



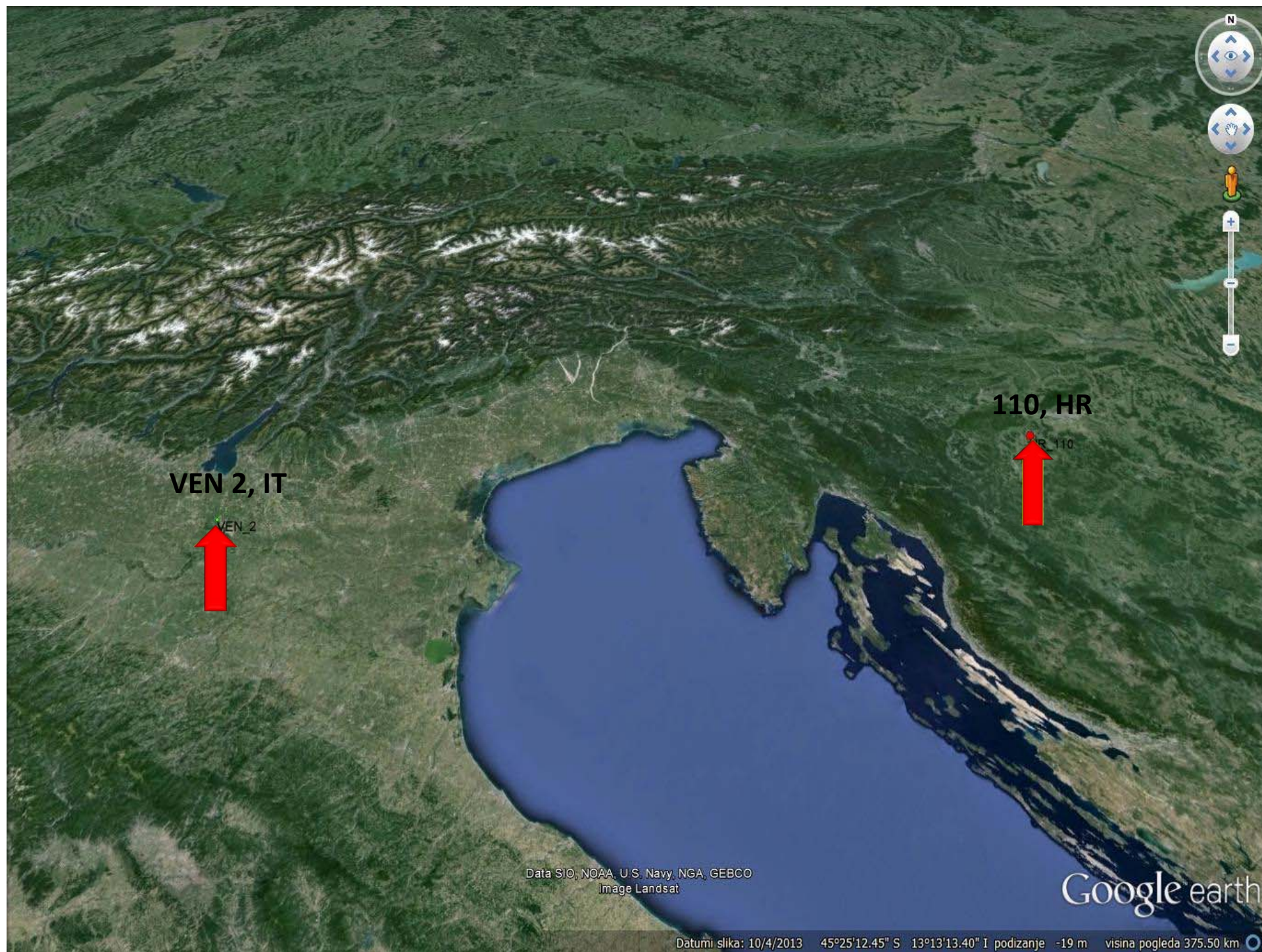
# Comparing two permanent plots in Croatia and Italy with different levels of nitrogen deposition

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**VEN 2, IT**

VEN\_2

**110, HR**

HR\_110

Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image Landsat

Google earth

Datumi slika: 10/4/2013 45°25'12.45" S 13°13'13.40" I podizanje -19 m visina pogleda 375.50 km





**Jastrebarski lugovi, 110  
dominated by pedunculate  
oak (*Quercus robur* L.)**



**Pokupsko basin floodplain,  
close to Zagreb  
(agricultural area)**





**Bosco Fontana, VEN2**  
**dominated by pedunculate oak (*Quercus robur* L.)**



**located in the Po plain,  
European area rich in industries & agriculture**

**3rd ICP Forests Scientific Conference, Athens, Greece, 26-27 May 2014**

# METHODS AND OBJECTIVES

## Methods:

- deposition (BOF, THR), foliar composition comparison
- defoliation, growth comparison

