

This presentation it is on the Poster Session B1 3 Forests and Ecosystems:  
Reserving current degradation trends  
PS-B1-19 (ref 326)  
Date: Tuesday 5 May 2009  
Time: 10:30 - 17:30  
Title:

# THREE CLASIFICACIONES OF FOREST COVERAGE AND LAND USE IN SAN RAMÓN, COSTA RICA

## OBJECTIVE

Detect and specifically identify areas of forest land use to establish a database for the Canton of San Ramon that will in future recommend conservation strategies for the motivation to protect the forest ecosystem.

## BACKGROUND

Costa Rica by its tropical location and to present a relief with highly contrasts that produce variety of microclimates that do it that be a country of highly biodiversity and the Region of West be not the exception of the existing biotic and abiotic factors. Along 20 years or more the process of teaching has been created and consciousness rising of the importance on the conservation of the natural resources. The owners that even conserve in its farms forests, areas that are open classrooms for the learning on the importance of the natural resources in the development of human activities. By means of the Geographical Information Systems utilization (SIG) and the teledetection as tools to create and to obtain data I try itself to determine and to map the land use of the canton of San Ramón, Alajuela, Costa Rica has been obtained a vision of the landscape.

The project of forest cover remaining in the Canton of San Ramon has an interest in containing the private forest landowners interested in protecting the forest cover within the property and they feel supported by the generation of maps and spatial perspective and have the elements in their properties. Knowing the structure of these forests are located in sizes large, medium and small. Apparently as a result of forest patches are small bridges that allow the union between the large and medium.

Use	First classification 20-jun-07		Second classification 23-ago-07		Third classification 19-nov-07	
	Area (ha)	Percentage (%)	Area (ha)	Percentage (%)	Area (ha)	Percentage (%)
Forest	42184.63	41.33	49350	23.96	49549.64	52.03
Grass	39399.23	38.60	6311	2.92	6311.18	6.62
Water	178.97	0.17	676	0.31	673.32	0.71
Sugarcane	2182.80	2.13	11303	5.23	11303.28	11.87
Pineapple	2544.28	2.50	6814	3.15	6813.99	7.15
Coffee	ND	ND	5643	2.61	5643.23	5.92
Another crops, bare soils	911.60	0.90	ND	ND	31131.33	3.28
bare soils	ND	ND	3131	1.45	ND	ND
Urban	3601.96	3.52	7632	3.53	7632.38	8.01
Clouds	11072.55	10.85	117936	54.65	4157.82	4.36
Total	102077.03	100.00	215778	100	95218.17	99.95

