



# ANALYSIS OF LUNG CANCER BY HISTOLOGIC TYPE IN THE OPEN REGISTRY AREA

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## 1 – INTRODUCTION

Lung tumors represent a very heterogeneous category histologically, with variable prognosis and sensitive to different risk factors. Association between tumor histology and exposure to particulate air pollution was found in ESCAPE study (Raaschou-Nielsen et al., 2013), while significant differences in the spatial distribution for histological group was found in the Maine study (Hosgood III et al., 2013).

## 2 – OBJECTIVES

- Survey the area covered by Cancer Registries (CRs) belonging to Open Registry Network
- Temporal analysis (trend)
- Detection of possible differences in the geographical distribution
- Subsequent evaluation of etiological hypotheses

## 3 – MATERIALS AND METHODS

- Selection of primary tumors of the lung registered by the eight CRs of the Network
- Restricting the analysis to a five-year period for each CR (time frame 2002-2011)
- Count and exclusion of tumors unclassified (morphology 8000/3) and of other morphologies not specific
- Grouping tumors on the basis of morphology code
- Calculation of standardized rates by area and gender (SeerStat)
- Calculation of standardized rates by gender and histological group (SeerStat)
- Trends for histological group and area (SeerStat)
- Calculation of municipality rates and identification of possible clusters (SatScan) and creation of maps (GIS)

Tab. 1 – Groupings for histology

GROUP	MORPHOLOGY CODES (ICDO-2)
squamous	8050, 8052, 8070, 8071, 8072, 8073, 8074, 8075, 8076, 8083, 8084
adk	8140, 8200, 8201, 8211, 8230, 8250, 8251, 8252, 8255, 8260, 8312, 8410, 8430, 8450, 8460, 8480, 8481, 8490, 8530, 8550, 8560, 8562, 8570
small cell	8002, 8041, 8042, 8043, 8044, 8045
large cell	8003, 8012, 8013, 8020, 8021, 8046, 8082, 8141, 8246, 8247, 8253, 8254, 8574
sarcomatoid	8022, 8030, 8031, 8032, 8033, 8941
carcinoid	8240, 8241, 8243, 8244, 8249
sarcomas and other	88xx, 89xx, 91xx
excluded	8001, 8010, 8011, 8090, 8110, 8123, 8130, 8310, 8323, 9260, 95xx, 96xx, 97xx

