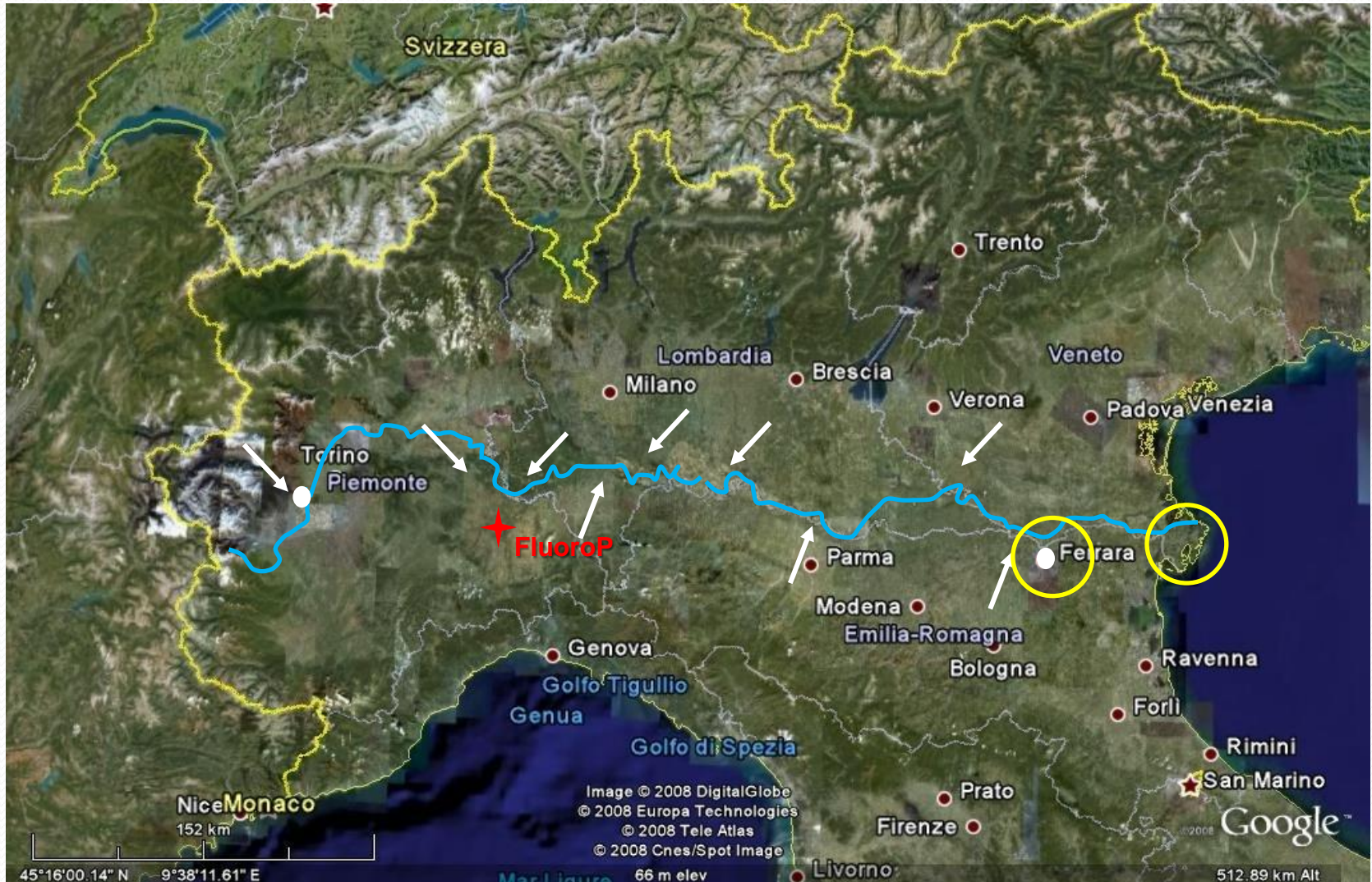


La contaminazione da PFAS nel bacino del fiume Po

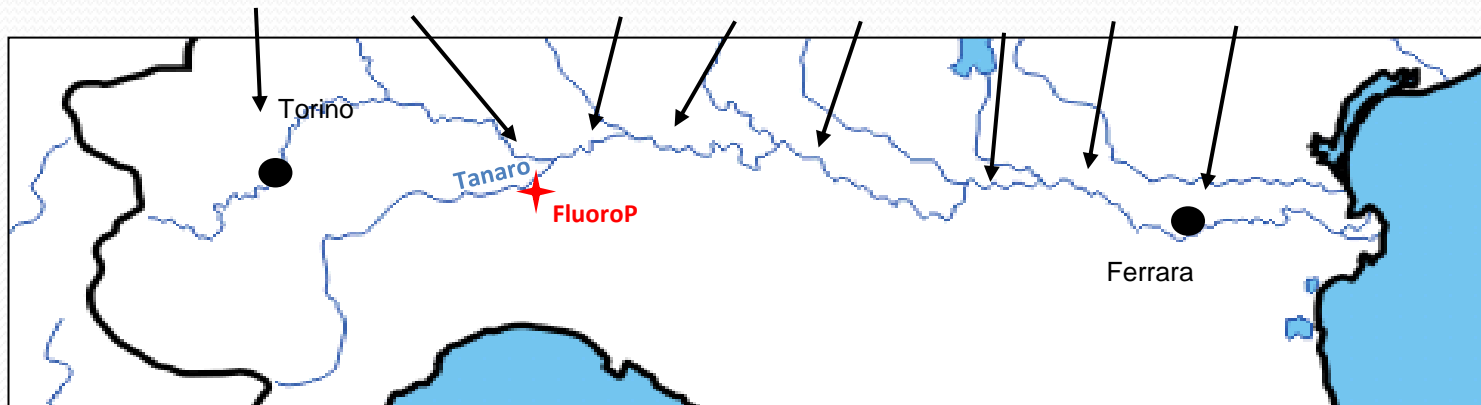
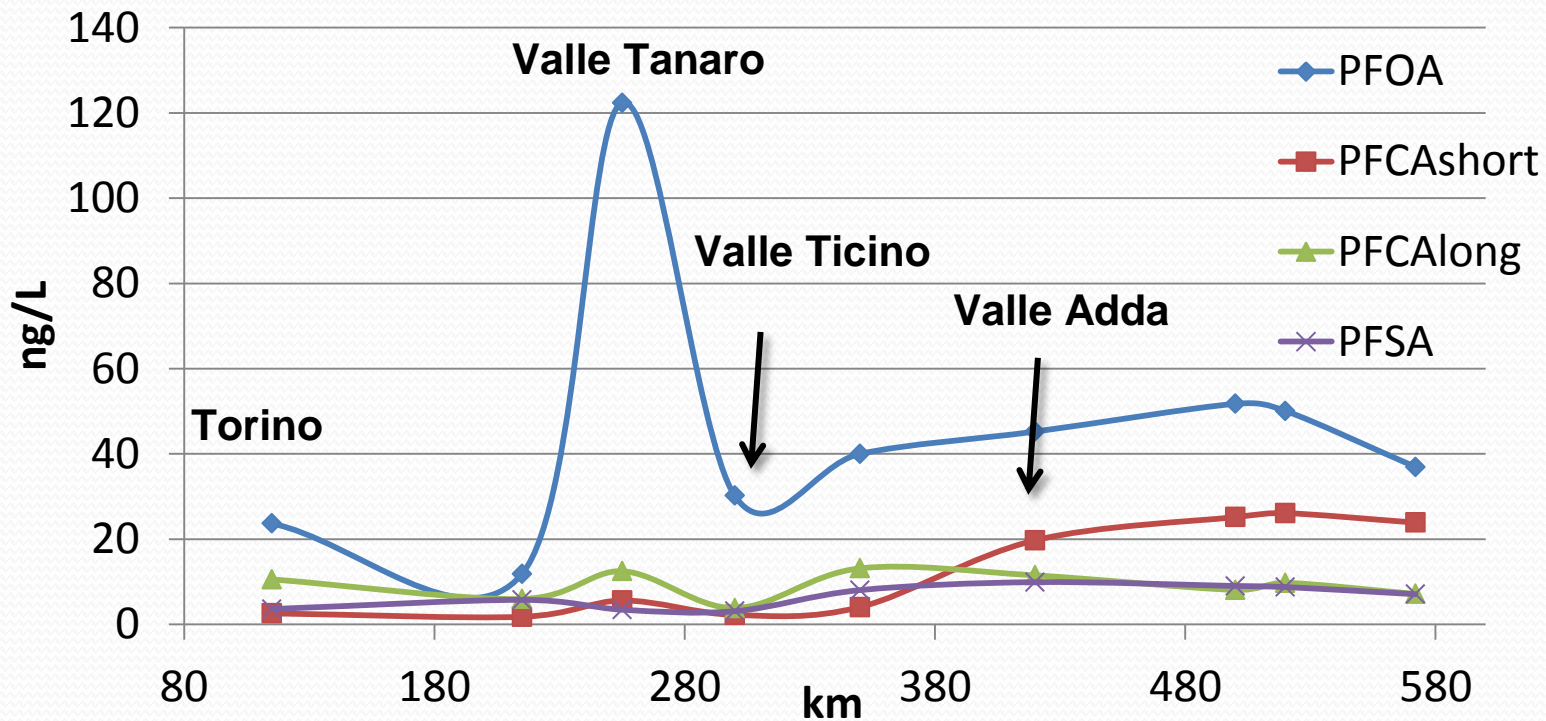


