EoN Systems, S.A.

Specialists in Information Systems

"Next Wave Technology"
"uniting neurons and silicon at the nexus of the Americas …"

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EoN Systems, S.A., provides consulting services and products in geographic information systems (GIS), remote sensing, custom software applications and advanced computer technology. EoN is a privately held Panamanian corporation.

In addition, EoN has skills in project management, social sciences studies, anthropological research, social impact assessment, demographics, cultural geography and cultural and natural resource management.

Our experience covers a wide range of applications in the commercial, government, military and institutional sectors. Our highly trained staff and advanced computer laboratory meet the challenge of projects having the most demanding and rigorous technical requirements.

EoN specializes in providing applications, consulting and products in several key areas:

♦ Geographic Information Systems (GIS) and Remote Sensing
♦ Sale of High Resolution Satellite Imagery and Local and Regional GIS Products
♦ Relational Database Management Systems (RDBMS) & Custom Programming
♦ Social Assessment and Cultural and Natural Resource Management,
♦ Multimedia Projects and Digital Graphics
♦ Telecommunications, Networking, Intranets and the Internet
♦ Technology Transfer, Custom Training & Technical Support.

Geographic Information Systems (GIS) and Remote Sensing

EON specializes in helping clients visually and spatially analyze their data. We have developed applications that incorporate GIS over a wide range of projects.

♦ **cadastral survey** use of high-precision GPS technology to develop digital geodesic networks for integration with GIS systems. Applications include definition of legal boundaries, site survey and parcel layout.

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- **engineering GIS** preparation of 3D models, cut-and-fill analysis, volumetric calculation, area, profiles and cross-sections. Applications include earth moving activities such as mining, drilling and blasting, excavation projects, road corridors, quarries and dredging.
- **automated mapping and facility management (AM-FM)** GIS for electric, water and communication utilities. Application involves routing, distribution, allocation, resource management and route and network analysis.
- **commercial and corporate GIS** marketing, competitive, socio-economic, demographic & site-location analysis.
- **government agency GIS** managing agency resources and performing spatial analysis.
- **scientific GIS** remote sensing, managing and analyzing spatial data and associated attributes for research.
- **cultural and natural resource management** for NGOs, conservation groups, agricultural organizations and government agencies that manage cultural and natural resources.
- **military GIS** base ops., project management, engineering, battlefield simulation, intelligence and tactical operations.

We provide complete services for GIS applications:

- analysis of digital aerial photographs and satellite images, including digitizing of aerial photographs, adjustment and geo-referencing of images and creation of photo-mosaics
- analysis and classification of raster images, including vegetation and land use classification systems
- high-resolution large format scanning and printing
- data entry and capture, digitizing and conversion of spatial data from paper or images to geo-referenced digital formats, including conversion from one data format to another
- integration of digital maps and databases with both vector and raster data
- visual and spatial analysis of data and thematic mapping for presentation and publication
- GIS-application development for turnkey systems
- complete training and technical support for GIS, database and remote sensing applications

We offer comprehensive, one-stop shopping for geographic information systems solutions: needs assessment, creation of a functional prototype, application development, data capture, digital mapping, data-GIS integration and completed GIS delivery, along with comprehensive training and technical support.

Figure 1: Historic Map of the Darién, Panama

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Local and Regional GIS Product Sales

♦ **Satellite Imagery** – High-resolution ortho-photography and satellite imagery. We are a Space Imaging distributor and sell IKONOS imagery.

♦ **SIG Panama** – 1:2,500 scale vector GIS database of the Republic of Panama based on paper sources from the Dept. of Census and Statistics, Controloria . Has all buildings, census blocks, census data, political boundaries, transportation network, bridges and hydrology. Updated with year 2000 data.

