

# HISTORY OF SCGIS - BULGARIA

PAST, PRESENT AND FUTURE ACTIVITIES

Vanya Naydenova, Stefan Stamenov, Lubka Roumenina

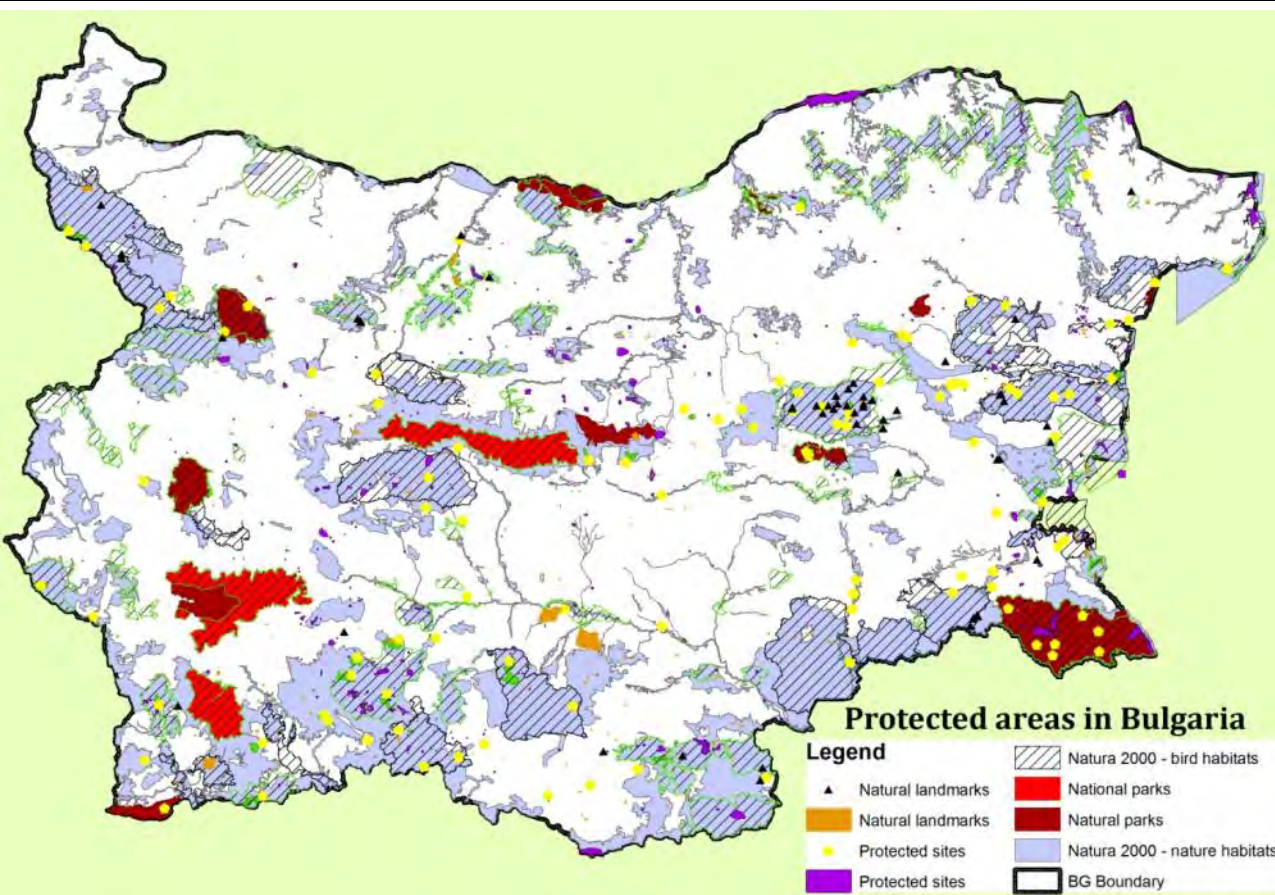
European SCGIS Conference with International Participation

*"Best practices: Application of GIS technologies for conservation of natural and cultural heritage sites"*

Sofia, 21 – 22 May 2012

# Why Bulgaria need to have SCGIS community

The protected territories in Bulgaria includes 3 national parks, 55 natural reserves , 35 maintained reserves, 10 nature parks, 419 protected sites and 346 natural landmarks.



According to the Habitat and Bird Directives the protected areas under Natura 2000 cover 34,3% of the territory of Bulgaria and they include:

- 118 protected areas under Bird Directive (22,6% of the territory of Bulgaria)
- 231 protected areas under Habitat Directive, covering 30% of the territory of Bulgaria.