Sara VALSECCHI
Istituto di Ricerca sulle Acque - CNR
valsecchi@irsa.cnr.it

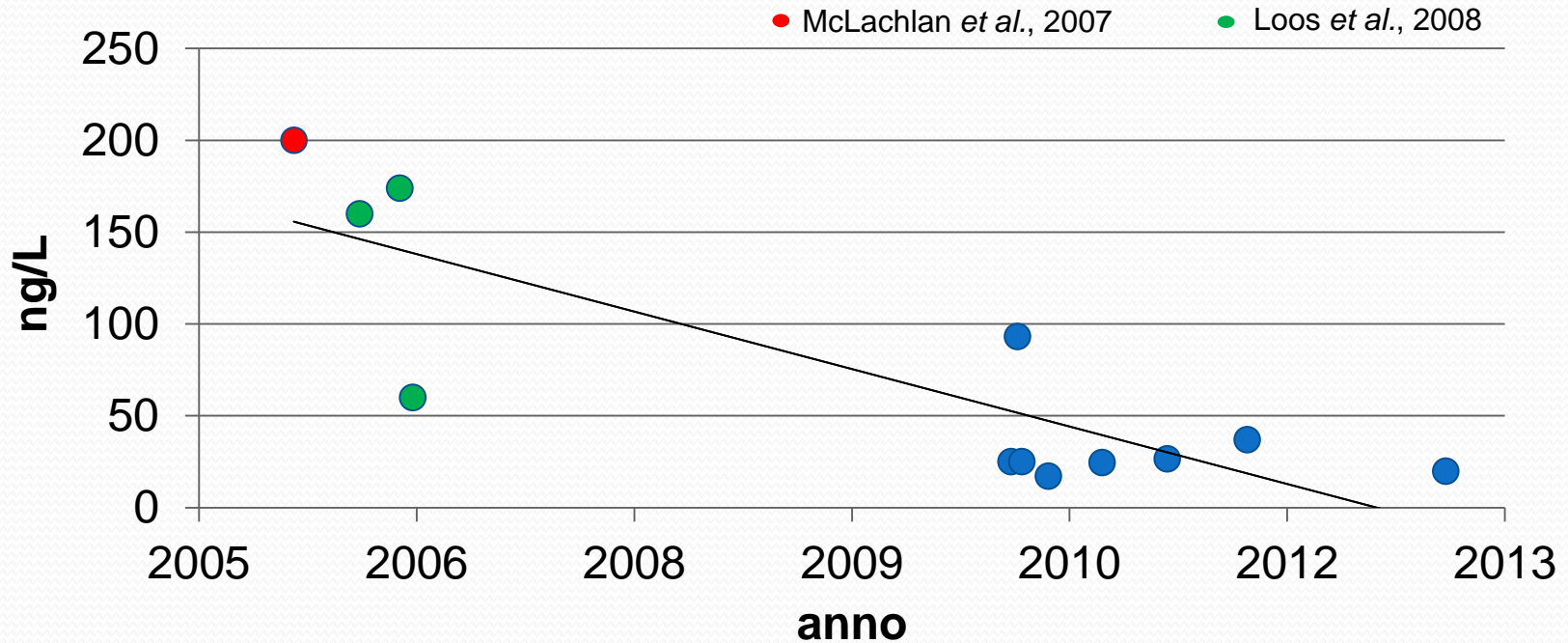
BACINO DEL FIUME PO



Asta del fiume Po conc. gennaio 2012



PFOA: Po a Ferrara (chiusura di bacino)

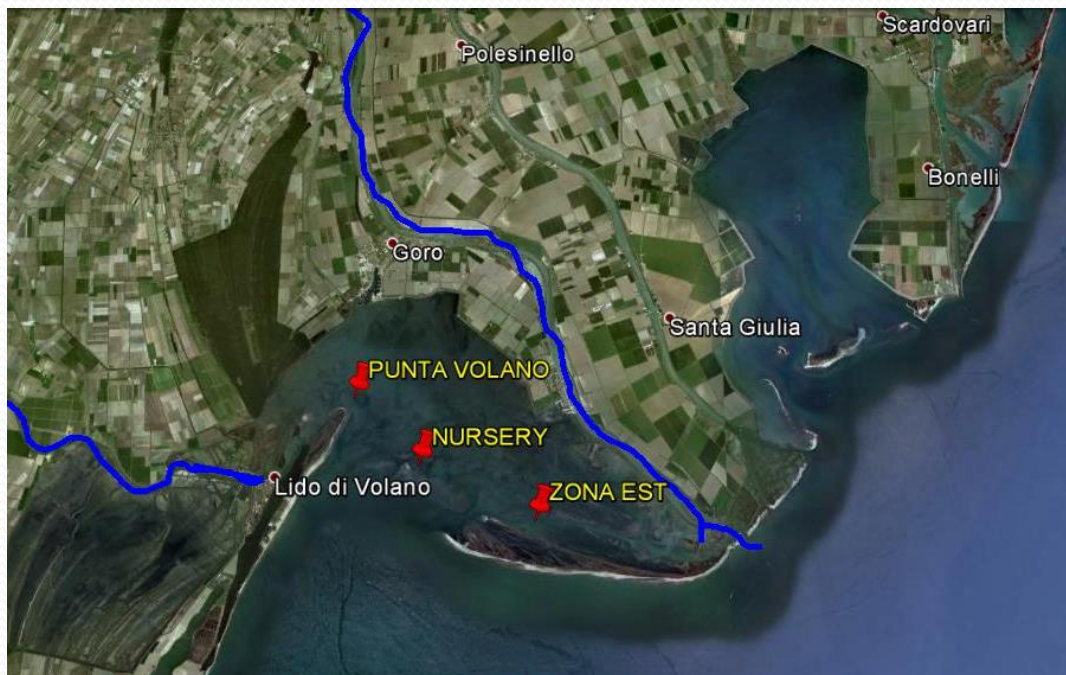


DW Ferrara anni 2008-2013

PFOA	8 – 67 ng/L
Σ PFAS	27 -120 ng/L

Delta del Po: Sacca di Goro aprile 2013

ACQUA	PFOA ng/L	Σ PFAS ng/L
Po-PLS	20	52
Po di Goro	15	33
DW Goro	24	58



Acqua

Sedimento

Mitili: *Mytilus galloprovincialis*

Vongole: *Tapes philippinarum*

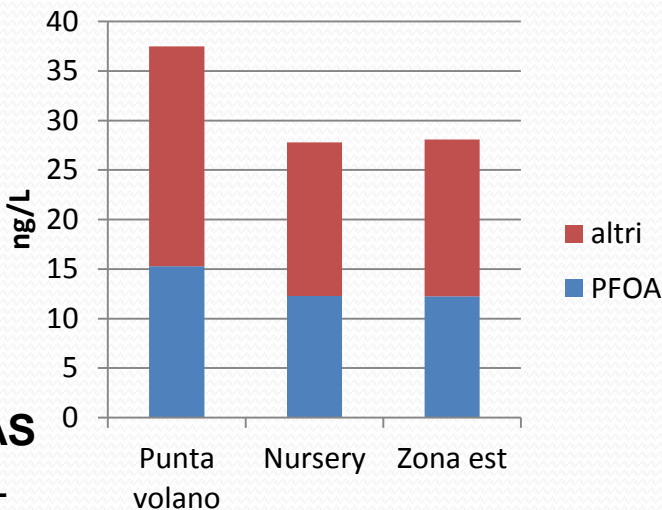
Delta del Po: Sacca di Goro aprile 2013



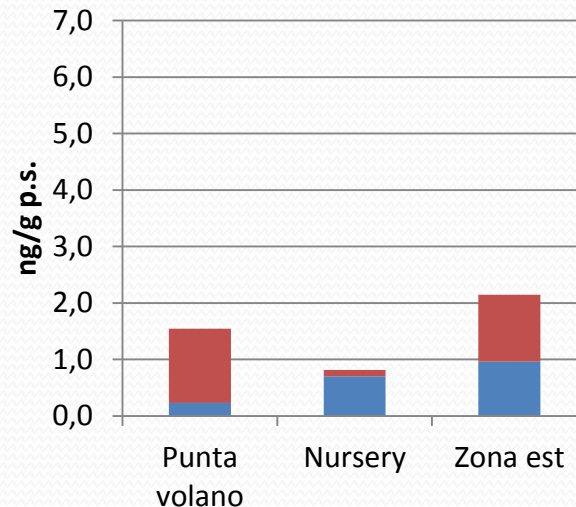
Po di Goro
PFOA **ΣPFAS**
 ng/L ng/L
 15 33