♦ **SIG Republic** – 1:250,000 scale database of the Republic of Panama. Has towns, transportation network, hydrology, contours, protected area and political boundaries. Derived in part from the 1:250,000 scale paper maps provide by the Instituto Geografico "Tommy Guardia."
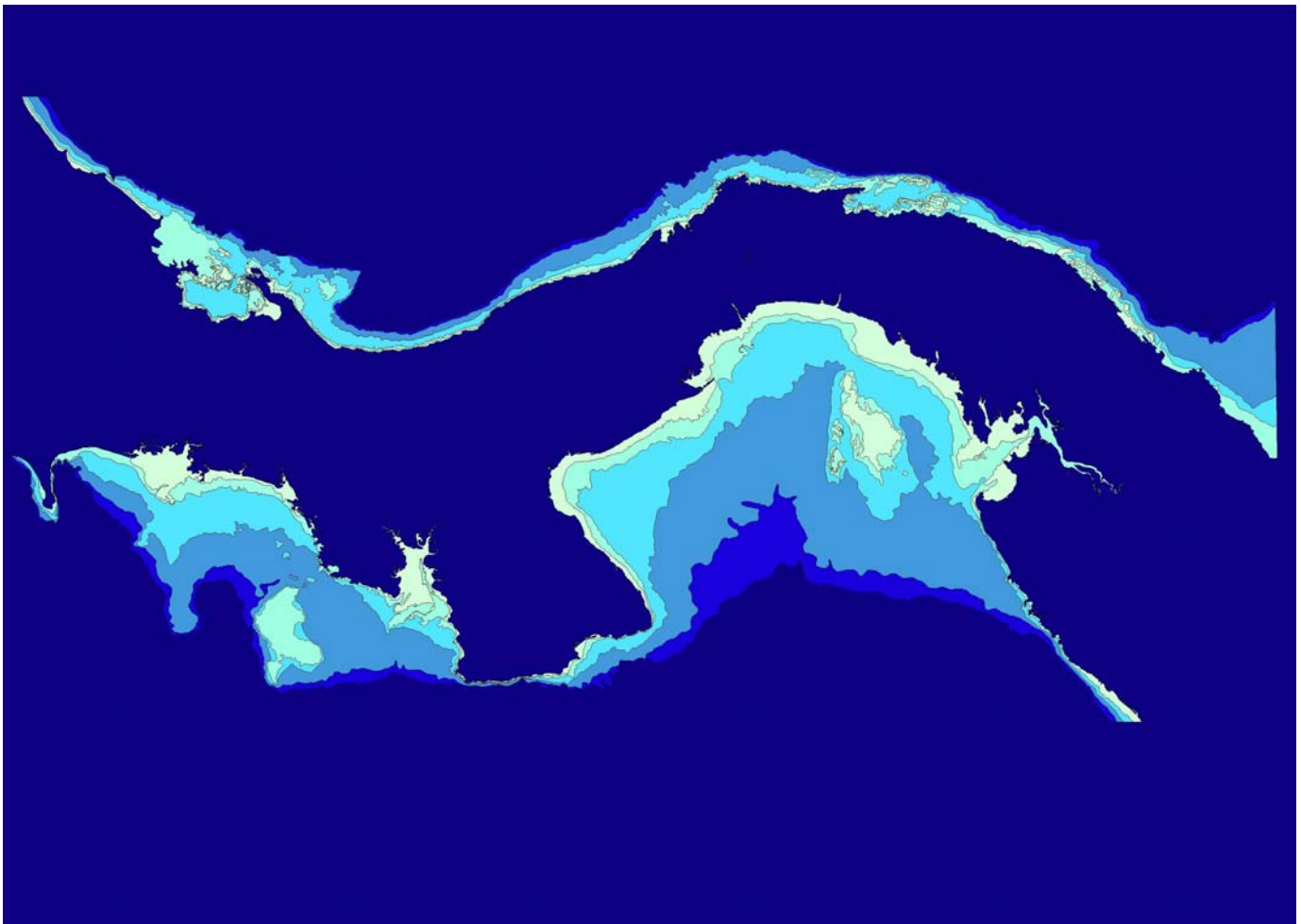

Figure 2: Map Outline of the Republic of Panama, prepared from SIG Republic 2000

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Social Assessment – Cultural and Natural Resource Management

EON provides consulting in social impact assessment and cultural and natural resource management. We have the ability to quickly assemble a sophisticated inter-disciplinary team that combines our project management, information system technology, GIS and cultural and natural resource management skills with regional and local bilingual consultants in biology, forestry, hydrology, geology, ecology, anthropology, archaeology, geography, market research and social analysis to support projects.