The map is generated using the data provided by the electronic register of protected areas of the Executive Environment Agency at the Ministry of Environment and Water

# Introduction

The Society for Conservation GIS (SCGIS) Bulgaria is an international chapter of the non-profit organization SCGIS, located in USA.

The SCGIS Chapter Bulgaria is one of the newest international chapters founded in 2009. It consists of the informal community of SCGIS members from Bulgaria, working in the field of application GIS and remote sensing methods for conservation of natural heritage and resources, and cultural heritage sites.

## History in brief

- 2000 – SCGIS Scholar Lubka Roumenina (Ecoclub “Clean Water”)
- 2001 – SCGIS Scholar Ventzeslav Dimitrov
- 2002 – SCGIS Scholar Nevena Borisova (Wilderness Fund)
- 2007 – SCGIS Scholar Vanya Naydenova (SRTI-BAS)
- 2011 – SCGIS Scholar Stefan Stamenov (SRTI-BAS)





# Some key figures from SCGIS & ESRI

Alexander Yumakaev

Charles Convis

Jack Dandermond

SCGIS Community



Charles Convis



Jack Dandermond



Alexander Yumakaev





# Bulgarian participation in SCGIS Activities - 2000

Lubka Roumenina – Ecoclub “Clean Water”, National High School of Mathematics and Science

## *Using GIS in Environmental Monitoring Project in Sofia City*

Roumenina, L., V. Naydenova, K. Golev, K. Popov, J. Dimitrov, G. Baldjiev, A. Filipov, M. Varbanov.  
3<sup>rd</sup> SCGIS Annual Conference, Anza Borego, CA, USA



Acid rainfalls is a serious environmental problem all over the world and Bulgarian capital Sofia is not an exception. Environmental club “CLEAN WATER” had been carrying out a project about monitoring the acidity of the rainfalls over the region of Sofia city . The purpose of this project was to study the spatial distribution of the acid precipitation. To achieve the goal a regularly spread network for observing and taking samples from rainfalls was made on the territory of Sofia. This allow us to compare the results for more and less polluted areas. The obtained data had been processed in GIS and had been used for mapping the acidity of certain rainfalls or rainfalls during a certain period of time.

# Bulgarian participation in SCGIS Activities - 2000

Lubka Roumenina – Ecoclub “Clean Water”, National High School of Mathematics and Science

## *Using GIS in Environmental Monitoring Project in Sofia City*

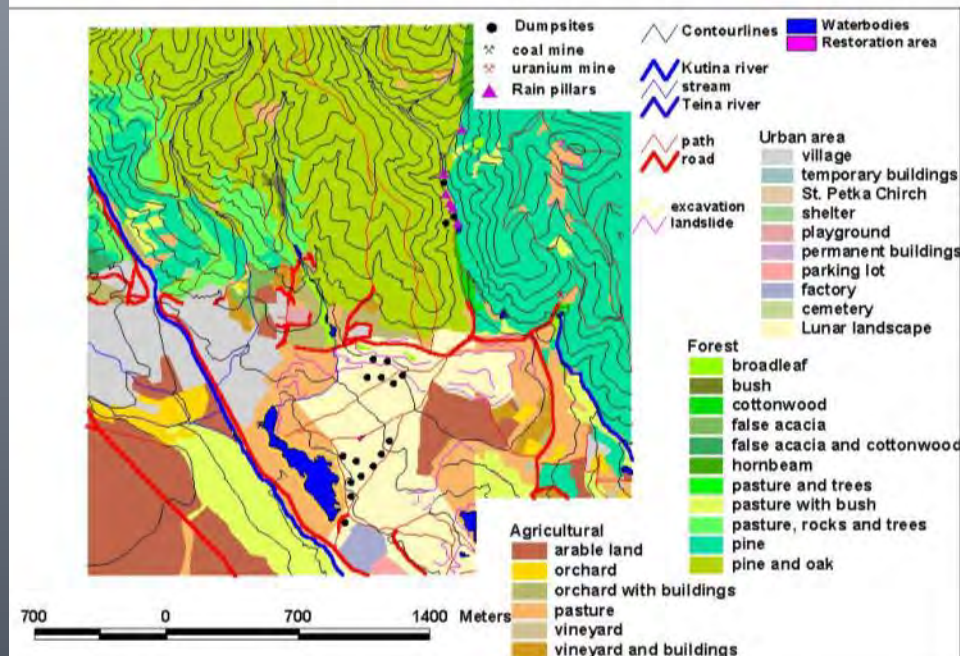
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Another highly disturbed territory near Sofia which has been studied by the members of Eco-club “Clean water” is Kutina Pyramids area. A Landsat TM satellite image were used for analyzing the land cover. A GIS model for contamination reduce and an environmental restoration plan are done.