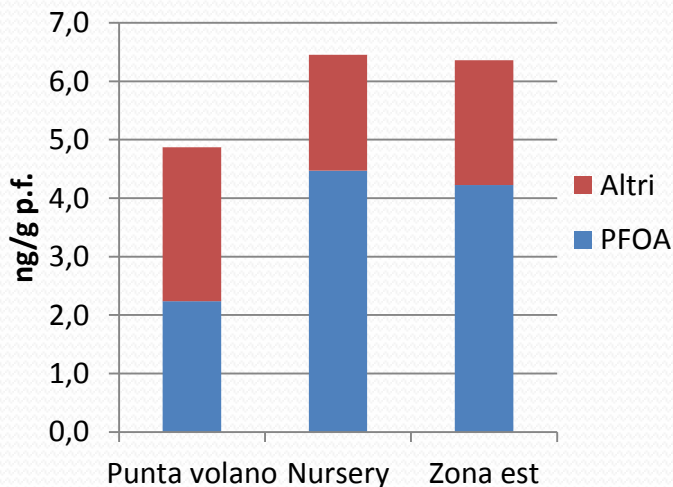
acqua



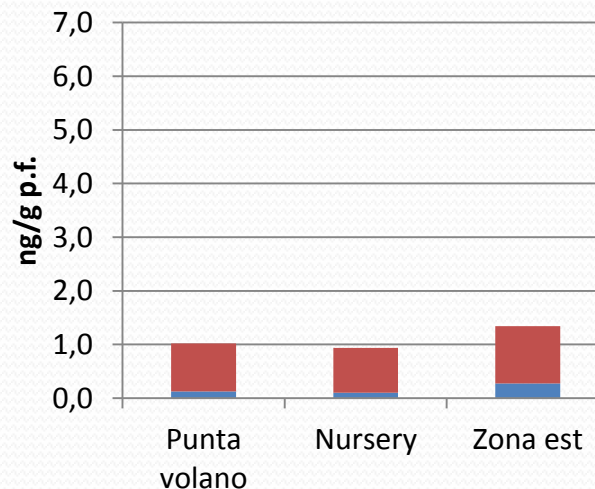
sedimento



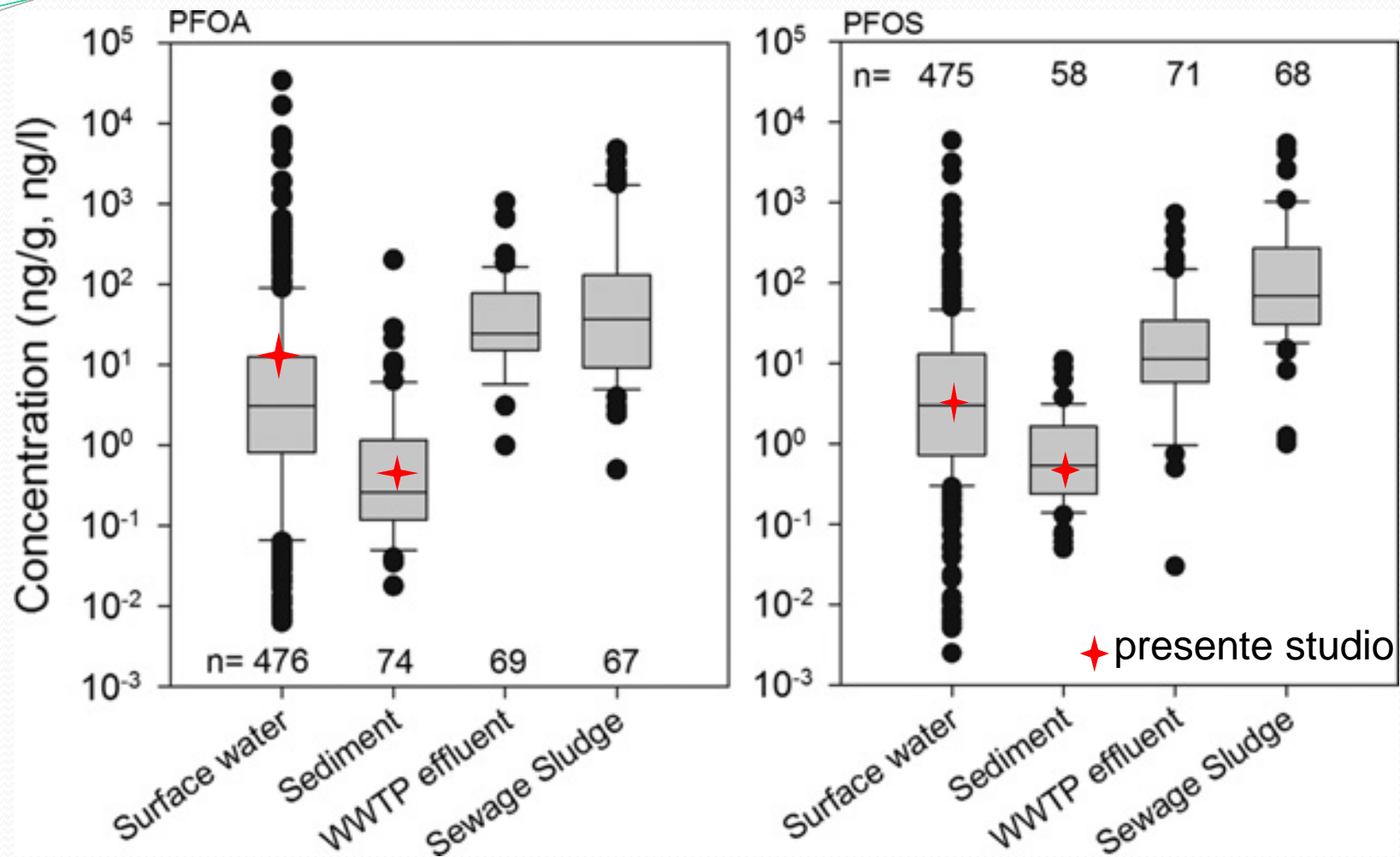
Tapes philippinarum



Mytilus galloprovincialis



Delta del Po: Sacca di Goro aprile 2013

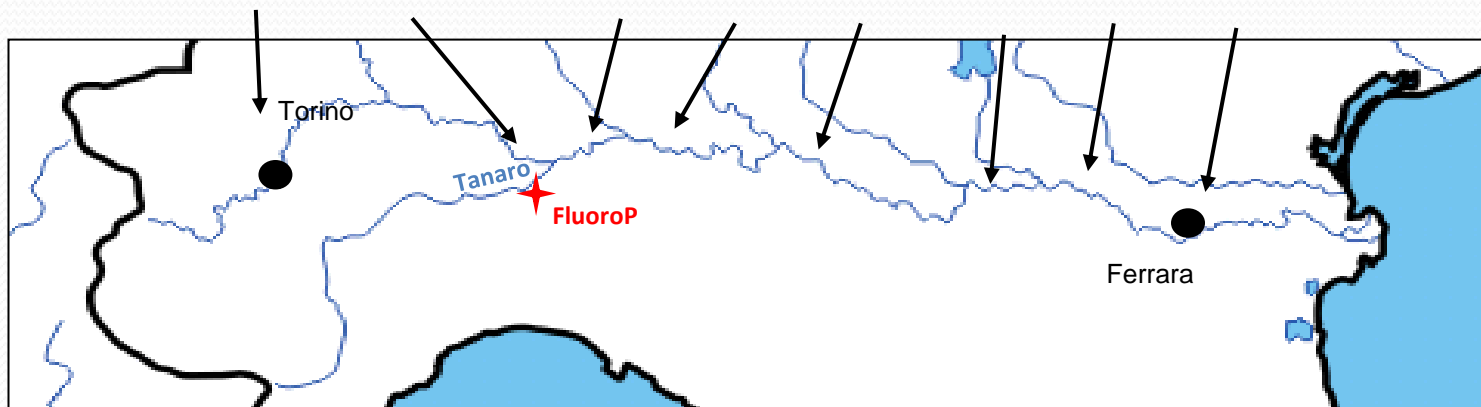
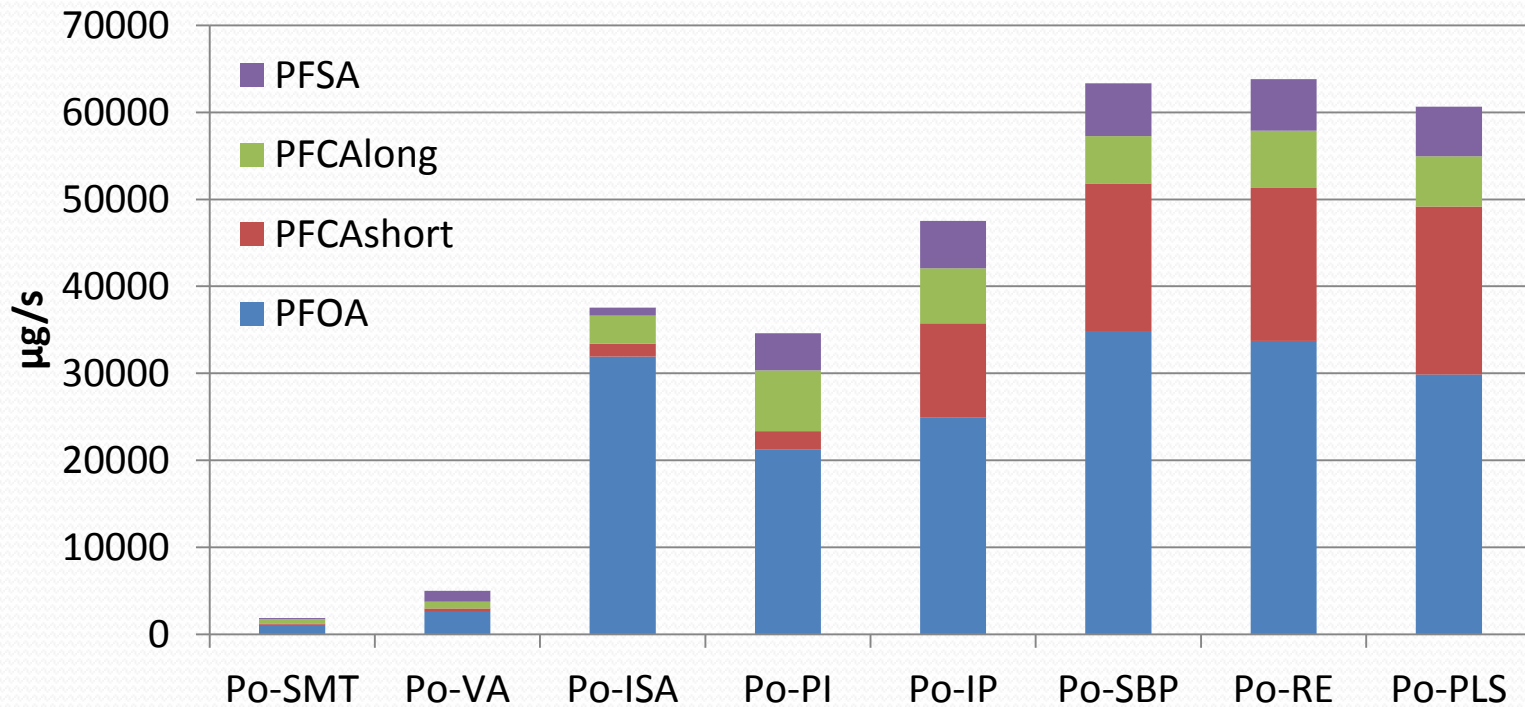


