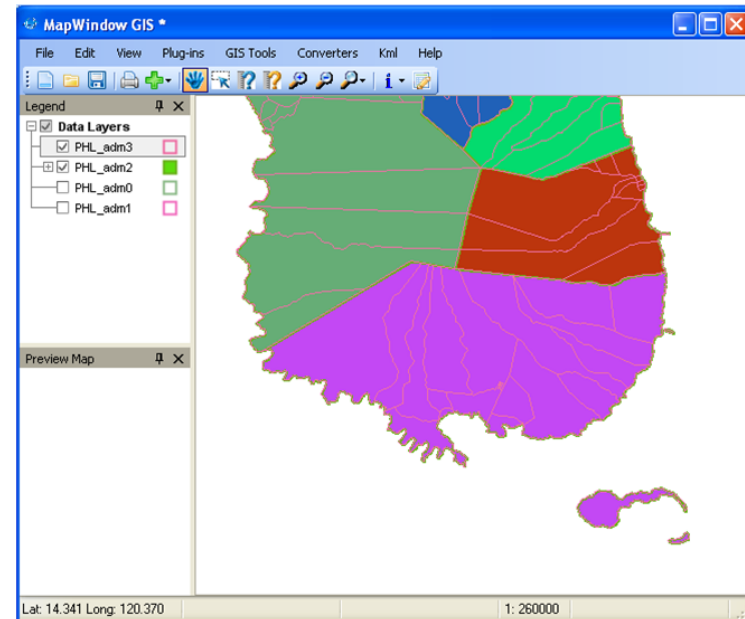
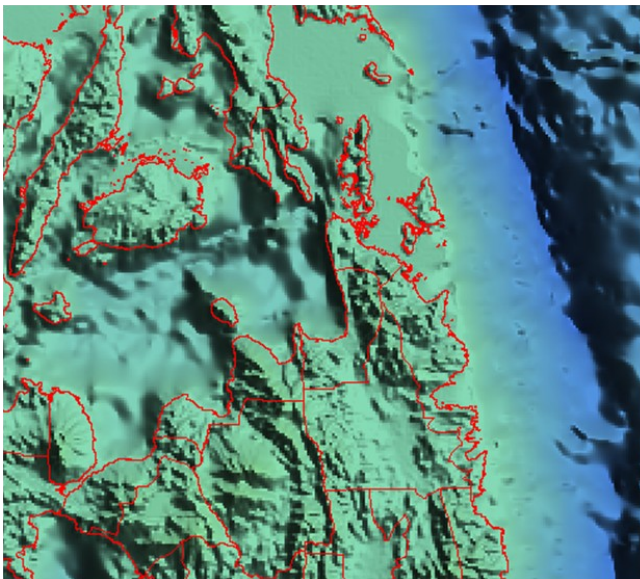
Yes and no.

There are several online schools that offer GIS degrees and short courses that charge for a fee. But there are also online lessons and tutorials that are free. Commercial GIS software licenses can be quite expensive to acquire and maintain.

There are also several free and capable GIS software releases containing sophisticated functionalities that are present in commercial models. You may visit www.freegis.org and http://en.wikipedia.org/wiki/List_of_geographic_information_systems_software to see numerous selections of free GIS software tools.

Can you show me more map samples using free GIS software and data?

The map on the right was created using free MapWindow GIS software and bathymetric data (www.gebco.net) and administrative boundary data (www.philgis.org).



Who are using GIS?

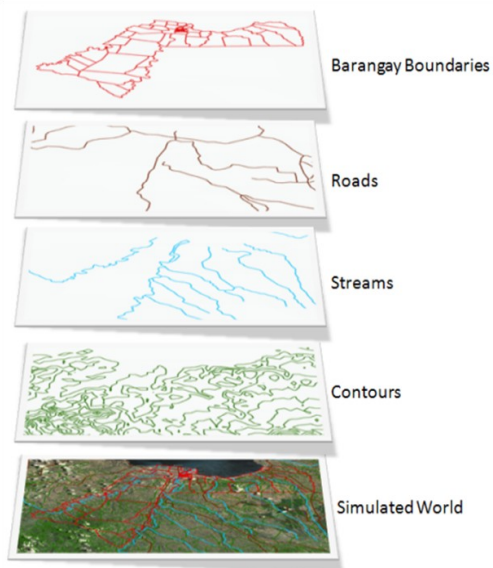
GIS is not just for researchers and students. GIS is especially useful for decision makers such as managers, administrators, and directors of large and small projects.

GIS is increasingly applied in many disciplines and professions worldwide, namely: agriculture, institutional research, engineering, local government, natural resources and environment, public health, maritime, social sciences, and business, among many others.



How does GIS work?

When using the GIS software, several datasets can be overlaid on a computer screen to simulate and view a scenario. If all data layers have uniform geographic reference they will lay on top of each other like a deck of cards. On a computer screen they may appear like a rendition of the real world.



How is information derived from GIS?

Depending on the specific information a user needs, the GIS specialist can mix and manipulate different data layers to produce the combination to produce the desired analysis, information, and display.

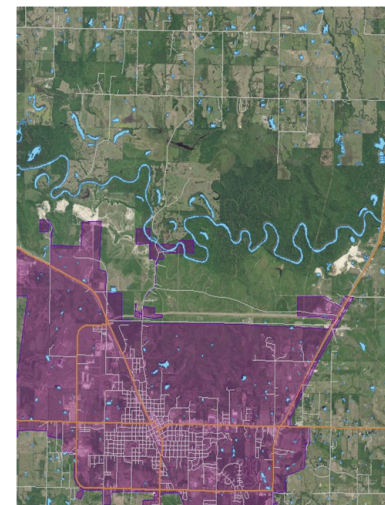
Each data layer is linked to a corresponding table of attributes that quantitatively and qualitatively describes the nature of that data layer.



How do overlaid GIS datasets look like?

Scenarios are “seen” and analyzed even before events happen. To planners and decision makers, this is very important because they can assess the impact of events or scenario and may save a lot of time, effort, and money before implementing the actual project.

The accompanying illustration shows an overlay of various datasets, i.e. river and water bodies, highways, city streets, and city boundary, all on top of true-color satellite imagery. All data layers are projected to the same coordinate system.



Why should I be interested in GIS?

If you are a researcher, academician or educator, administrator, department head, director, high school or elementary teacher, or student in any level or major, GIS can be a very useful research and decision-making tool for you. GIS helps users to make scientific and informed decisions in research and project planning and implementation, thus avoiding guesses and perhaps costly mistakes.

GIS enhances the analytical and critical-thinking skills of students, especially those in elementary and high schools. Through GIS, learning becomes a journey of discovery, enthusing students to explore uncharted simulated worlds.