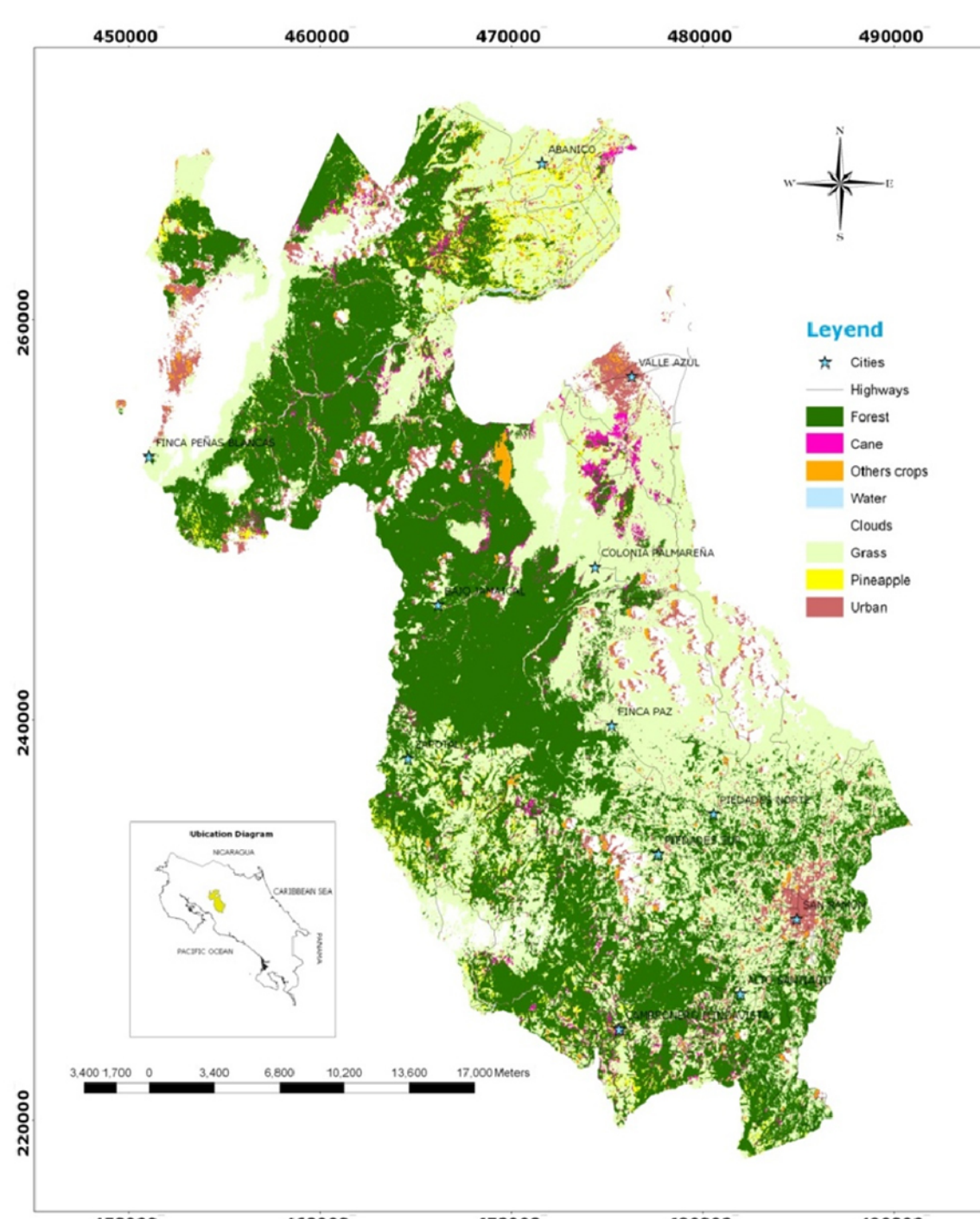
**Accuracy**  
For each classification accuracies were different. The first was classification accuracy of 96% and for the second and the third classification accuracies were 74% and 70% respectively.