Review

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) in surface waters, sediments, soils and wastewater – A review on concentrations and distribution coefficients

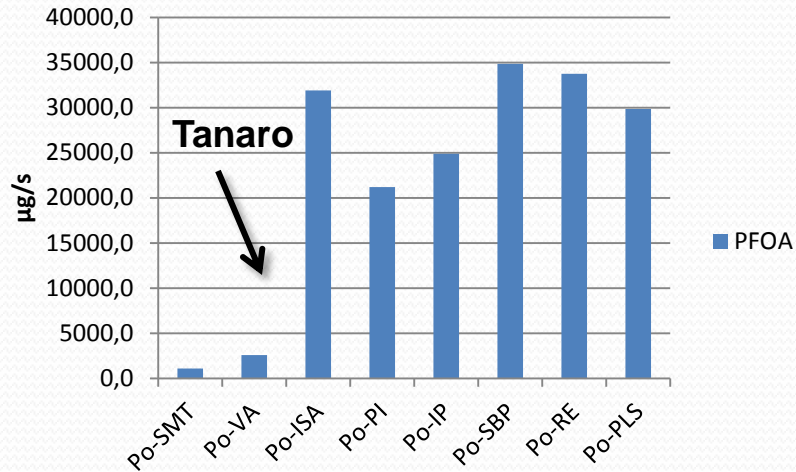
P. Zareitalabad^a, J. Siemens^{a,*}, M. Hamer^b, W. Amelung^{a,c}