Proposed restoration plan is a combination of standard techniques for reclamation of mining affected areas and strategies for restoration of natural ecosystems applied by Earth Quest (Seattle, WA, USA).



## Landuse/ Landcover Map of Kutina





2.0

## Bulgarian participation in SCGIS Activities - 2001

Ventzeslav Dimitrov

***Land Use Monitoring in Part of the Plovdiv Polygon by Employing  
Images from Landsat TM and GIS – Bulgaria***

4<sup>th</sup> Annual SCGIS Conference 2001

3.0

## Bulgarian participation in SCGIS Activities - 2002

Nevena Borisova - Wilderness Fund

***Using GIS and Remote Sensing in Biogeography Assessment in the Karst  
Terrain of the Chepan Mountain and the Dragoman Marshland***

5<sup>th</sup> Annual SCGIS Conference 'Embracing Diversity', July 5-7 2002

The aim of her paper is an assessment of the biogeographical diversity in the Chepan Mountain and the Dragoman marshland, located in its vicinity to be made. She has been explored and presented the connection between the distribution of the existing biodiversity and the geographical conditions. The basic study of the karst landforms has been made by means of morpho-hydrographic, morphometric, and photographic methods. As a part of her study, seasonal observations were made and samples of birds, reptiles, amphibians and flora species were obtained.

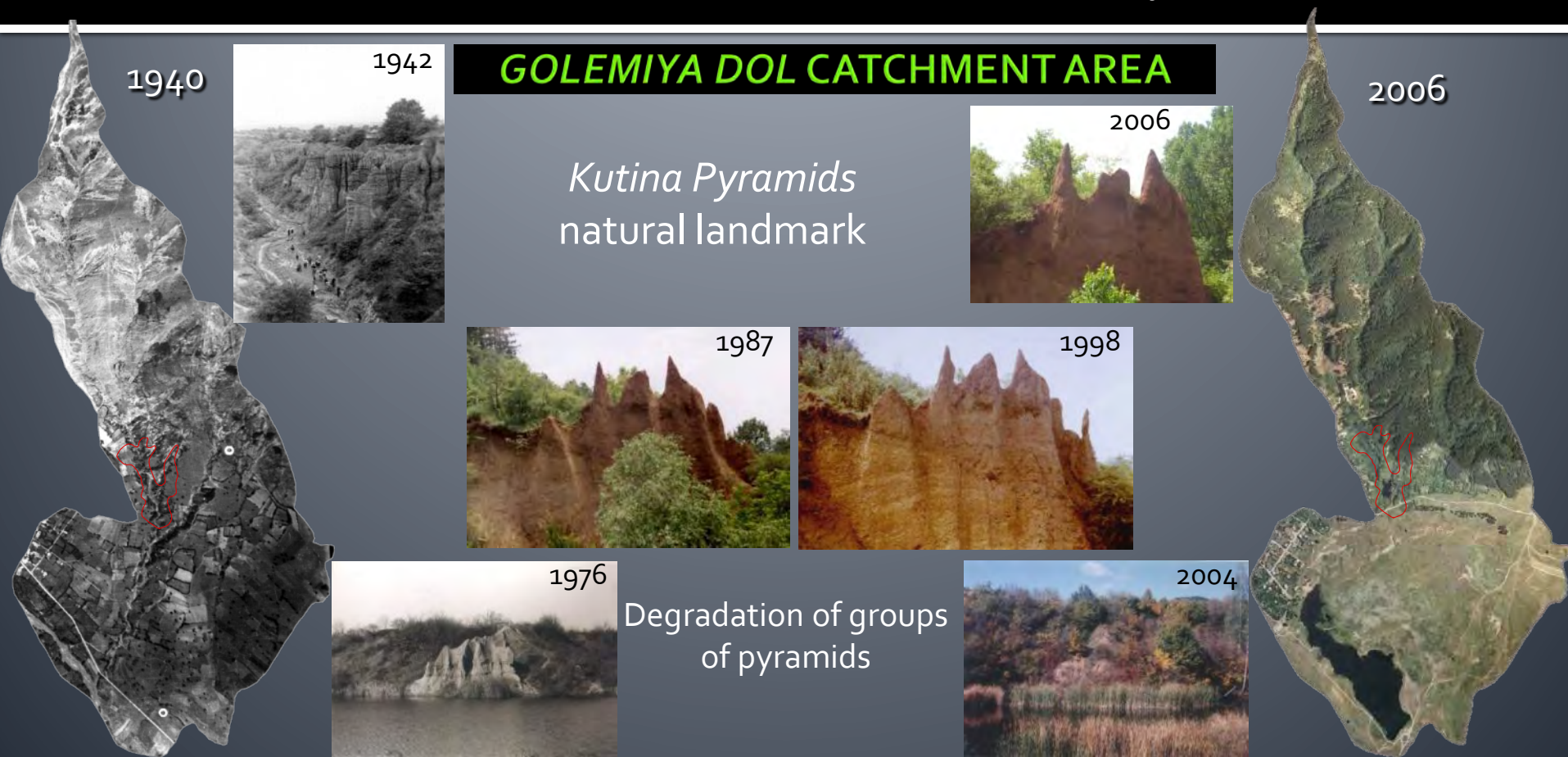
# Bulgarian participation in SCGIS Activities - 2007