## APPROACH

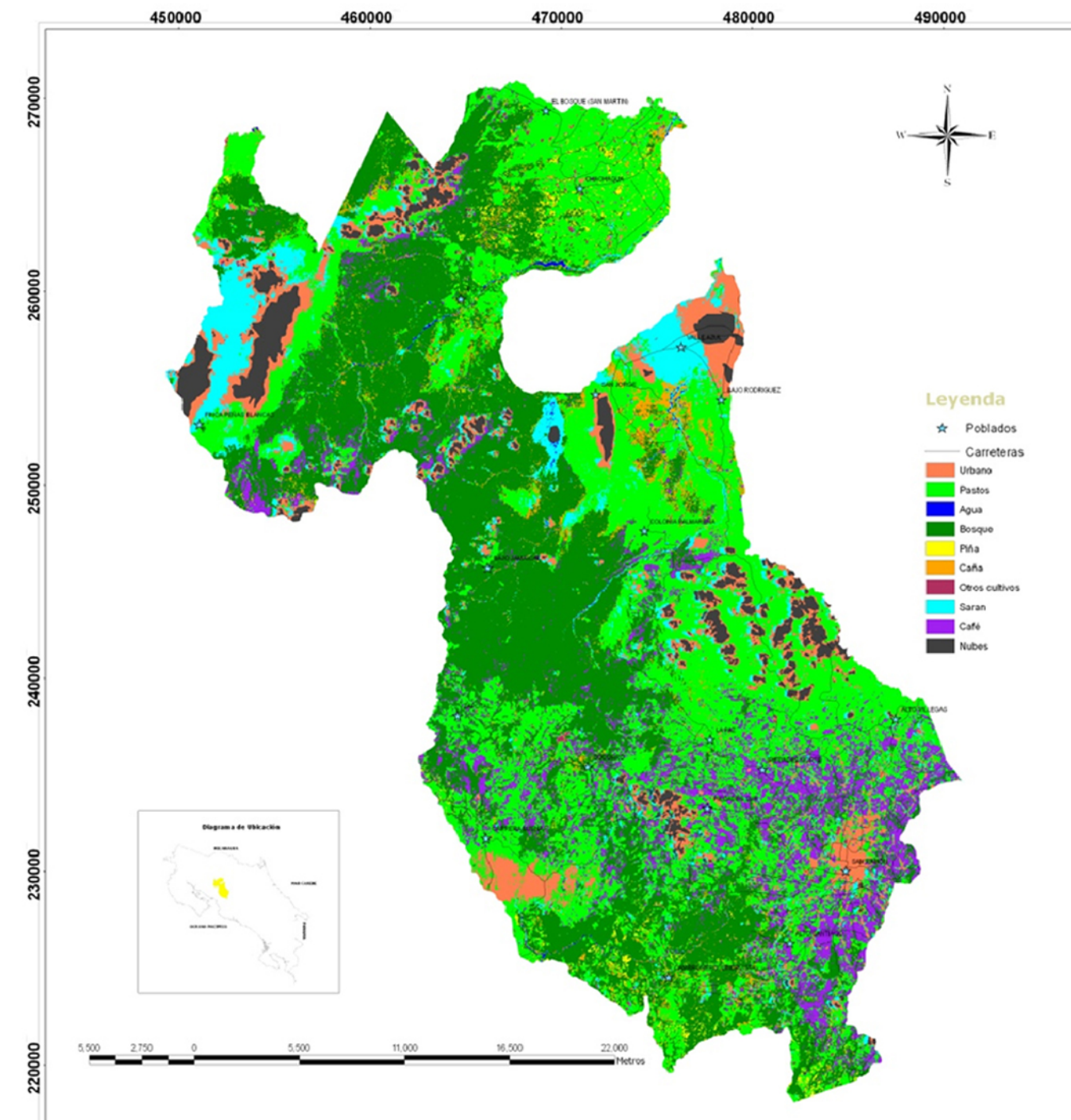
The project utilized the image specifically ASTER in nine bands was collected in August 2005 for SERVIR Panama and was donated to Carlomagno Soto. Spatial resolution of the first three bands is 15 km and Stacking layer was applied to the other six bands and produced the characterization of the landscape. This procedure was repeated three times to include other land uses that were not covered by the first classification and apply masks to the clouds. These clasificaciones were confirmed with field GPS points.

The members of this project wish to make recommendations for management the forests of the canton of San Ramón for using a simple text book to be distributed to the municipality (local governments, community associations, schools, universities and the general public. In the long run the two projects work together and draft research community work together with university students during the National Seminar on Health and Environmental Reality I and II continue to obtain knowledge of the forests of the canton of San Ramón and making to owners of farms and the Ministry of Energy and Technology to be informed and make better decisions on forest management.