Asta del fiume Po gennaio 2012

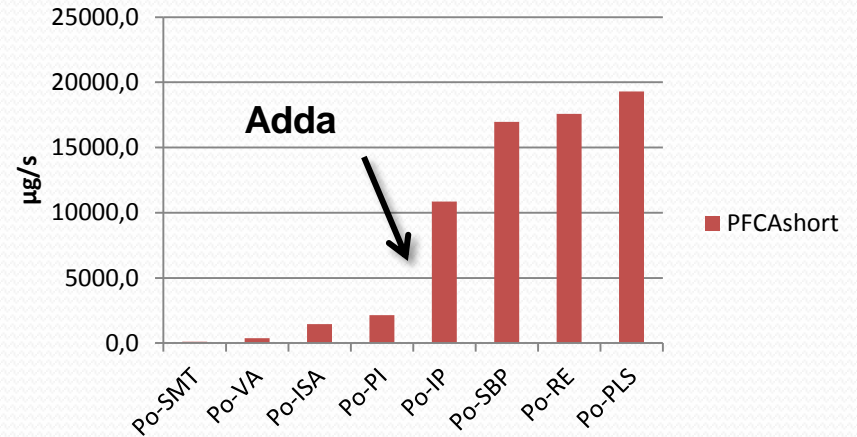


Asta del fiume Po carichi gennaio 2012

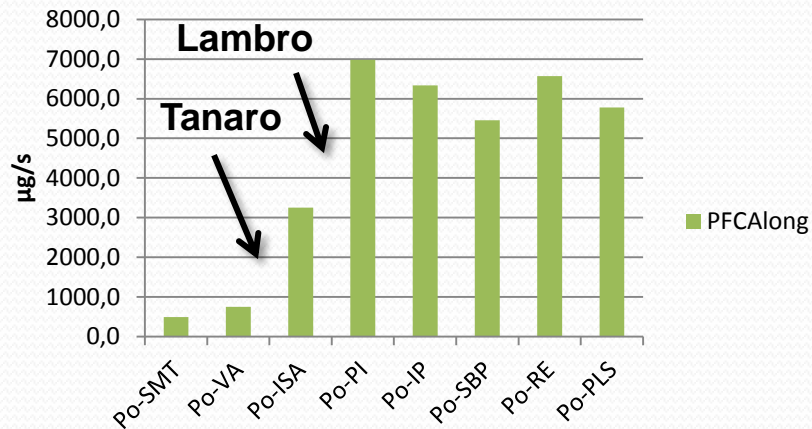
PFOA



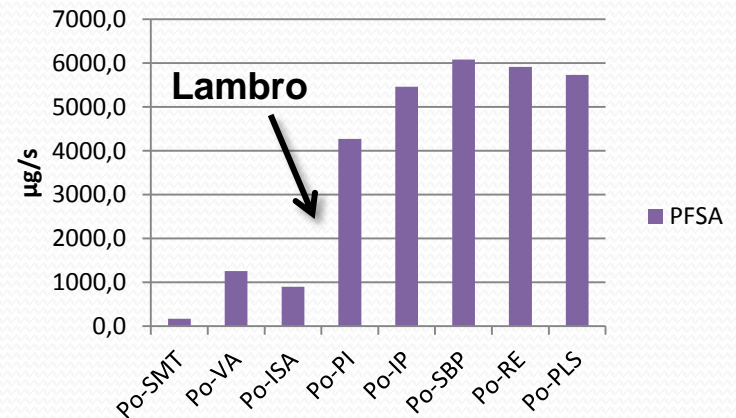
PFCAs short



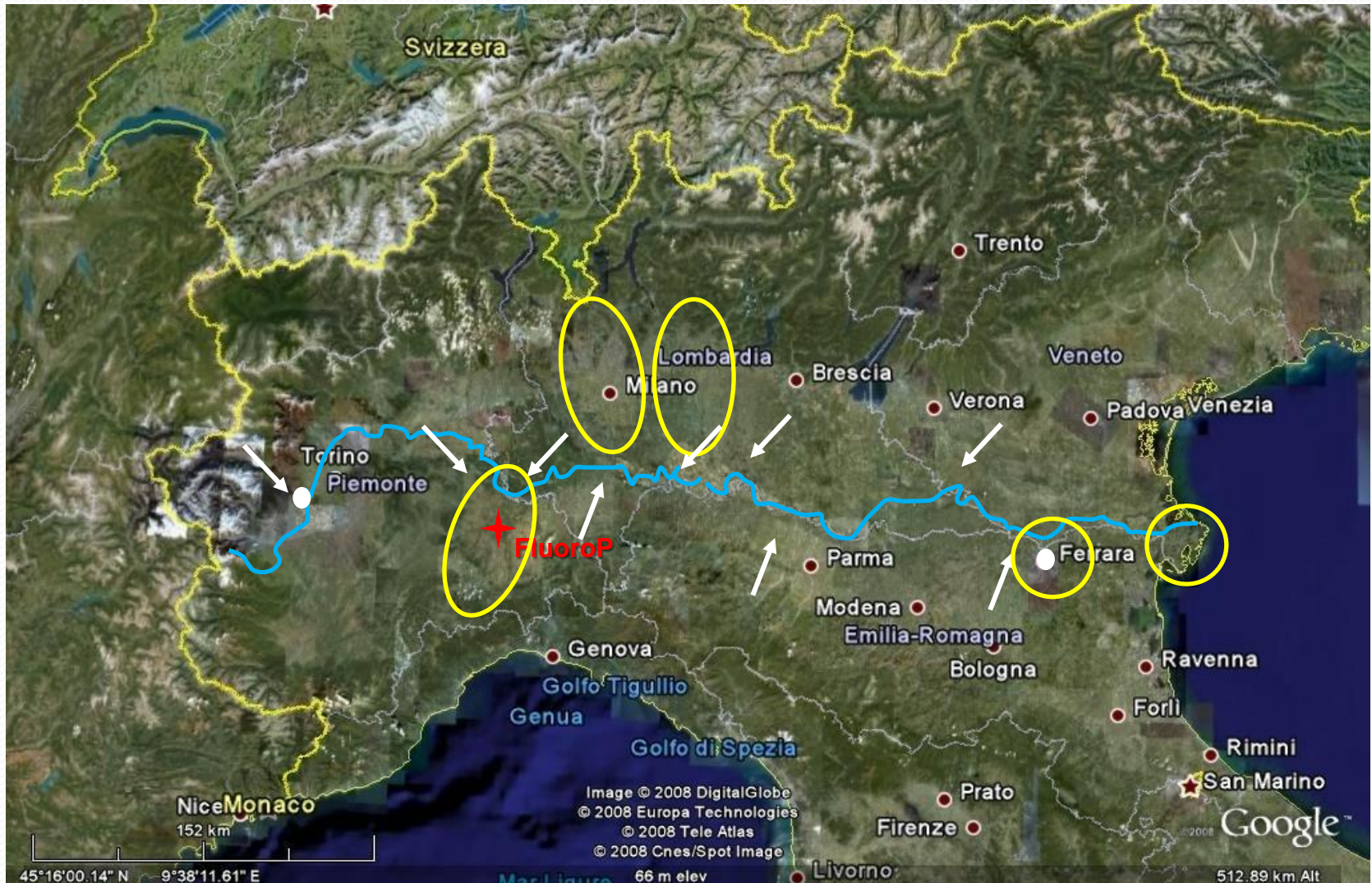
PFCAlong



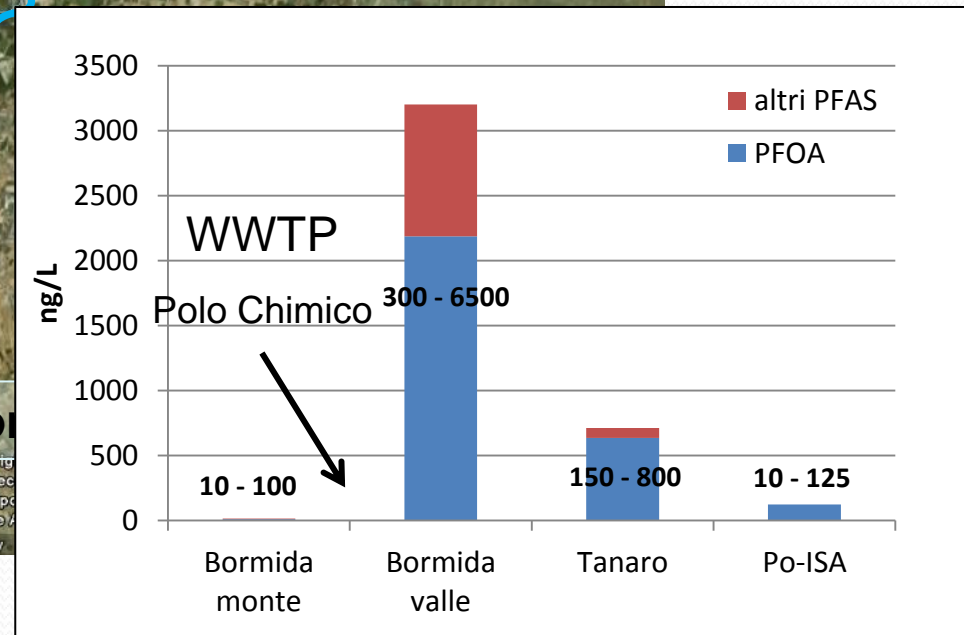
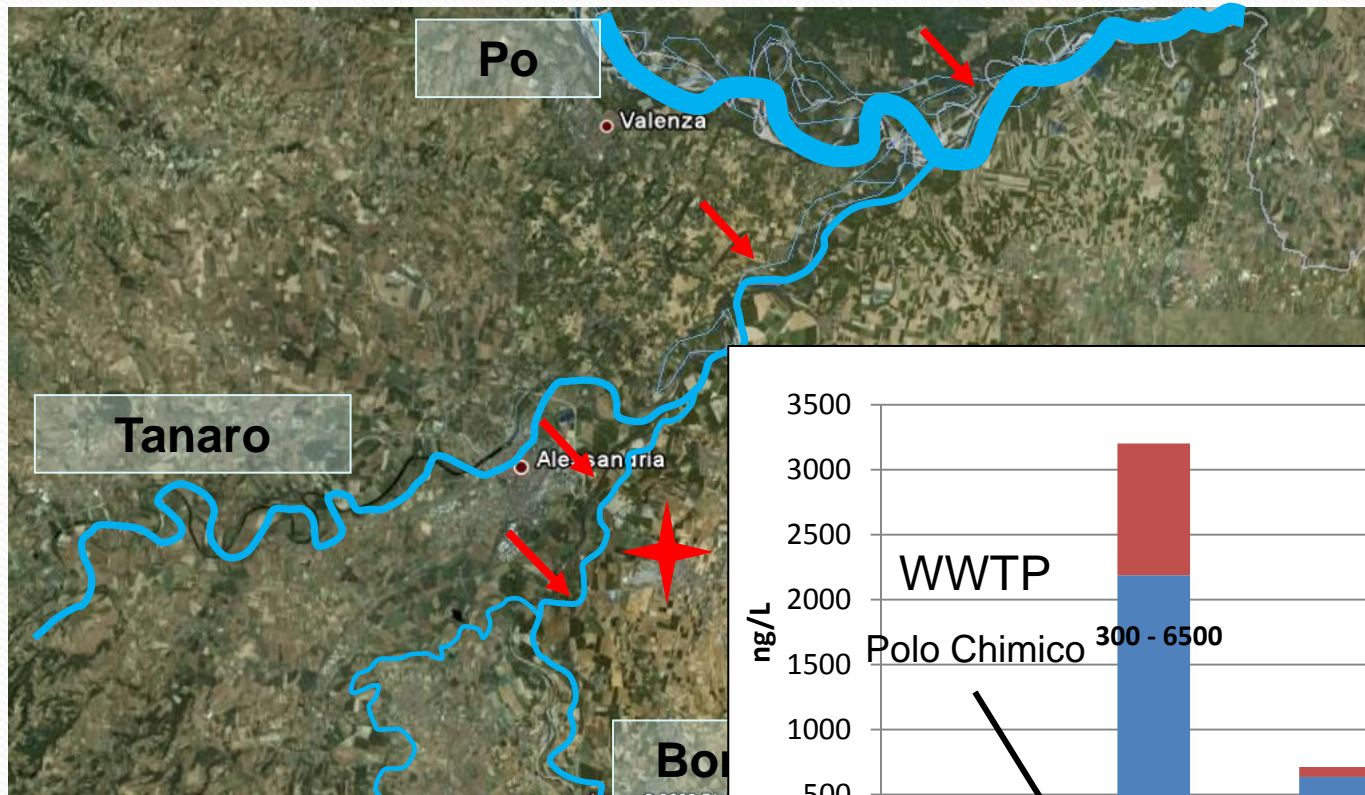
PFSA