Vanya Naydenova – Space Research and Technology Institute - BAS

## *Large-scale Mapping of the Land Use Conflicts on a Natural Landmark in a Stage of Degradation Using GIS and Remote Sensing Methods*

Vanya Naydenova

10th Annual SCGIS Conference, 25-28 June 2007, Monterey, CA, USA

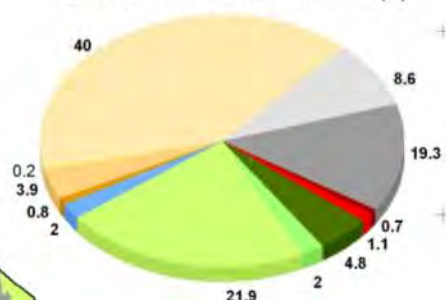




# LAND USE CHANGES

**LAND USE MAP OF THE GOLEMIYA DOL CATCHMENT AREA FOR 1940**

**DISTRIBUTION OF LAND USE CLASSES (%)**

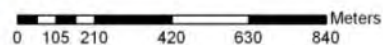


## LEGEND

### Land use classes

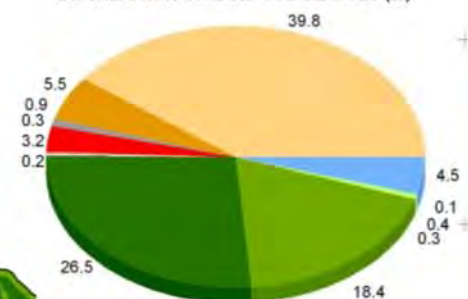
- Bare Exposed Rock
- Bare soil
- Cropland
- Pastures
- Perennial plants
- Other agricultural land
- Deciduous forest
- Meadow
- Shrub
- Mixed vegetated land
- Residential
- Transport, utilities
- Streams

Boundary of the Kutina Pyramids natural landmark



**LAND USE MAP OF THE GOLEMIYA DOL CATCHMENT AREA FOR 2006**

**DISTRIBUTION OF LAND USE CLASSES (%)**

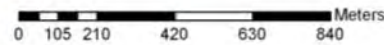


## LEGEND

### Land use classes

- Bare soil
- Coniferous forest
- Deciduous forest
- Exposed bare rocks
- Lakes
- Meadow
- Mixed vegetated land
- Pastures
- Perennial plants
- Reservoir
- Residential
- Summer-houses areas