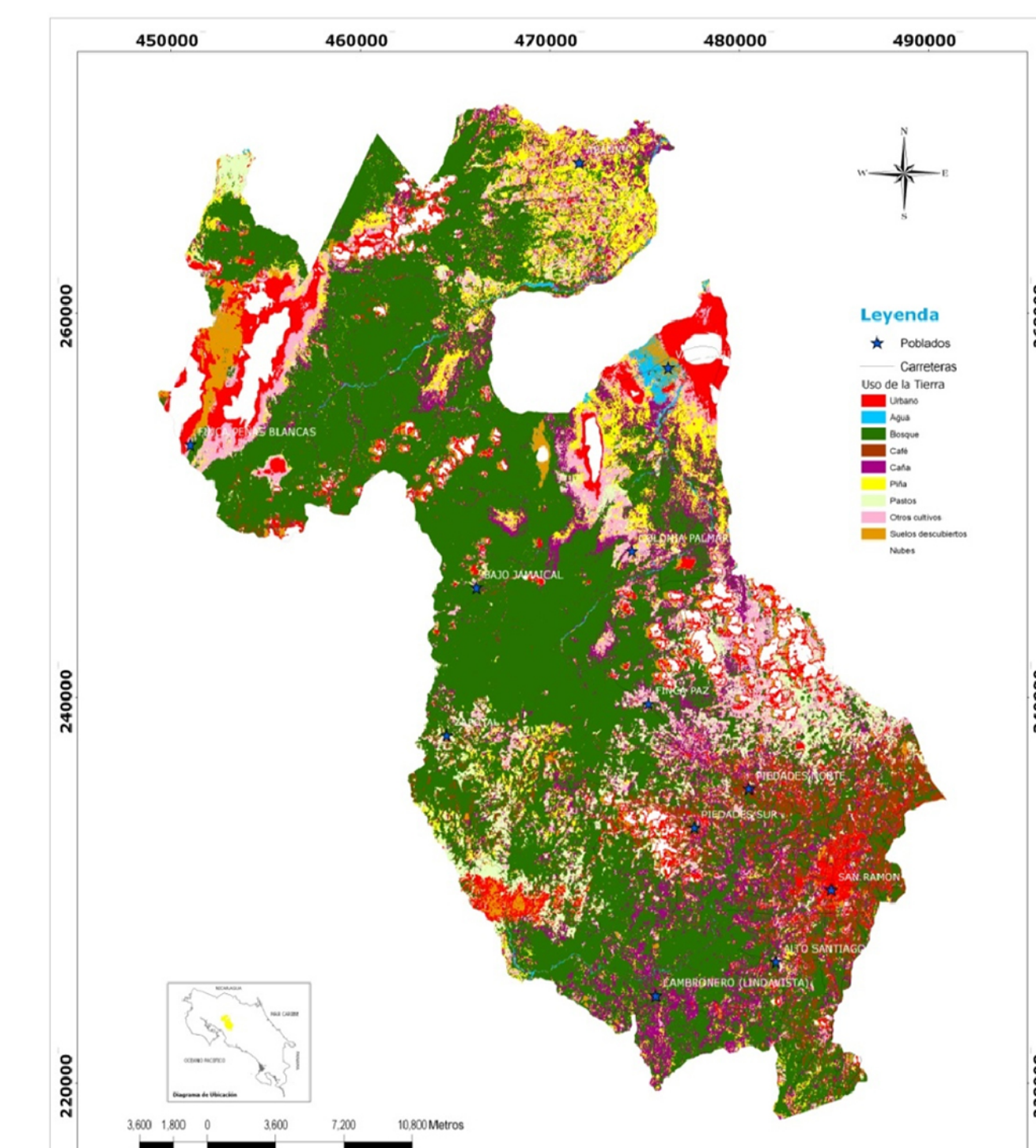
## Three classifications Land Surface



First classification - 20 June 2007



