To analyze the historical fire regime and its relation with land use and land cover (LULC) changes in the territory of the Autonomous Community of Madrid, between 1984 and 2010

Study area:
- 8,026 km²
- 6,409,768 inhabitants (2012)
- Mediterranean climate
- High rate of urban development in the last decades

Identification of Decrease from Low Risk LULC Homogenization

Analysis of the fire regime from burned area maps obtained from Landsat data

Analysis of LULC changes and their relation to fire occurrence

The most prominent LULC changes within burned areas were:
1) from forest to shrubs or sparse vegetation
2) from non irrigated crops to pastures or industrial areas
3) from sparse vegetation to shrubs

RESULTS

Fire perimeters obtained from Landsat (1984-2010)

Statistical validation

Burned area and selection ratio by LULC categories

CONCLUSIONS

- Mapping method simple and consistent
- High variability of fire characteristic (frequency and size)
- Decrease in total area and stable number of fires from 2006
- Decrease in average fire size
- Low fire recurrence
- LULC categories affected by fires change among dates

Task involved:
1. Homogenization of the LULC legends to CORINE level 3
2. LULC changes analysis
3. Spatial crossing between LULC changes maps and fire perimeters

OBJECTIVES

PHASE 1

Landsat TM/ETM+

BAY > 150

PHASE 2

Landsat MSS

BAY > 150

Visual analysis

PHASE 3 (black line)

Validation

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ACKNOWLEDGEMENTS: This work was supported by the “EU7th Framework Programme” through the FUME Project “Forest fires under climate, social and economic changes in Europe, the Mediterranean and other fire-affected areas of the World” (grant agreement n 248385). Thank you to the United States Geological Survey for the open access policy of the Landsat data.