Boundary of the Kutina Pyramids natural landmark



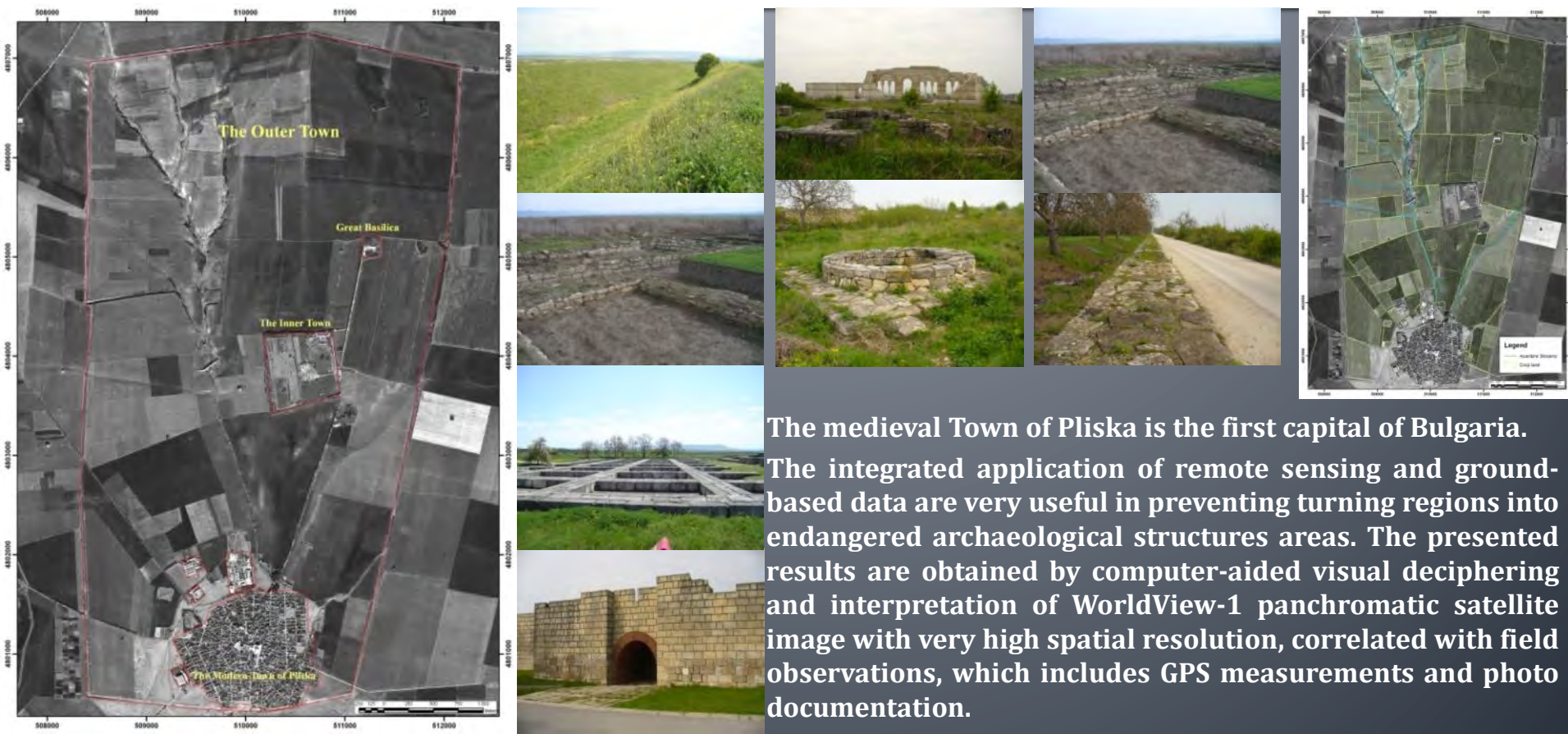
# Bulgarian participation in SCGIS Activities - 2011

Stefan Stamenov - Space Research and Technology Institute

## *Spatial Model of the First Bulgarian Capital Pliska based on remote sensing and ground-based data*

Stefan Stamenov

14th Annual SCGIS Conference "Building Strength", July 16-19, 2011, Big Bear Lake, California





# Current activities

- The first SCGIS conference organized by the Bulgarian Chapter with the support of ESRI Bulgaria, SRTI-BAS and NIAM-BAS
- First Meeting of SCGIS Chapter Bulgaria together with the Coordinator of the International Conservation Program - Alexander Yumakaev
- On-going project "GIS of Old Sofia"

## SOCIETY FOR CONSERVATION GIS (SCGIS) CHAPTER BULGARIA

TOGETHER WITH THE SUPPORT OF  
ESRI BULGARIA  
SPACE RESEARCH AND TECHNOLOGY INSTITUTE - BULGARIAN ACADEMY OF SCIENCES  
NATIONAL INSTITUTE OF ARCHAEOLOGY AND MUSEUM - BULGARIAN ACADEMY OF SCIENCES

The Society for Conservation GIS Chapter Bulgaria would like to invite you to the European SCGIS Conference with International Participation "Best practices: Application of GIS technologies for conservation of natural and cultural heritage sites" which will be held **May 21 – 23, 2012** in Sofia, Bulgaria.