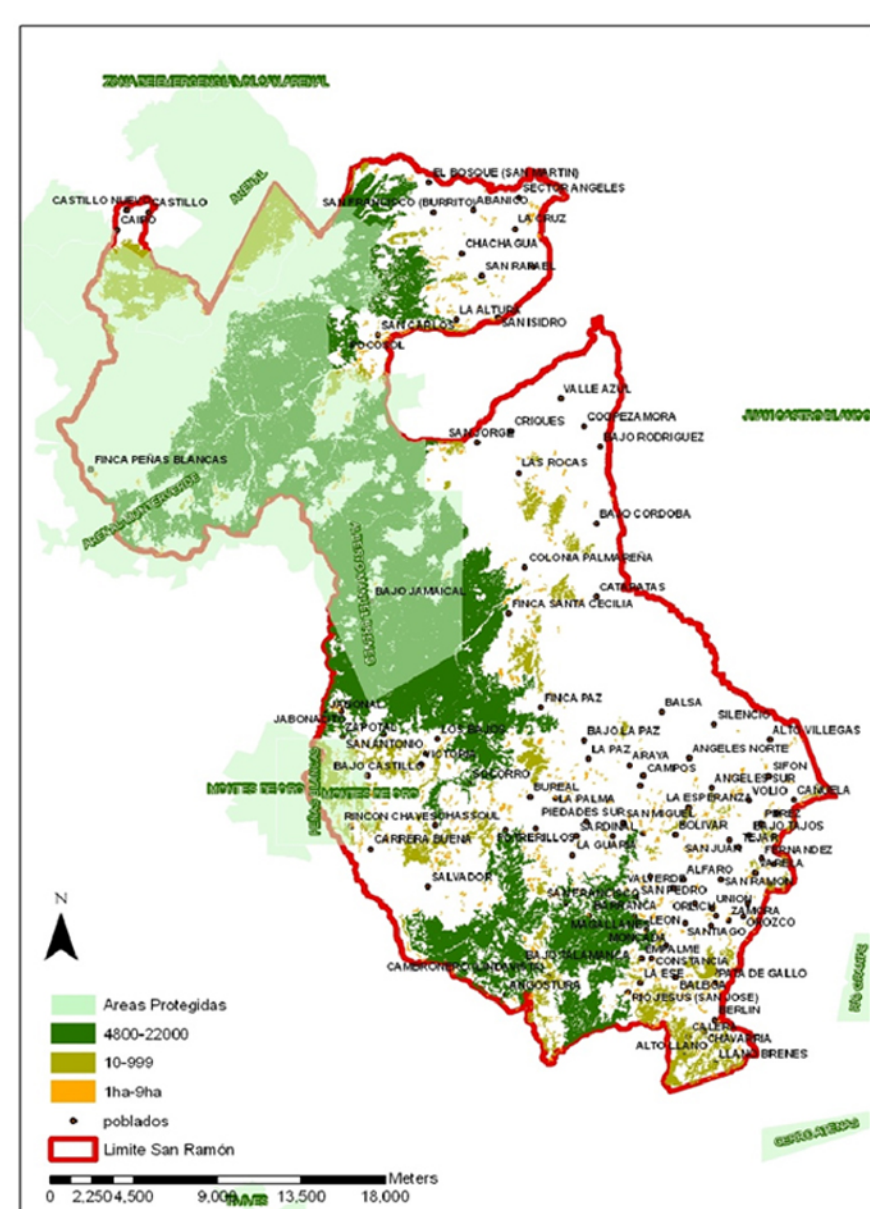
Second classification - 23 August



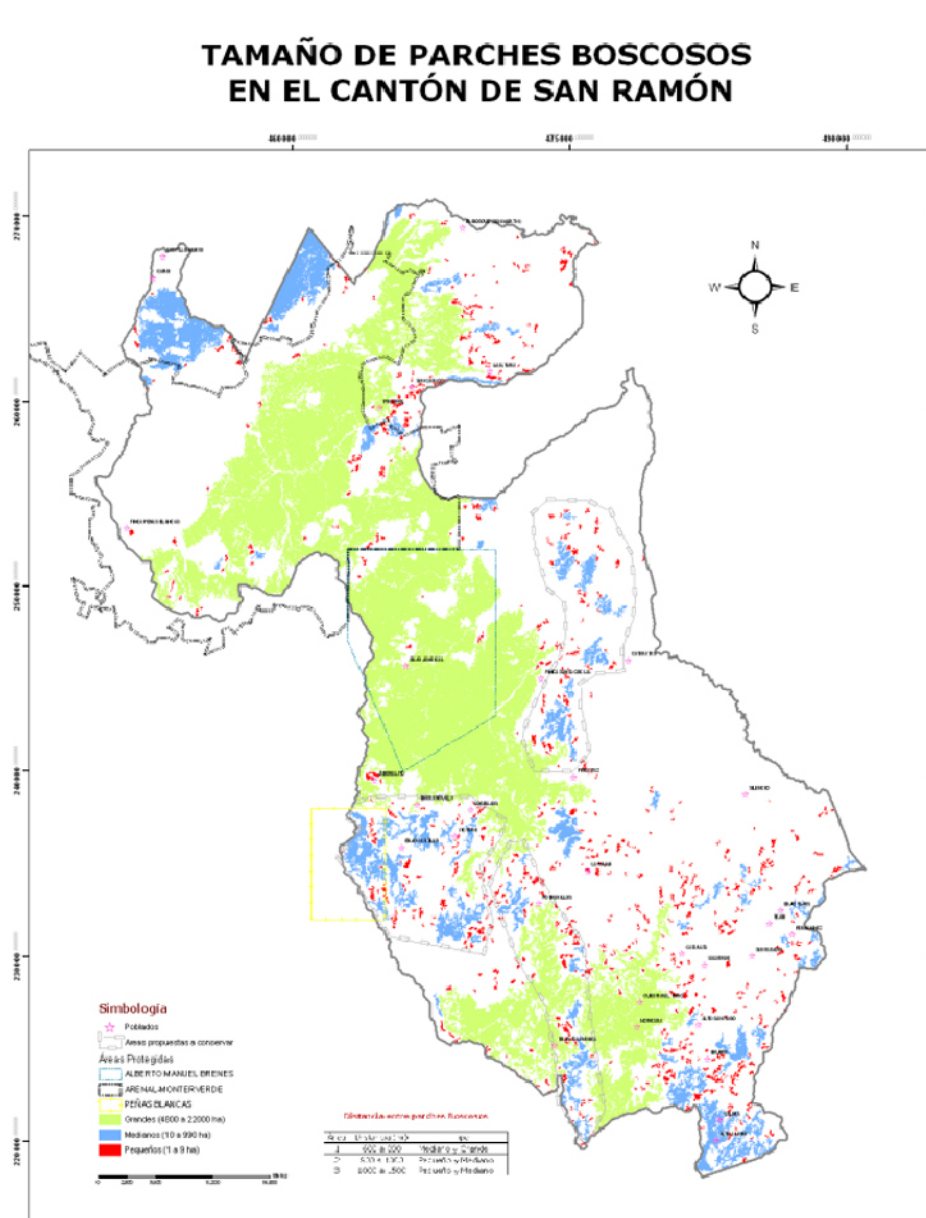
Third classification - 19 Noviembre 2007

