FIG Working Week 2005 and GSDI-8
From Pharaohs to Geoinformatics
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Monitoring Land Use Changes and Determining The Suitability of Land for Different Uses with Digital Photogrammetry

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Outline

- Objective
- Introduction
- The Study Area and Data Set
- Photogrammetric Evaluation
- Change Detection of Forested Area in Çalköy
- Conclusions

Objective

✓ Monitoring the change detection of forested area,

✓ Knowing the dynamic changes of forest resources in terms of quantity over the last 50 years,

✓ Identify the current land use pattern in East Blacksea region of Turkey,

✓ Showing that usability of photogrammetric techniques for monitoring land use change

Introduction

✓ Forest cover and land use have a direct and enormous effects,

✓ The State has been taking protective measures in forested areas since 1870. However, these measures have generally been insufficient,

✓ Illegal and inappropriate forest utilization has been widely practiced due to a lack of effective preventive measures in land use,

Introduction

✓Photogrammetry become still an important contribution to many disciplines such as foresty,

✓ Remotely sensed data has become the major data source in the change detection of diverse applications including forest cover changes.

The Study Area and Data Set

✓situates in Çalköy district in the East Black Sea Region of Turkey
✓ has a rugged topography
✓has 4318 of population
✓600 hectares and 1200 m average elevation

Aerial photos: taken in 1955, B/W images, scale of 1/35000; taken in 2002, Color infrared images, scale of 1/16000

Photogrammetric Evaluation

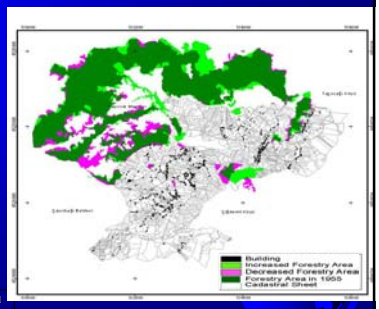
- ✓ Z/I Imaging Digital Photogrammetric System,
- ✓ Microstation V.8 as CAD tool,
- ✓ Stereo photogrammetric evaluation,
- ✓ Ground control point (GCP) measurement using GPS (Global Positionin System),
- ✓ Vector data evaluated by using ArcInfo and ArcView GIS softwares.

Change Detection of Forested Area in Çalköy

✓increased naturally foresty arae is 61.5 hectares

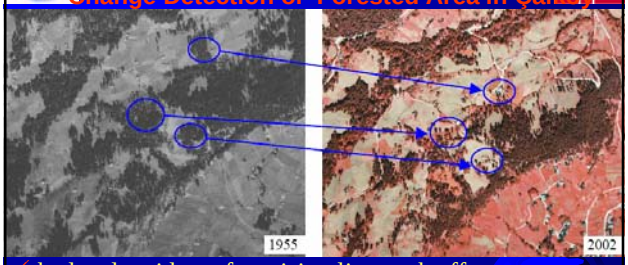
✓decreased foresty area is 46.5 hectares

✓the change between 1955 and 2002 is about 14.5 hectares in forest land,



Slope Group (%)	0-10	11-20	21>	Total
Parcel Area (ha.)	29.6	62.5	409.9	501.9
Percentage (%)	5.9	12.4	81.7	100

Change Detection of Forested Area in Çalköy

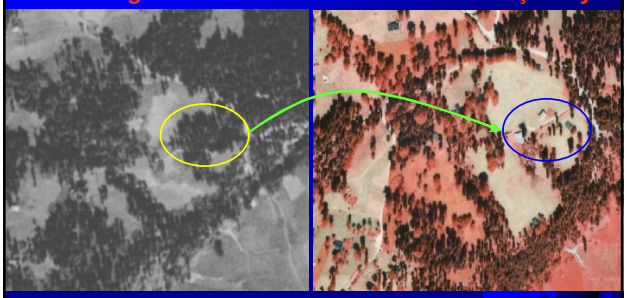


✓the local residents for raising livestock affects on declining of the forest areas,

✓avaliable 48 houses in outside of the forest area in 1955,

✓107 houses in the same area by 2002,

Change Detection of Forested Area in Çalköy



✓22 houses available in 1955 remained in the same place,

✓43 houses were built in different places in the forest area

Conclusions

✓ In the result of the study, it can be said that remotely sensed data like aerial images can be used as very handy and appropriate tools for monitoring and change detection.

✓ Local residents have cleaned small cluster forest area and have converted it to farmland and residential areas,

Conclusions

✓ It is necessary to carry out forest cover monitoring and to warn local government on time on their exceed change,

✓ Developing appropriate planning and management interventions for conservation and sustainable utilization of foresty.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Teşekkürler! Hoşcakalın !
شُكْرًا، مَعَ السَّلامَة !
Thank you very much and good bye !