Fig. 1 – Open Registry Area

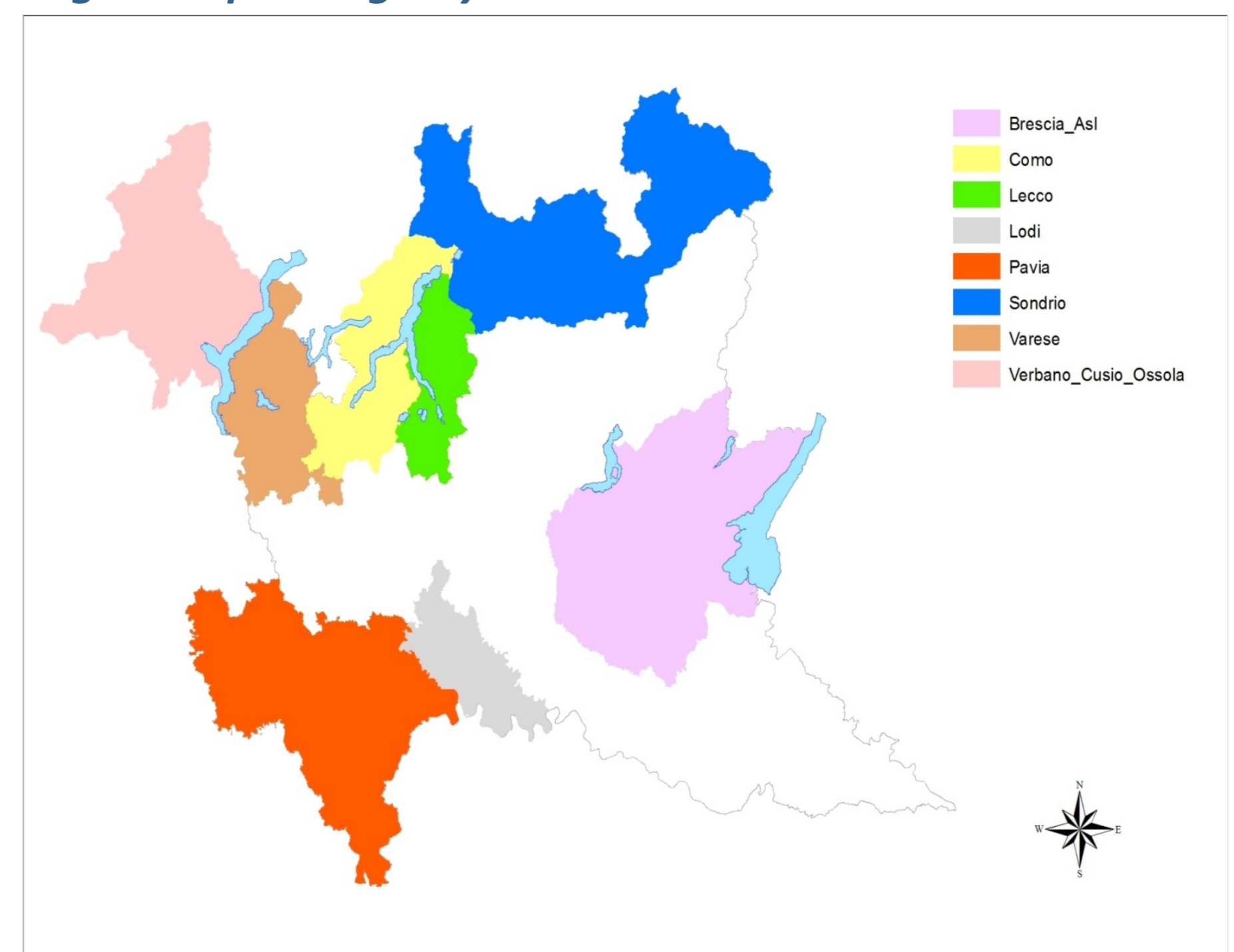


Fig. 2 – Significant clusters found for Squamous group

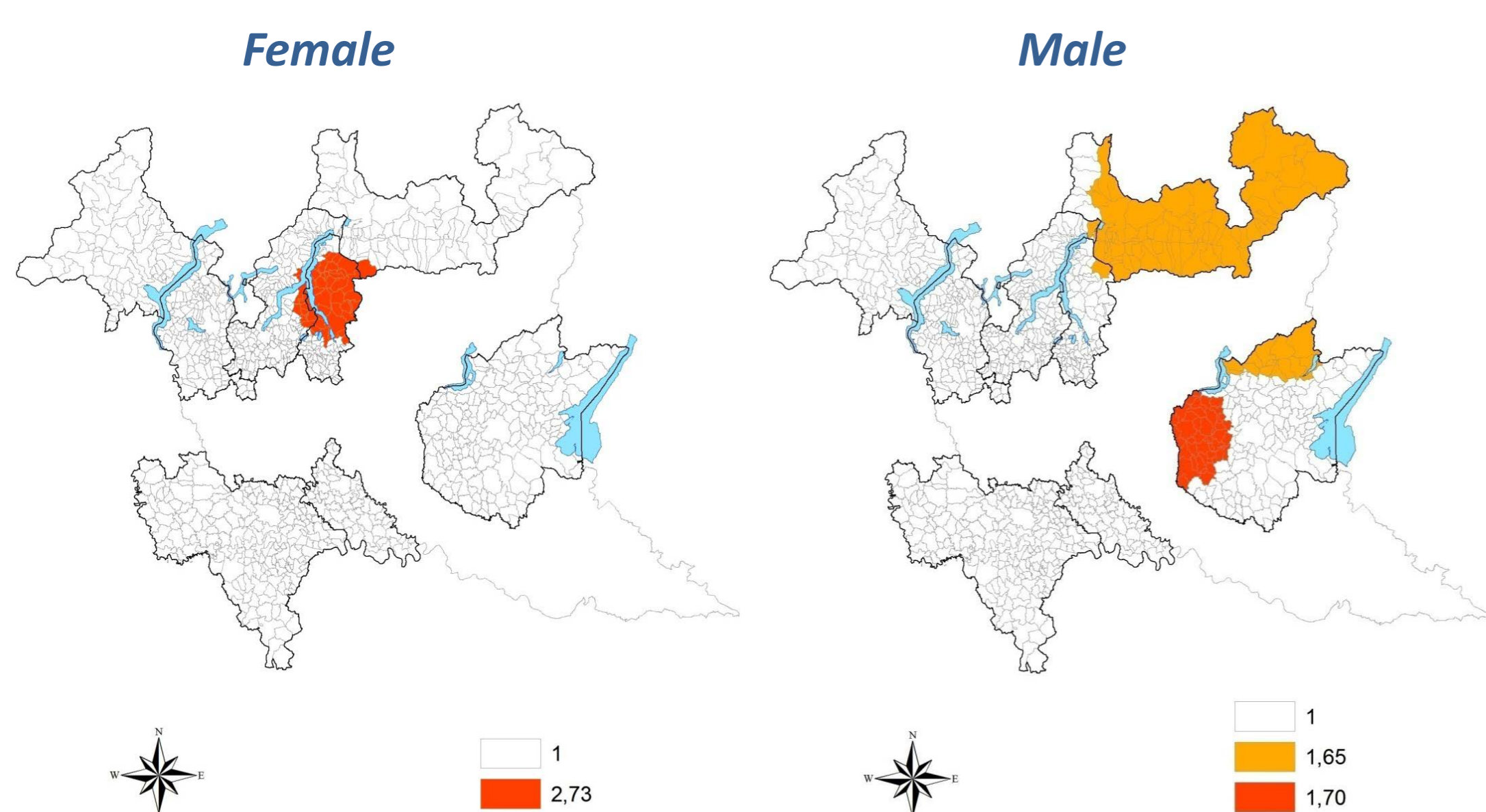
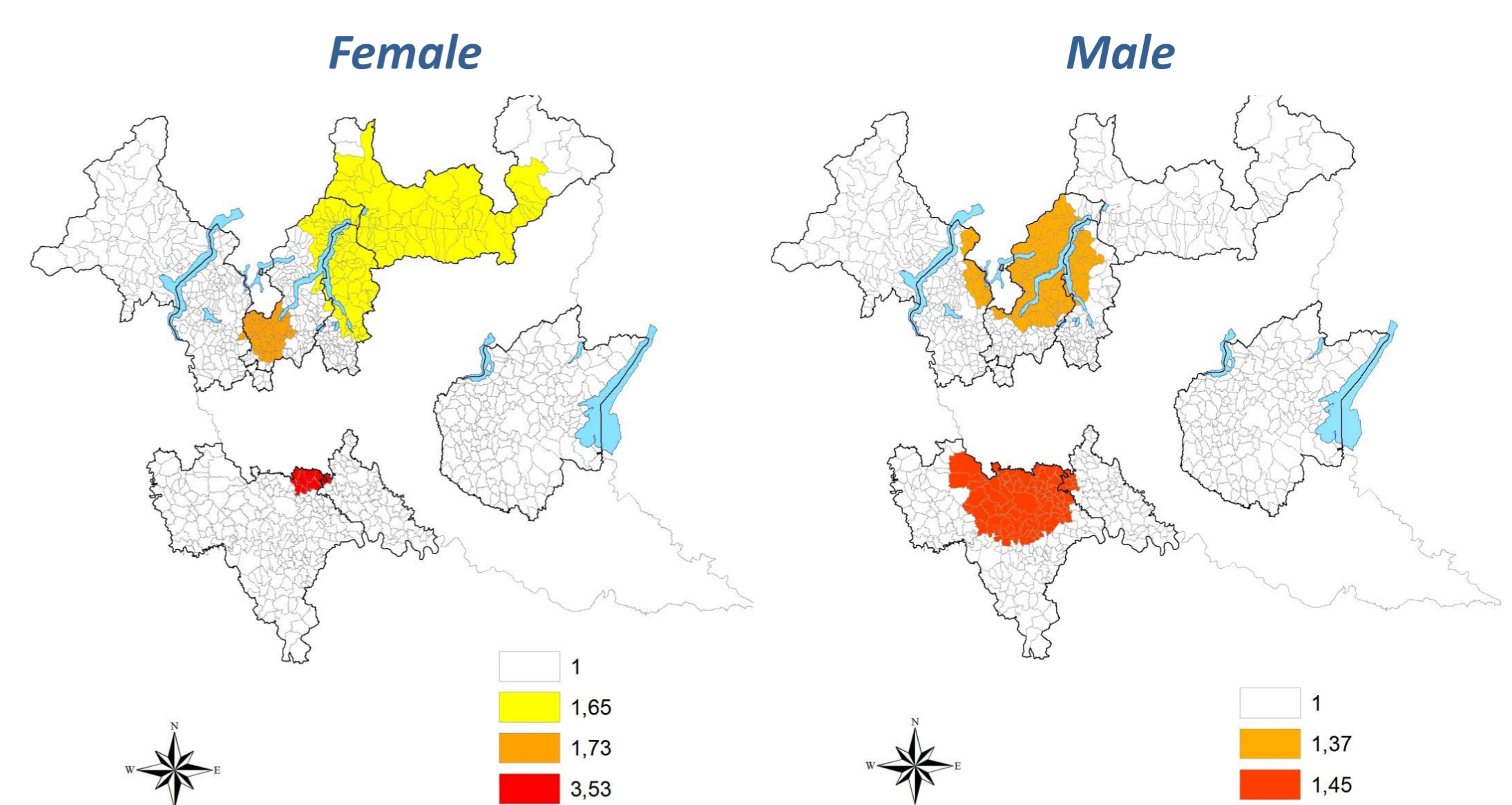


Fig. 3 – Significant clusters found for ADK group



## 4 – CONCLUSIONS

- Significant differences were found in the distribution of histological groups by area and of incidence rates by histological group
- The clusters identified must be carefully analyzed, but they are a sign of the presence of geographical variability
- Problems: tumors not classified (older subjects, no histological examinations); histological groups with low number of cases
- Etiological hypothesis to test: air pollution, smoking, SES