### Main topics:

1. **GIS-based conservation of natural heritage sites and natural resources** – this topic includes application of GIS in various research fields related with conservation: Ecology and Conservation, GIS for protected areas, GIS in landscape studies and analysis, GIS for biodiversity, Marine Conservation and GIS, etc.
2. **Conservation of cultural heritage sites using GIS** – this topic is focused on application of GIS for conservation of archaeological sites and historical places, part of the cultural heritage.

### Conference Schedule

May 20, 2012 (Sunday)	• Arrival and accommodation
May 21, 2012 (Monday)	• On-site registration begins at 13 p.m. • Plenary Session and Keynote Address • Poster Session
May 22, 2012 (Tuesday)	• Paper Sessions, Closing
May 23, 2012 (Wednesday)	• Tour around cultural sites in Sofia

### KEYNOTE SPEAKER

Alexander Yumakaev – ESRI Inc. & member of SCGIS, USA. Mr. Alexander Yumakaev is Conservation Program Coordinator at ESRI Inc. as well as a longstanding member of the Society for Conservation GIS (SCGIS).

### CONFERENCE VENUE

The European SCGIS Conference will be held at the National Archaeological Museum in Sofia, Bulgaria. Location of the National Archaeological Museum: 2, Soborna St., Sofia, Bulgaria.

### ORGANIZING COMMITTEE

Honorary Chairman: Alexander Yumakaev – ESRI Inc. & SCGIS

#### Chairmen:

Prof. Petar Getsov – SRTI-BAS  
Assoc. Prof. Dr. Ludmil Vagharshian – NIAM-BAS

#### Vice-Chairmen:

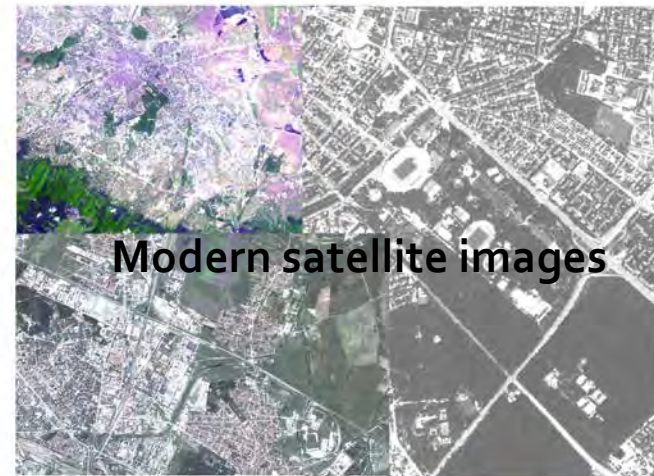
Assoc. Prof. Dr. Vanya Naydenova – SCGIS Bulgaria & SRTI-BAS  
Assistant Stefan Stamenov – SCGIS Bulgaria & SRTI-BAS

#### Members:

Prof. Gero Mardirosoyan – SRTI-BAS  
Magdalena Kuzmanova – ESRI Bulgaria  
Assoc. Prof. Dr. Andrey Aladzhov – NIAM-BAS  
Assoc. Prof. Dr. Georgi Nekhtrov – NIAM-BAS  
Assoc. Prof. Georgi Jolev – SRTI-BAS



Old maps and plans



Modern satellite images

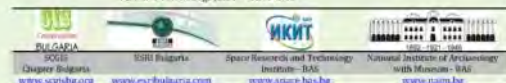


Archive photos

Karastoyanov, 1912



Modern photos



www.sofiaculture.bg

N. Stoichkov, Zenit Gallery, 2010



# SCGIS – Bulgaria website

Website: [www.scgisbg.org](http://www.scgisbg.org)

E-mail: [scgisbg@gmail.com](mailto:scgisbg@gmail.com)



## SCGIS-Bulgaria

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### Home



The Society for Conservation GIS (SCGIS) Bulgaria is an international chapter of the non-profit organization SCGIS, located in USA. The SCGIS mission is to build community, provide knowledge, and support individuals using Geographic Information Systems (GIS) and science for the conservation of natural resources and cultural heritage ([www.scgis.org](http://www.scgis.org))

The SCGIS Chapter Bulgaria is one of the newest international chapters founded in 2009. It consists of the informal community of SCGIS members from Bulgaria, working in the field of application GIS and remote sensing methods for conservation of natural heritage and resources, and cultural heritage sites.

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- [Upcoming events](#)
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- [Projects](#)
- [Links](#)