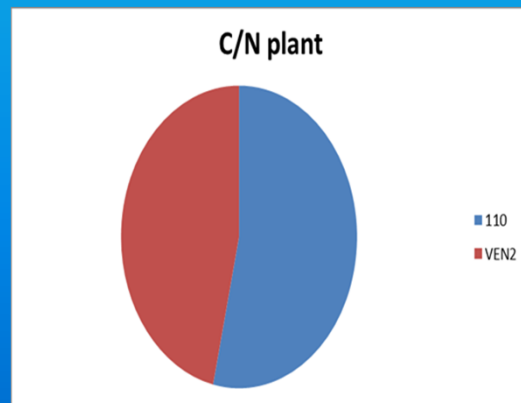
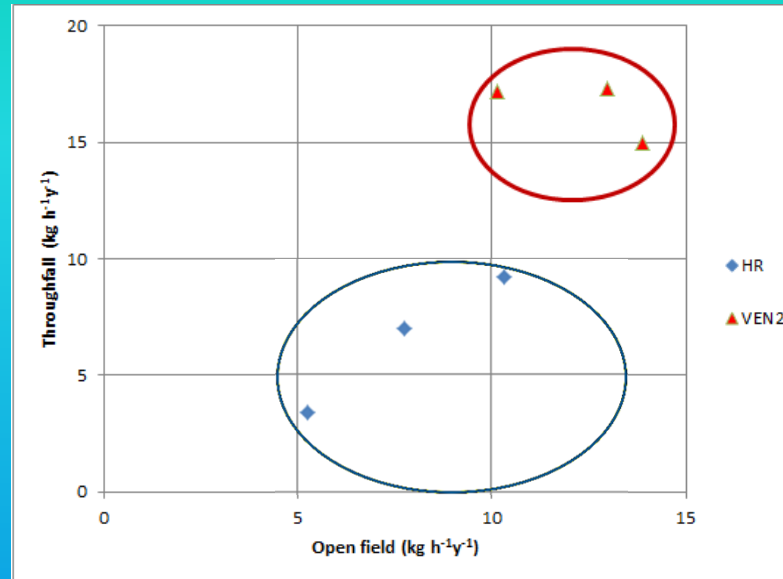
## Long term objectives:

- 1) to identify differences in N deposition and precipitation between the sites and across time (2010 - )
- 2) to evaluate differences in N uptake/release in the canopy and N ratio to other elements in foliage
- 3) to evaluate if high amounts of N deposition can stimulate tree growth at different defoliation levels.

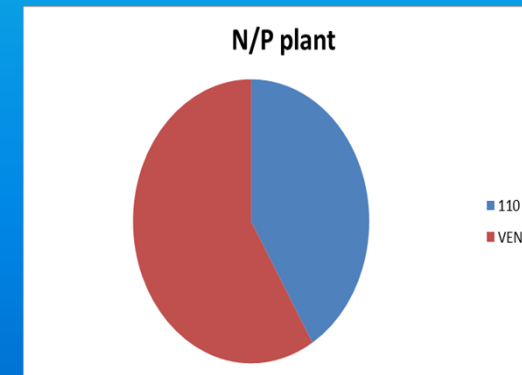


# RESULTS

- ❖ VEN2 N deposition stronger than in plot 110

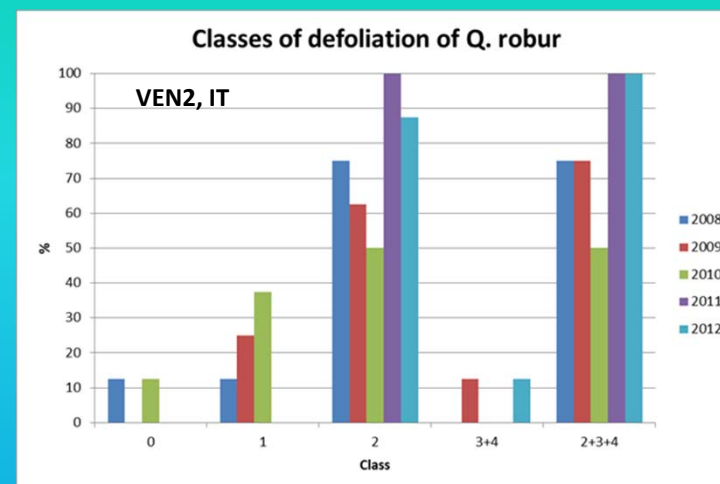
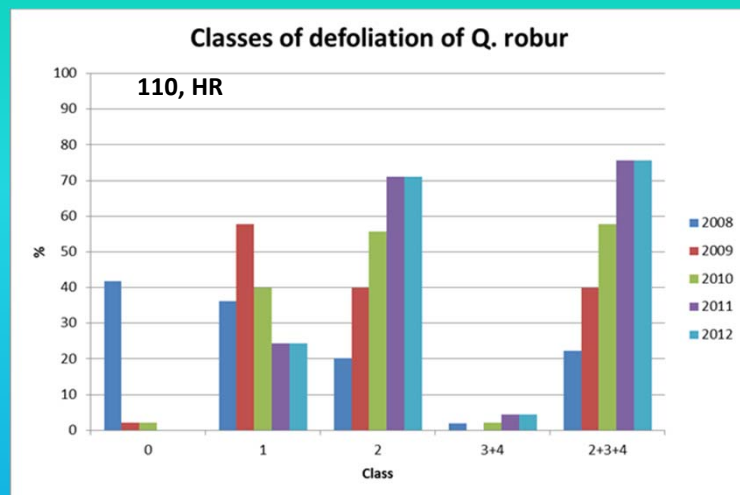