BACINO DEL FIUME PO



Bormida-Tanaro-Po conc. gennaio 2012



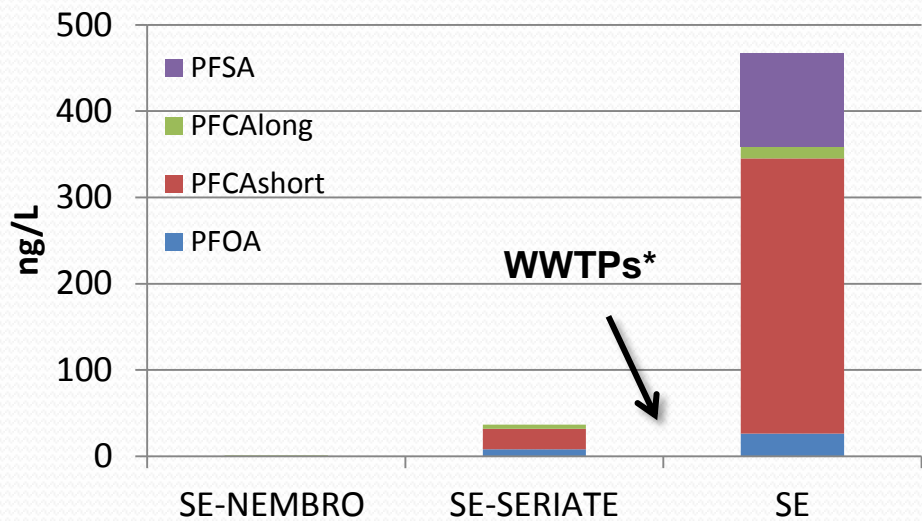
PFOA

Falda superficiale 2 000 - 30 000 ng/L

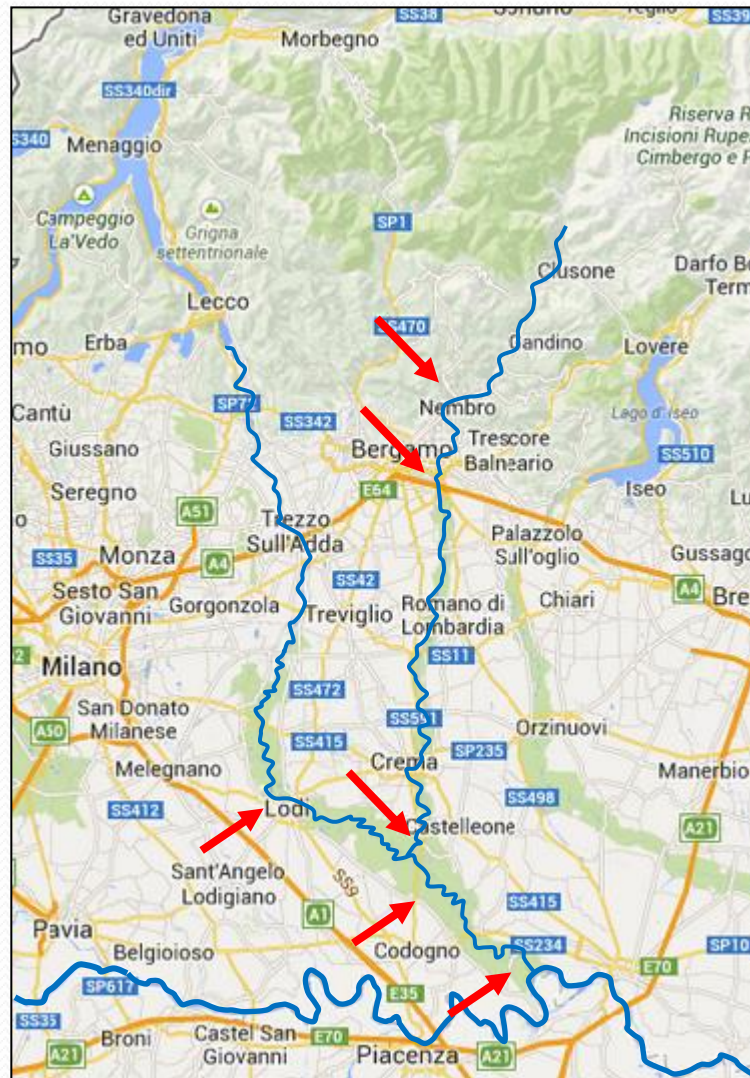
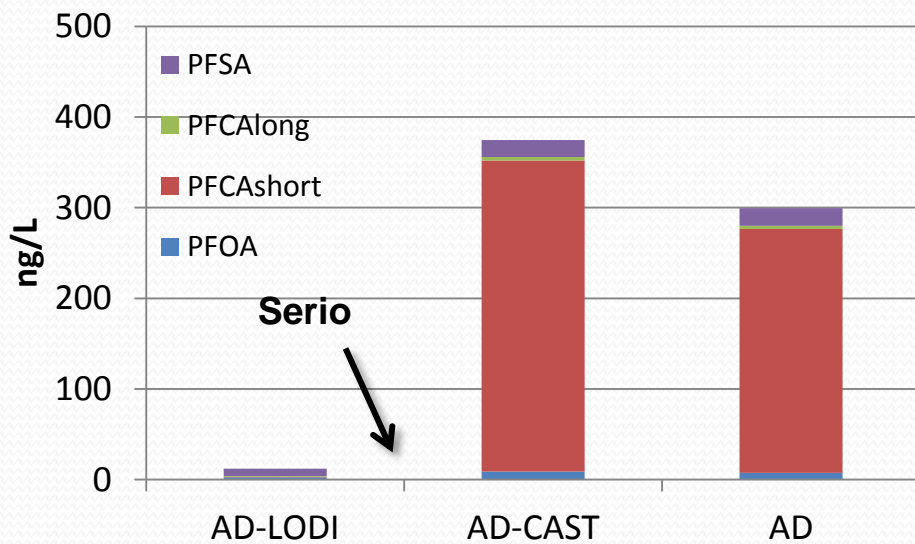
Falda profonda 2 - 4 ng/L