## Mapping Forest Coverage

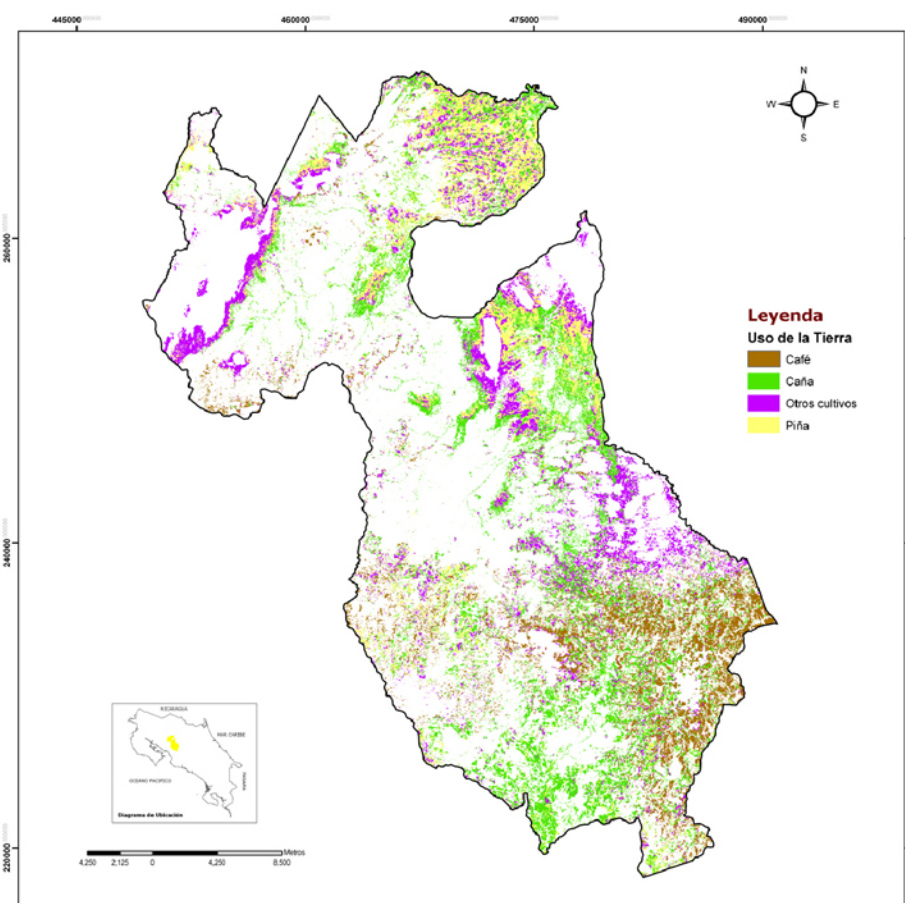
The spatial arrangement of large blocks coincide with the forest covers that are found in the town of San Ramon, specifically toward the north of the canton they correspond to the areas protected by the state (32 500) ha. approximately and they are: The Alberto manuel Brenes Biological Reserve, the buffer area of Monteverde, and National Park Arenal.