Our long history in Panama and the Central American region spans work with Gorgas Memorial Laboratory, CEASPA, National Environmental Authority (ANAM), Panama Canal Authority (ACP), Panamanian Institute of Tourism (IPAT), Ministry of Agricultural Development (MIDA), Ministry of Economy and Finance (MEF), Ministry of Health (MIDA), US Agency for International Development (USAID), Organization of American States (OAS), Smithsonian Tropical Research Institute (STRI), World Bank, Gamboa Rainforest Resort, Social Development Fund (FIS) , Edemet-Edechi, World Conservation Union (IUCN), U.S. Army South (Panama), United States Southern Command (USSOUTHCOM) and Interoceanic Region Authority (ARI).

Our excellent working knowledge of local and regional resources, networking relationships and experience supports complex initiatives. Our longstanding research, support and consulting activities with national indigenous groups positions us for analyzing complex social and ecological problems that indigenous and campesino populations face.

Our GIS products and databases incorporate many socio-economic and demographic indicators. These variables, when combined with the physical and political geography in digital maps, permit the construction of sophisticated models of cultural tendencies and profiles of socio-economic behavior. EON provides cultural resources management, social science and ecology-related consulting in:

- background **research** for social and natural resource impact assessment studies
- **cultural geography** and demographic studies
- identification, assessment and **management of cultural resources** for pre-historic and historic sites
- background **research** for management alternatives evaluation and selection for social development projects
- **training program** assessment, design and implementation
- **anthropological and political analysis** in Panama and the Latin American region
- development of questionnaires and statistical analysis of complex data sets
- support for projects in **natural resource management** and tropical ecosystem conservation
- consulting in **eco-tourism** management, creation of national heritage interpretative products
- **integration of GIS** with database systems for natural & cultural resource management projects

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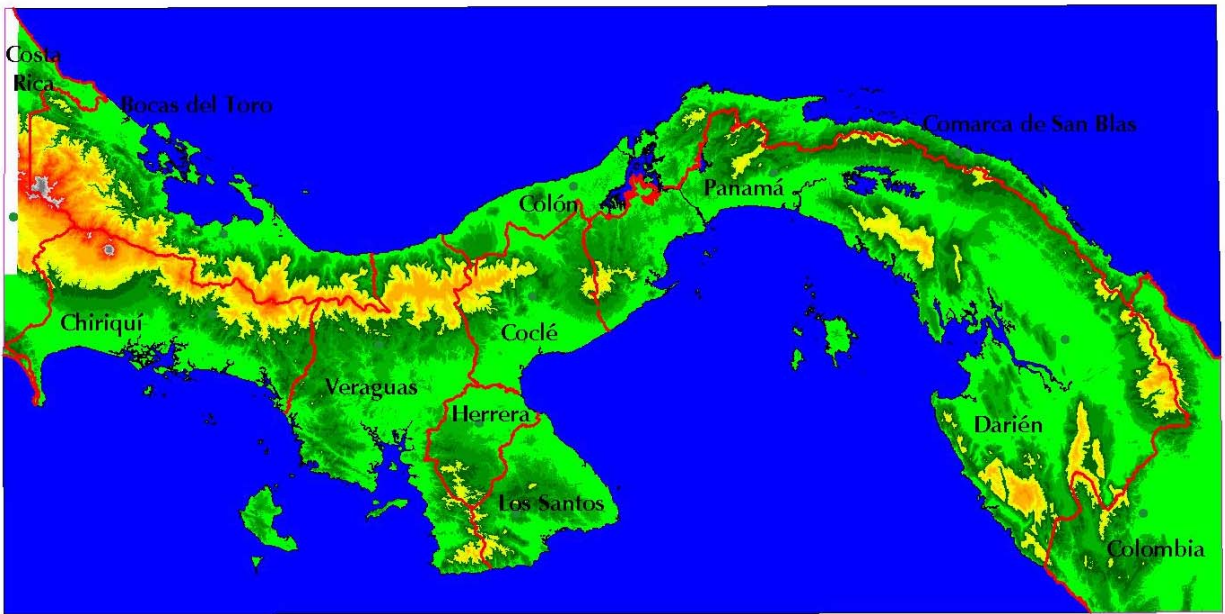
Figure 3: Map of Panama showing Provincial political boundaries and elevation, prepared from SIG Republic 2000