Acqua Potabile < DL

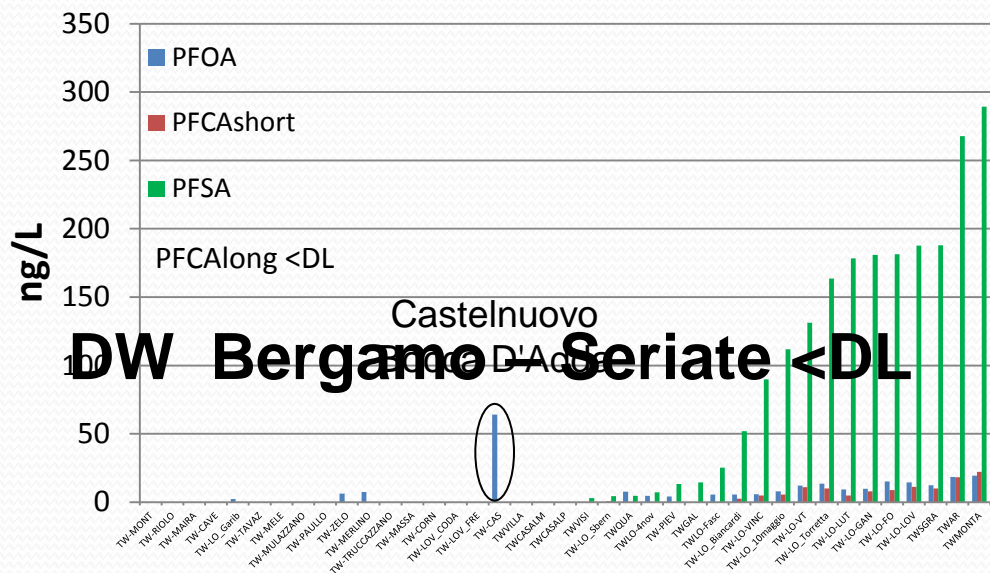
Bacino Serio-Adda 2011-2012



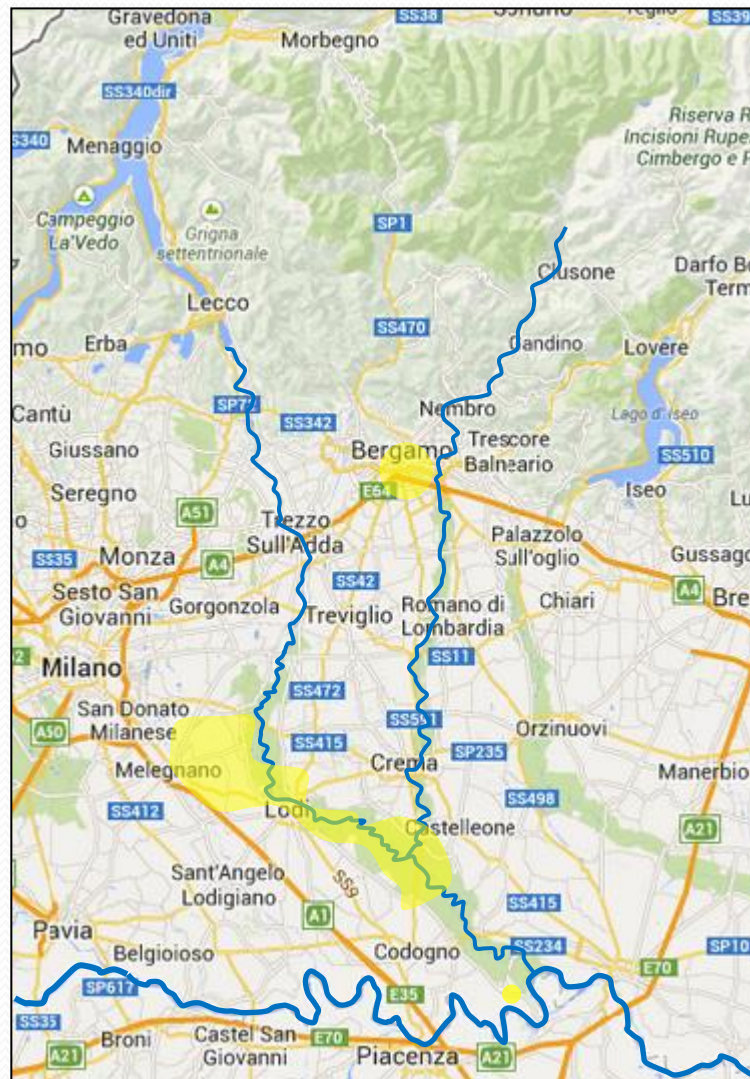
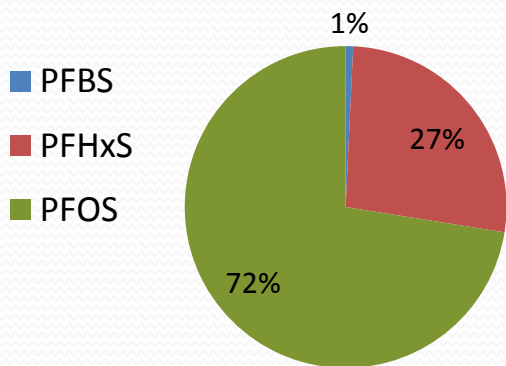
*Grassobbio, Bagnatica, Ghisalba, Lurano e Cologno al Serio



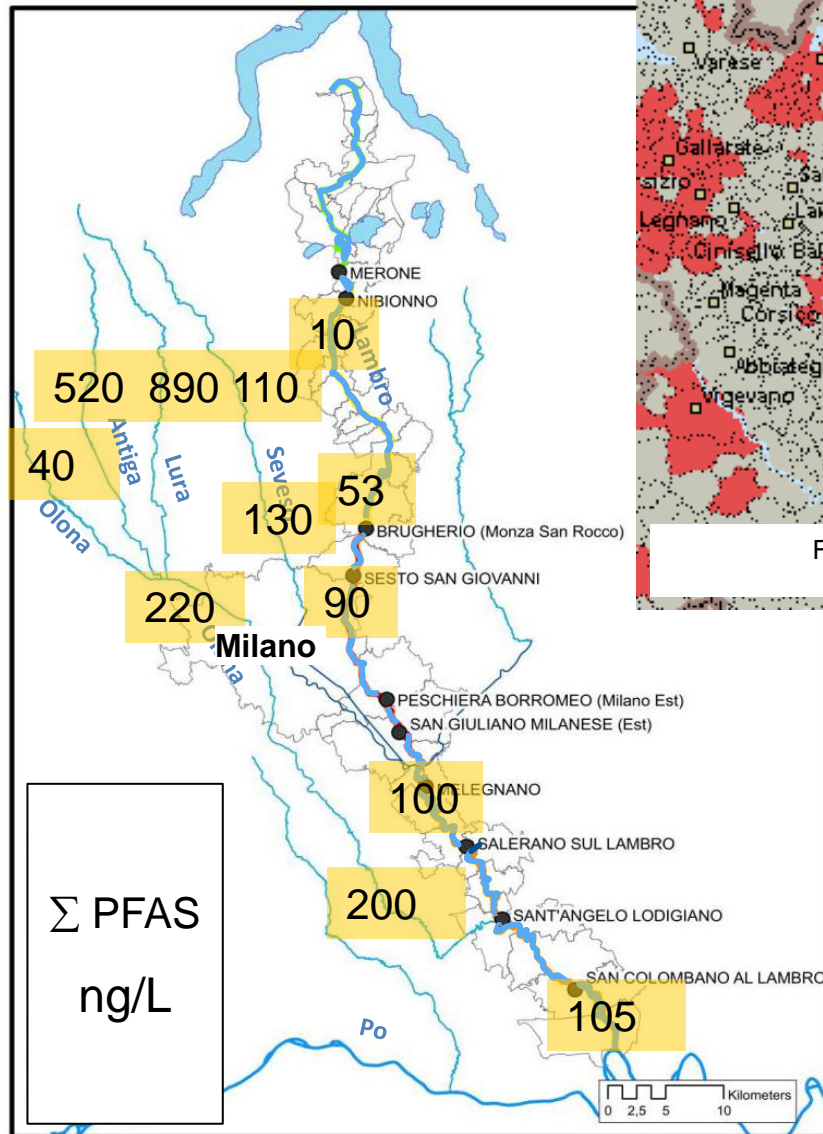
Bacino Serio-Adda: acqua potabile



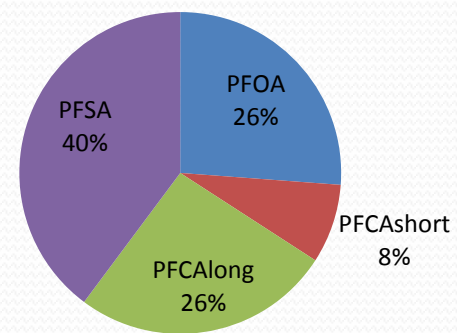
Distribuzione media di perfluorosolfonati