Forest inside the areas protected by the state and private areas in the canton of San Ramón, Costa Rica



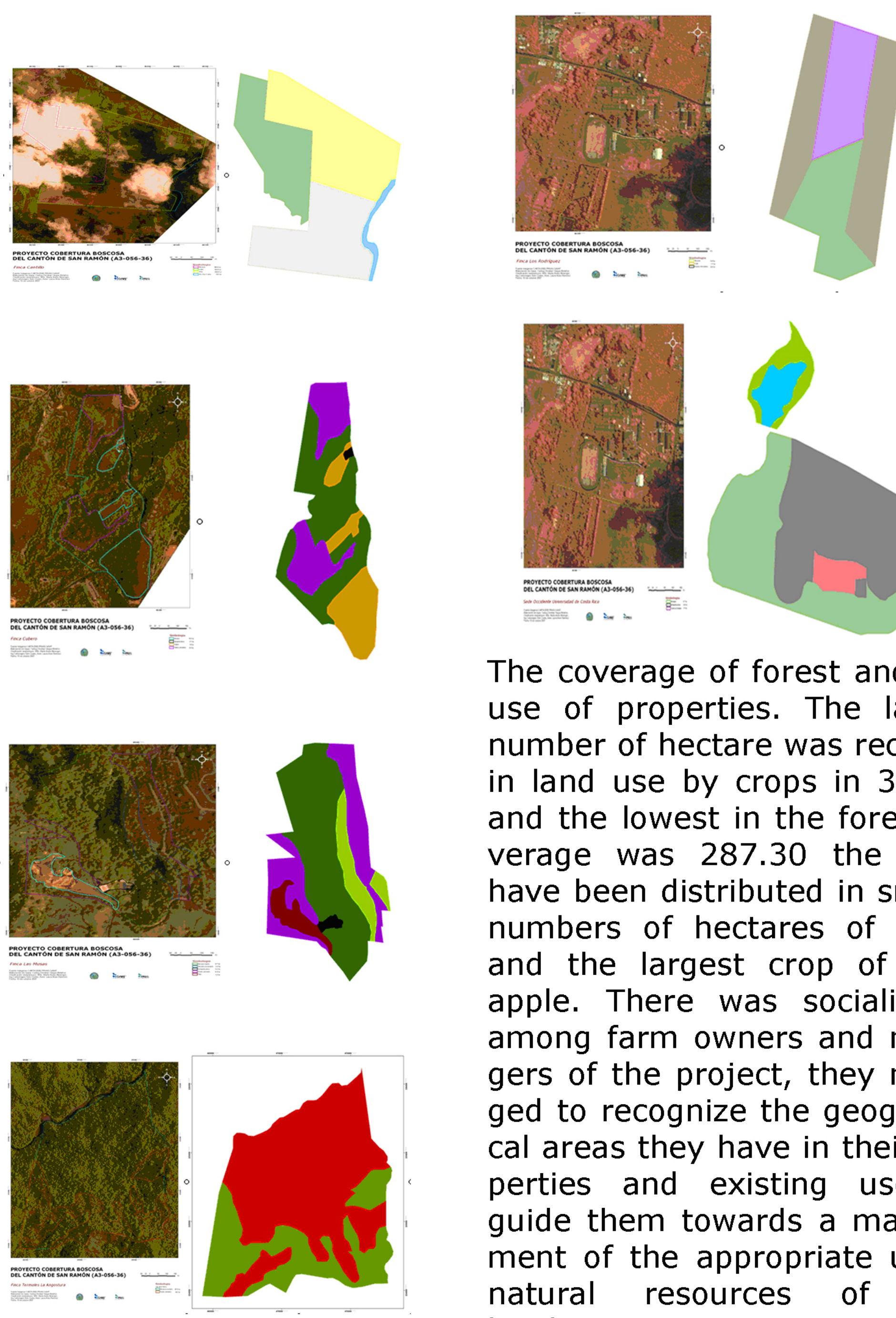
Concentration of forest path in small, medium and large in the canton of San Ramón, Costa Rica