Relational Database Management Systems (RDBMS) & Custom Programming

Microsoft Access, Visual Basic and Microsoft SQL Server are our database and programming environments. We have strong skills and experience in developing large scale, enterprise-wide, multi-user, secure relational database management applications.

We have created numerous custom systems in dozens of application areas, including inventory, budgeting, emergency response, telecommunications, resource management, personnel, training, critical document control, scientific and epidemiological research, military operations, conservation and natural resource management. Current examples of applications we have designed and programmed are: GIS and Project Management System for Rural Poverty for the Panama Ministry of Agricultural Development (MIDA) and the Forestry Information System (SIF) for the National Environmental Authority (ANAM).

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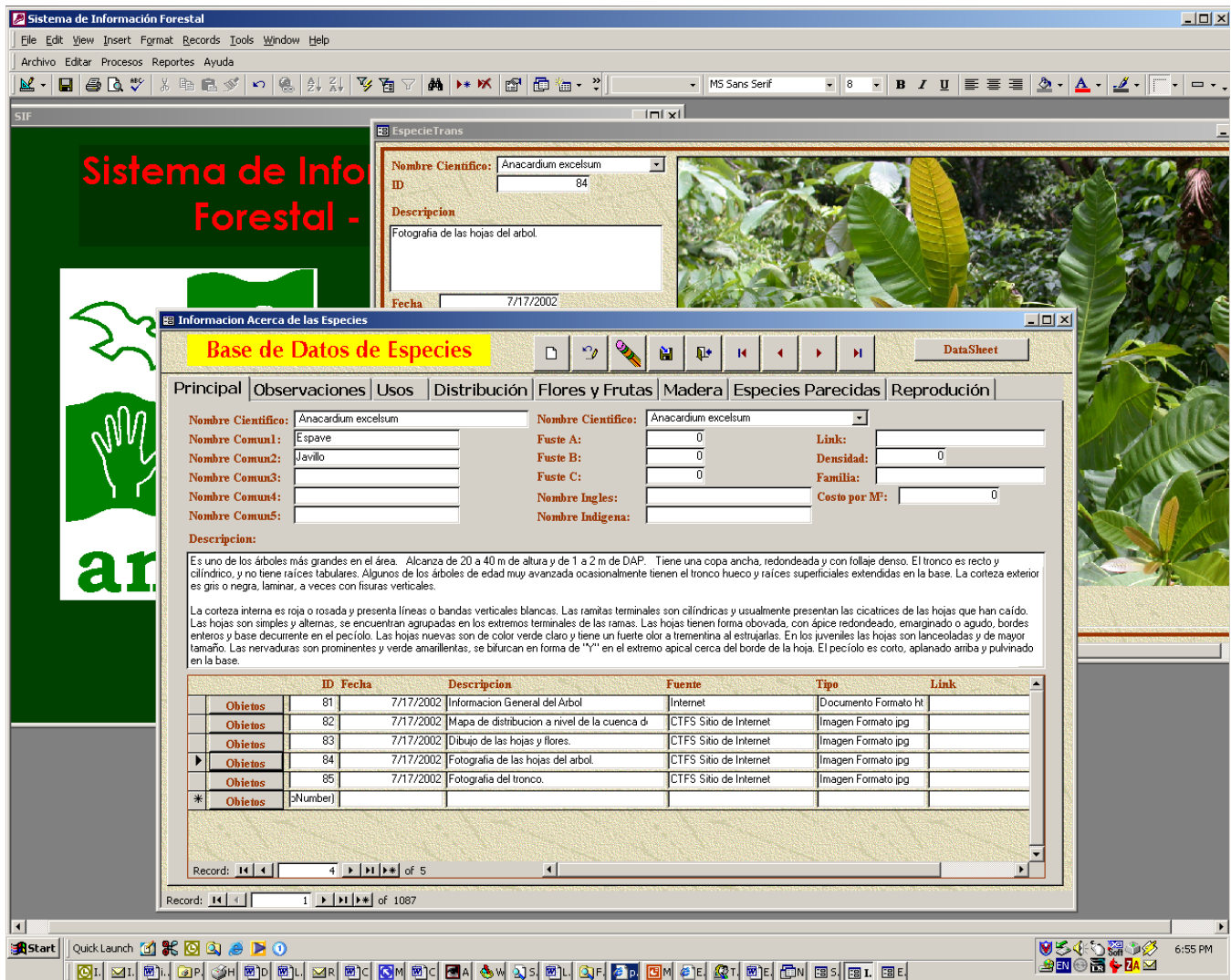
Figure 4: Sistema de Información Forestal (National Forestry Information Systems) designed for the National Environmental Authority