- ❖ foliar tissues show C:N ratio similar
- ❖ N:P ratio is higher in plot VEN2





# RESULTS



❖ defoliation larger than 25% is higher in plot VEN2

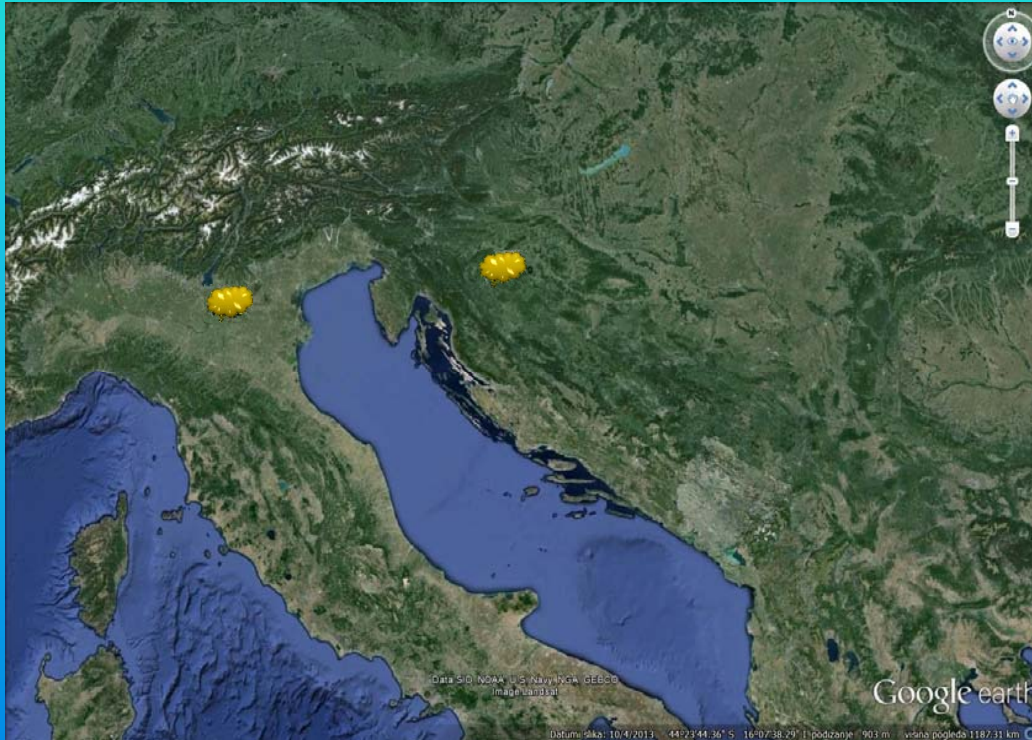
2010											
Plot	Tree density n ha <sup>-1</sup>	Mortality n ha <sup>-1</sup>	Ingrowth n ha <sup>-1</sup>	Basal area (total) m <sup>2</sup> ha <sup>-1</sup>	Mean dbh cm	Mean height m	Top height m	Volume m <sup>3</sup> ha <sup>-1</sup>	Age y	ImV	Actual bai m <sup>2</sup> ha <sup>-2</sup> y <sup>-1</sup>
VEN2 IT	428	56	52	27,33	28,5	25,1	29,1	473,9	125	3,79	0,3
110 HR	596	N/A	N/A	39,6	29,1	N/A	N/A	498,0	136	6,42	0,4

❖ similar age, mean DBH & volume; 110 HR higher tree density & basal area (Common hornbeam)

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# CONCLUSION-preliminary results



- N deposition higher VEN2, IT across time, exceedance of CLs
- VEN2 defoliation more pronounced
- C:N in foliage similar; the N:P ratio is higher in plot VEN2
- 110, HR & VEN2, IT similar growth rates
- both plots normal volume for the age



- Plan: to include more parameters (soil solution, soil, meteorological etc.)





# THANK YOU!

3rd ICP Forests Scientific Conference, Athens, Greece, 26-27 May 2014