## Crops

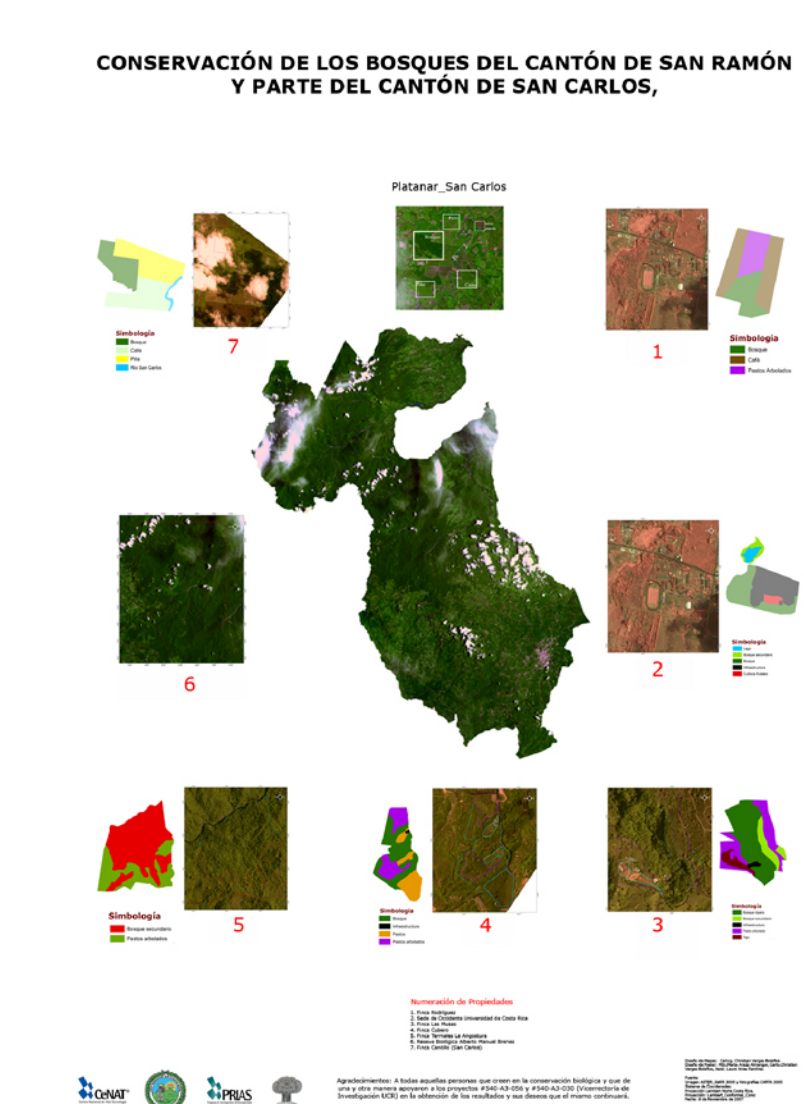
The major crops of the Canton of San Ramón located by the agronomist Juan Vicente Orozco (MAG) from highest to lowest were: Cane 11303.28 ha., pineapple 6813 ha, coffee 5643 ha. and other crops 3131 ha.

## Private Landowners



The coverage of forest and land use of properties. The largest number of hectare was recorded in land use by crops in 394 ha and the lowest in the forest coverage was 287.30 the crops have been distributed in smaller numbers of hectares of coffee and the largest crop of pineapple. There was socialization among farm owners and managers of the project, they managed to recognize the geographical areas they have in their properties and existing uses to guide them towards a management of the appropriate use of natural resources of their localities.

## Workshop with privates landowners



Owners of private landowners participated in the workshop "Keeping Forests in the canton of San Ramón." The owners of the soil marked the coverage of farm and were given maps of ground cover as an end product. Also received a poster.



Source: [biologia.ucr.ac.cr/images/sr6.jpg](http://biologia.ucr.ac.cr/images/sr6.jpg)  
(30 April 2009).  
Alberto Manuel Brenes Biological Reserve

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Poster design: MSc. Marta Araúz Almengor  
Carto. Christian Vargas Bolaños  
Text writing: MSc. Marta Araúz Almengor  
Source of Maps:  
ASTER SWIR 2005 image  
Coordinates System:  
Costa Rica Lambert North  
Projection:  
Lambert\_Conformal\_Conic  
Poster Date:  
30 April 2009