Figure 5: Area Photo and GIS of CALESA Agricultural Operation, Coclé, Republic of Panama

Technology Transfer, Customized Training and Technical Support

EON excels in all areas of computer training and computer-training curriculum development. We can cutomize training for a client's specific needs. Our computer laboratory offers courses in introductory and advanced GIS such as ArcView, using and programming relational database management systems with Microsoft Access and general office productivity applications such as Microsoft Office. We provide training in both English and Spanish.

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EON also manages graphic, sound and video data for multimedia applications. We specialize in the design and creation of multi-media applications that involve digital maps and relational database management systems. Our laboratory's digital scanners, CD ROM writers, video capture hardware, digital sound recording and digital cameras complement graphics software to meet the needs of complex multimedia projects.
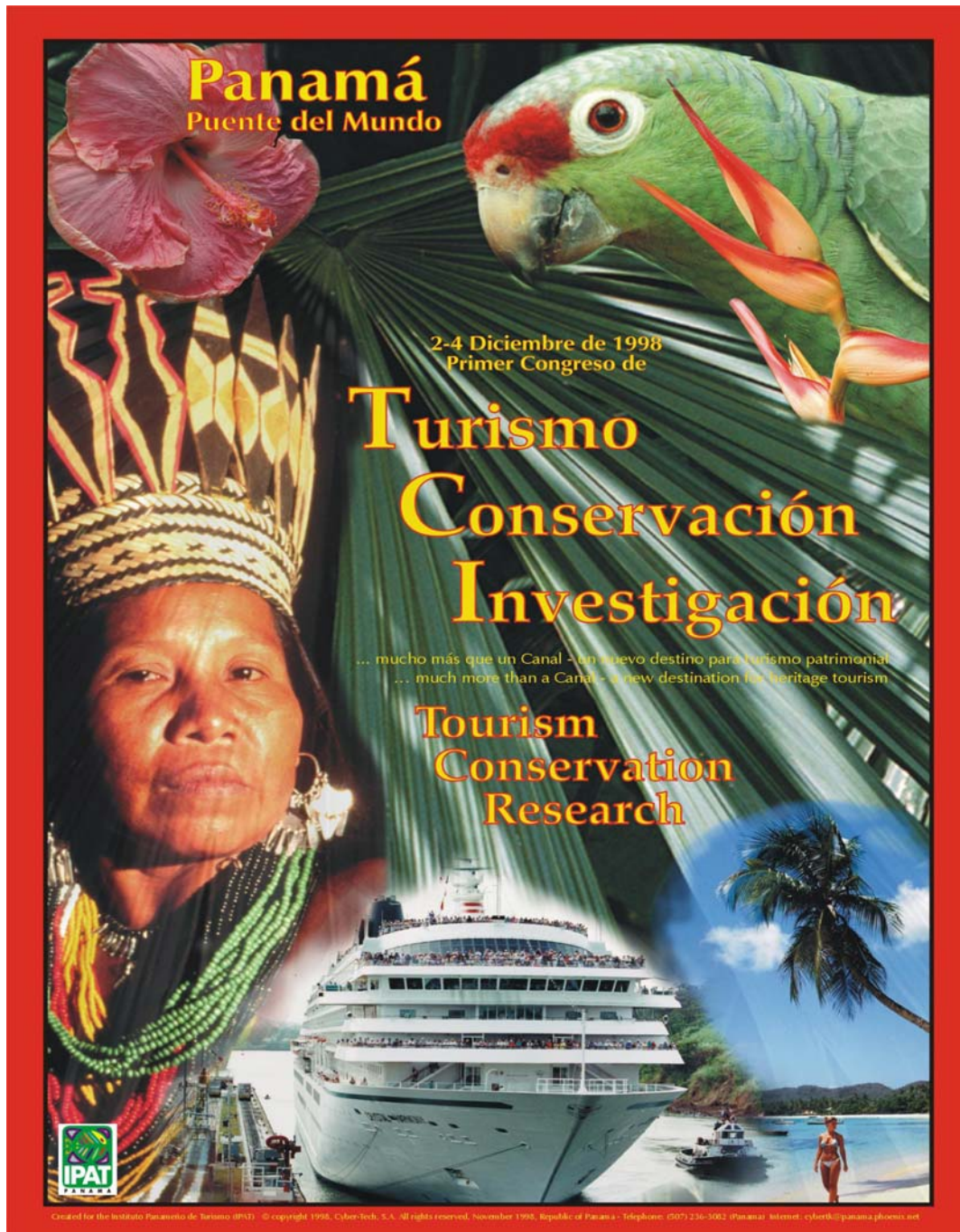

Figure 6: Poster Designed for the Instituto Panameña de Turismo Programa of Tourism, Conservation and Research

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Telecommunications, Networking, Intranets & the Internet

We design, implement and support local area networks and Intranets using Microsoft Server. Many of our network applications support database management systems and GIS application that we design, build and install on the local area network, Intranet

Figure 7: Historic Site of Fort San Lorenzo at the mouth of the Chagres River, Panama