Area metropolitana di Milano bacino del Lambro

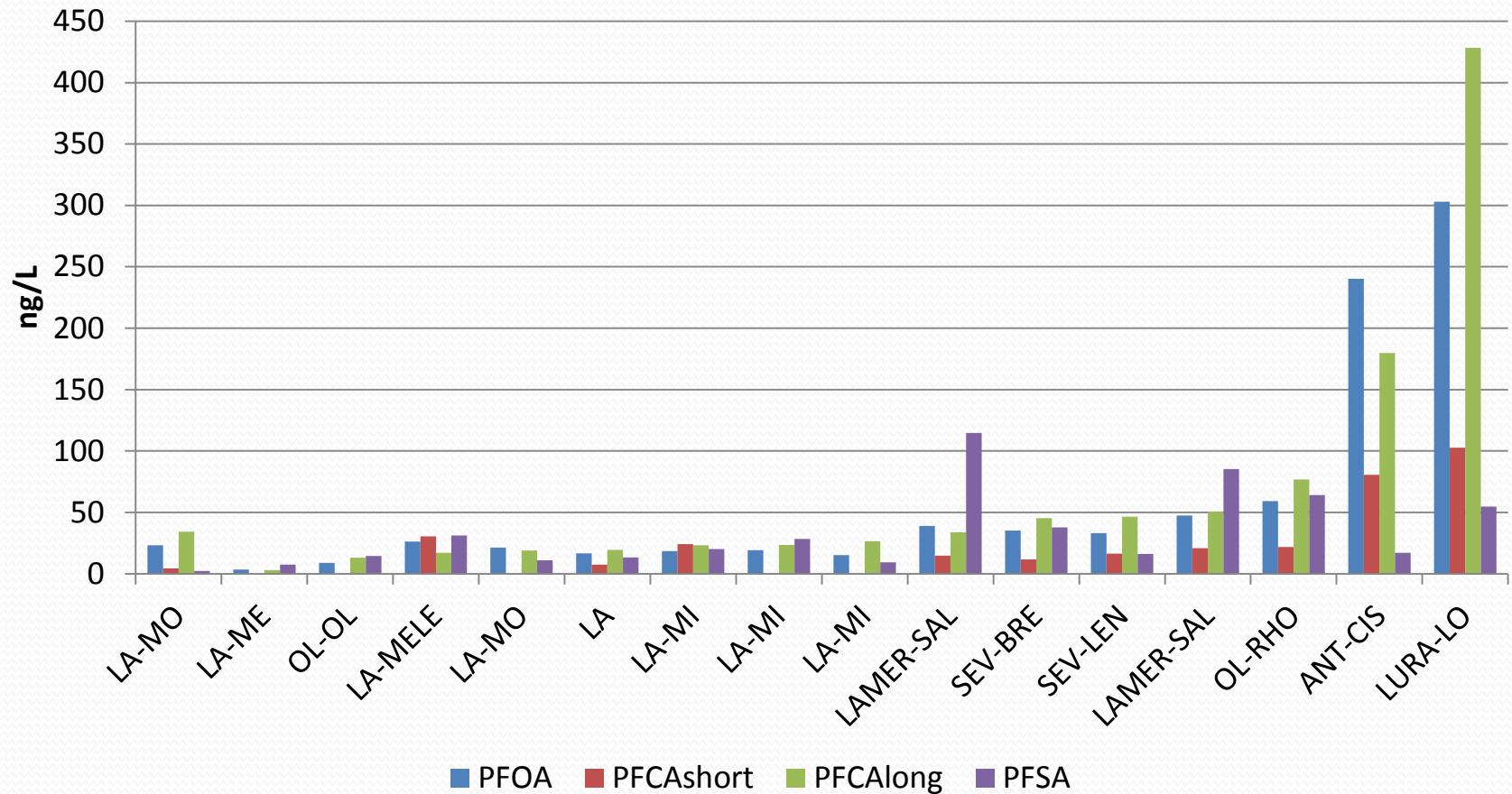


Distribuzione media di PFAS Lambro chiusura bacino

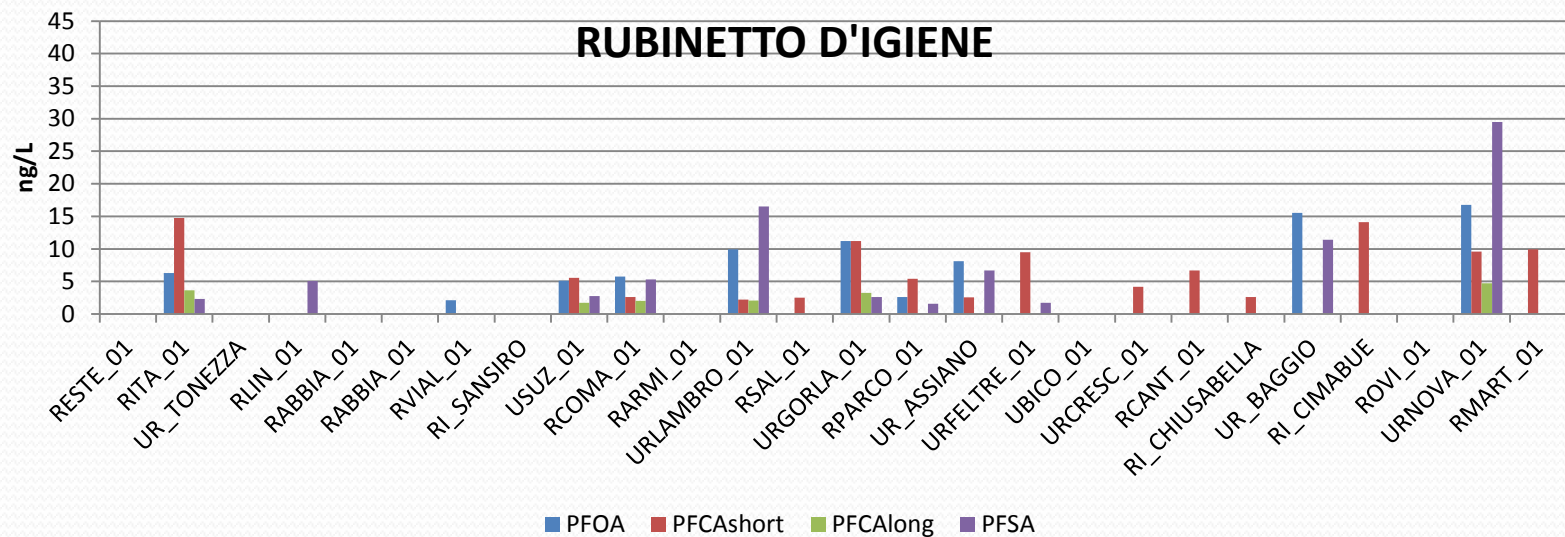
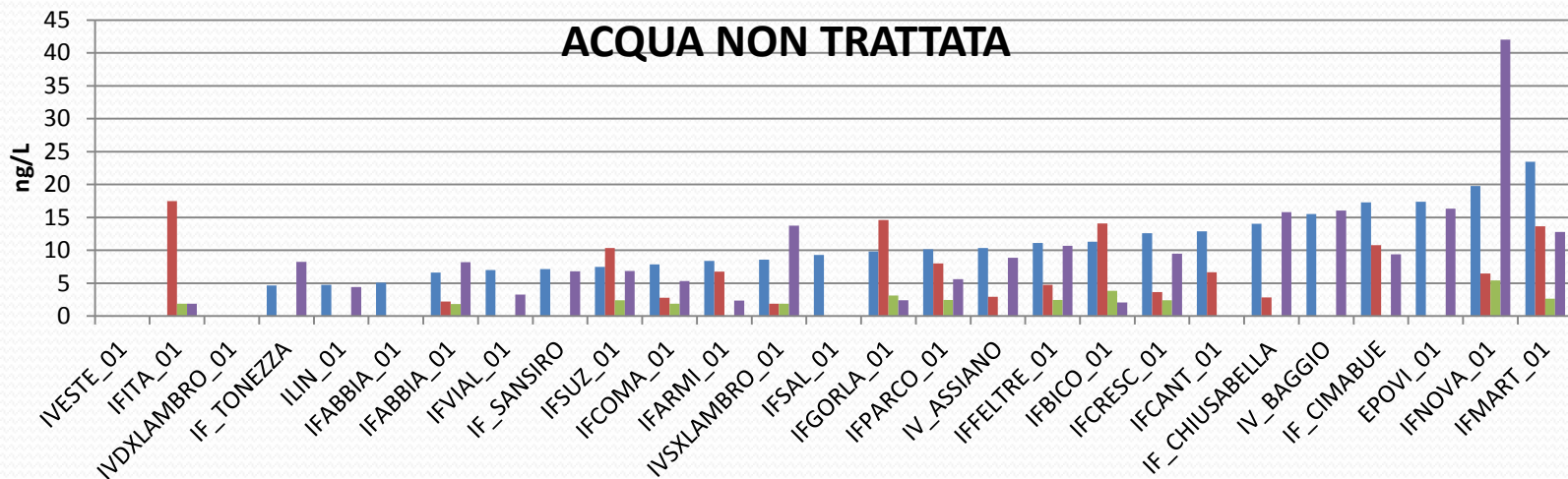


Area metropolitana di Milano

bacino del Lambro



Milano acqua potabile



■ PFOA ■ PFCAshort ■ PFCAlong ■ PFSA

Conclusioni

- Po veicola PFAS al Mar Adriatico (2 t/a; PFOA 50% PFCAs short 30%)
- Tanaro ascrivibile maggior parte del PFOA (90% PFOA)
- Adda ascrivibile maggior parte dei PFCA a catena corta
- Lambro sorgente PFCA a catena lunga (C_9 - C_{12}) e PFSA
- No significativo rischio per il consumatore di prodotti ittici

- Acqua potabile prodotta da acqua di falda
 - Hot spots
 - PFAS diffusi in territori industrializzati

Ringrazio

Luca Visinoni
Cristina Gallo
Michela Mazzoni
Emiliano Veronesi

Prof. Paolo Tremolada
Marino Gazzola
Filippo Guzzon
Silvano Cavalli