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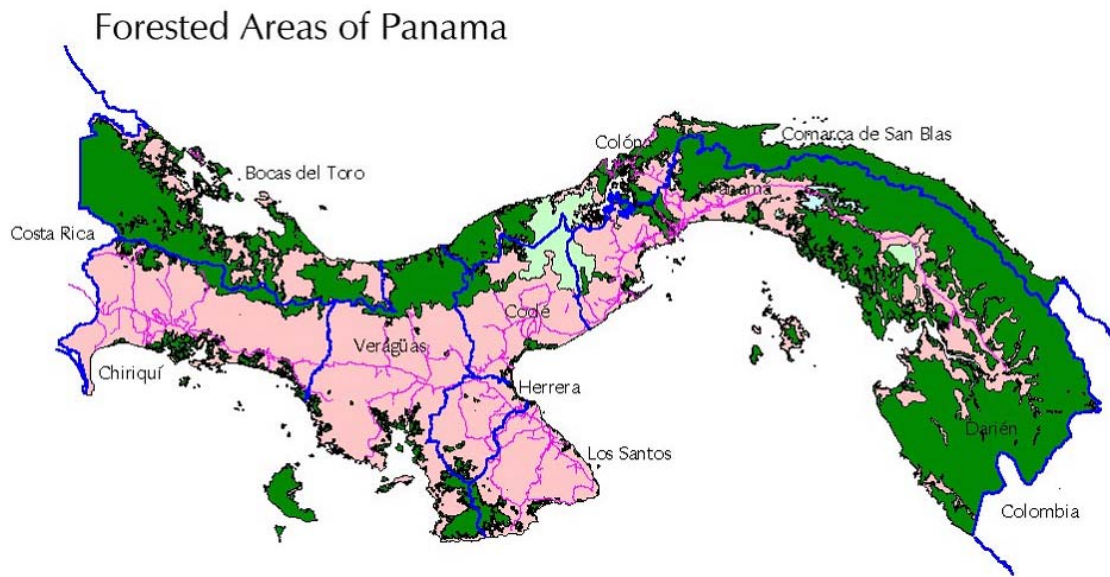
Figure 8: Forested Areas, Republic of Panama prepared from SIG Republic
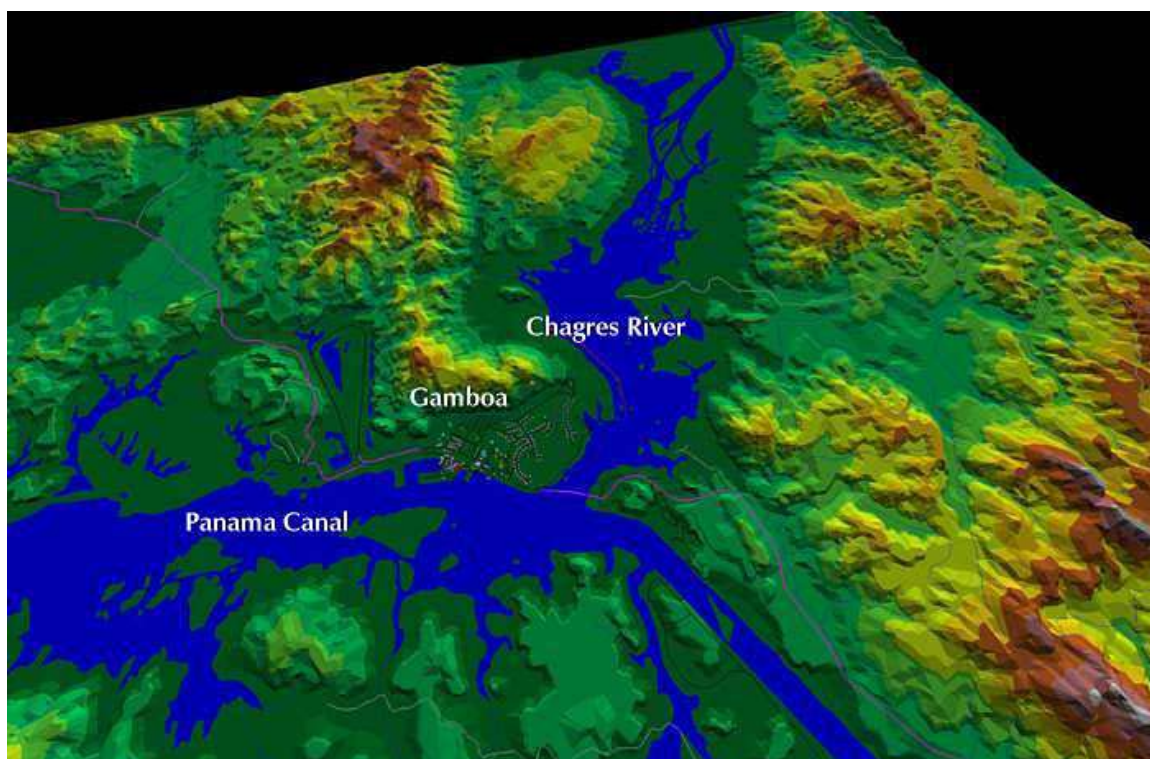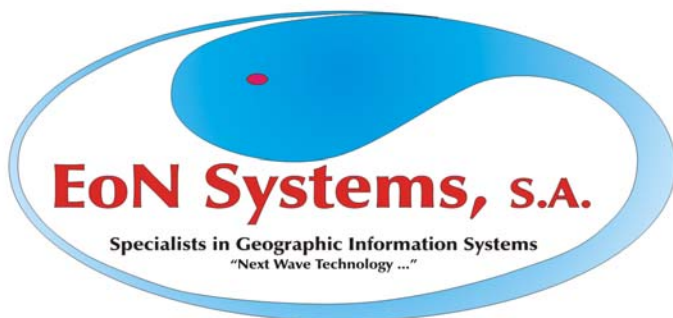

Figure : 3-D Model of Gamoba Area, Adjacent to the Canal, Republic of Panama

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- **William Harp** Chief Executive Officer and Chief of Operations. Bill has managed numerous projects involving complex GIS technology and database management systems. He has executed many social impact assessment and cultural and natural resource management projects. Bill has 20 years experience in consulting as a computer systems analyst, anthropologist, archaeologist, scientist, GIS analyst, programmer, trainer and manager; he brings integrity, communication, management and technical skills to clients' projects. (M.A. in Anthropology, University of Oregon,1982)

- **José Hernández** GIS Department Chief, GIS Analyst and Remote Sensing Specialist. José has extensive experience in managing GIS laboratories and in GIS production. He is a specialist in ARC/INFO, ArcView, Spatial Analyst, Image Analyst, AutoCAD, ArcCAD, Surfer, ArcView, ER Mapper and MapInfo. With over ten years of experience in GIS, José has pioneered the use of GIS technologies in solving complex problems in areas such as engineering, telecommunications, natural resource management, military applications, electrical and water utilities and demographics. He has advanced technical skills in both GIS and remote sensing and has managed numerous interdisciplinary teams involved in GIS application development. (B.S. in Technology, Universidad Tecnológica de Panamá, 1984)

- **Alba Cunningham** GIS Analyst and Project Manager. Alba has extensive experience in GIS production and managing GIS-related projects. Alba specializes in using ARC/INFO, ArcView, Tracer, AutoCAD and ArcCAD in management and for preparation of spatial databases. Alba has pioneered the use of advanced technology in GIS production and has overseen and managed the creation of numerous commercial GIS databases, including SIG Panama, SIG Republic and SIG Canal.

- **Flor María Fernández** GIS technican. Flor specializes in data capture and thematic mapping using ArcView, ArcCAD, AutoCAD and ARC/INFO and the vectorization of raster data with Tracer and Visul Studio. Flor is skilled in all aspects of data capture, scanning, digitizing, vectorization and attribute management as related to GIS production.

- **David Gil** Programmer/Analyst and GIS Technician. David is responsible for managing and supporting all of the software, hardware and network systems at EoN. As a Programmer/Analyst using Visual Basic and Access, he has programmed numerous relational database management systems, including the Project Management System for Rural Poverty for the Panama Ministry for Agricultural Development (MIDA) and the Forestry Information System at the Nacional Environmental Authority (ANAM) . David provides valuable support to all aspects of GIS production.

- **Nilsa Castañeda** GIS Technician. In addition to her administrative and computer skills, Nilsa is a highly qualified GIS technician with extensive experience with ARC/INFO, ArcCAD, AutoCAD and ArcView and in managing and executing all aspects of GIS production.

- **Griselda Rodriguez** Receptionist. Griselda provides administrative support to the EoN staff.

In addition to our permanent staff, EoN maintains associations with consultants in numerous specialized areas, such as forestry, natural resource management, photogrametry, telecommunications, utilities and geology, for addtional support. or Internet server.

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