Dr. STEFANO SEGADELLI (Geological Survey, Emilia-Romagna Region Administration)

## PERSONAL DETAILS



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## MAIN AREAS OF RESEARCH

- Sedimentology;
- Field Geology;
- Geological and geomorphological Mapping;
- Stratigraphy;
- Geomorphology;
- Hydrogeology.

## ACADEMIC CAREER AND POSITIONS HELD TO DATE

Education

- 2014: Ph.D. in "SSD: GEO/05 Applied Geology", University of Parma with the thesis: "Funzionamento idrogeologico di acquiferi peridotitici: il caso del M. Prinzera (Appennino settentrionale, Italia). Tutor: prof. Fulvio Celico. XXII cycle, 97pp.
- 1993: Degree cum laude in Geological Sciences at the University of Parma with the thesis: "Stratigrafia fisica e analisi di facies della Formazione di Ranzano nel bacino epiligure di M. Roccone e M. Barigazzo (Appennino Parmense-Piacentino)". Tutor: Prof. Emiliano Mutti, 101pp.

Work experience

- From April 2009 to today Geologist (permanent contract, cat. D) in the Geological Survey of the Emilia-Romagna Region Administration;
- From 1997 to March 2009: Collaborator (co.co.co / co.co.pro) in the Geological Survey of the Emilia-Romagna Region Administration as part of several research projects funded by the Emilia-Romagna Region Administration, ISPRA and EU within the South East Europe Transnational Cooperation Programme.

## MOST IMPORTANT RESEARCH PROJECTS FUNDED IN THE PAST

- **SARMA project (2009-2011):** The main objective of the project is to develop a common approach to (a) sustainable aggregate resource management (SARM) and (b) sustainable supply mix (SSM) planning, at three scales: regional, national and transnational across South East Europe (S.E.E.). The project build the foundation for a Regional Centre on sustainable aggregates management and supply. The lead partner is the Geological Survey of Slovenia (http://www.sarmaproject.eu/index.php?id=1556). SARMA project is co-financed by the EU within the South East Europe Transnational Cooperation Programme;
- **EBERs Project (2011-2013): E**xploring the **B**iodiversity of **E**milia-**R**omagna **s**prings is a project fostered and funded by the Geological Survey of the Emilia-Romagna Region. Its main goal is an exploratory investigation on the biota of selected springs of the Emilia-Romagna Region. It is characterized by a multidisciplinary approach with the aim of spring-habitat characterization and of dissemination of an improved awareness of the role of this resource in the territorial and thematic planning. The main results of the EBERs Project are as follows: development of integrated hydrogeological-ecological approaches allowing to lay the foundations for conservation actions and for the monitoring of springs, understood not as simple points of aquifer-system discharge but as complex ecotones; unveiling of significant biodiversity, with the discovery of several species new to science of diatom microalgae, and of one species new to science of freshwater mite; identification of the causes of the crenic biodiversity observed, with possible implications for the management and conservation of spring habitats (http://ambiente.regione.emilia-romagna.it/geologia/temi/acque/il-progetto-ebers);
- **SNAP SEE project (2012-2014):** The SNAP-SEE project focuses on developing and disseminating tools for aggregates management planning in Southeast Europe (SEE). It builds on the results of the Sustainable Aggregates Resource Management (SARMa) project. Due to regional differences in historical development, there are diverse approaches to aggregates policies, planning and management in SEE, which is hindering resource efficiency and economic development in the region. The primary objective is to develop a Toolbox for Aggregates Planning to

support national/regional, primary and secondary aggregates planning in SEE countries. SNAP SEE project is co-financed by the EU within the South East Europe Transnational Cooperation Programme
Links:
http://www.snapsee.eu/images/stories/DOCUMENTS/Deliverables_WP6/How_to_Build_a_Sustainable_Aggregates_Plan.pdf
http://ambiente.regione.emilia-romagna.it/geologia/divulgazione/progetti-europei/snap-see-planning-sustainable-aggregates).

## PUBLICATION LISTS

***Peer-reviewed publications;***

- Geological Map of Italy 1:50.000 scale, CARG National Project (2009):
  Geological sheet n°203 Poggio Renatico:
  (http://www.isprambiente.gov.it/Media/carg/203_POGGIO_RENATICO/Foglio.html). ISPRA – Servizio Geologico d'Italia and Geological Survey Emilia-Romagna Region Administration;
- Geological Map of Italy 1:50.000 scale, CARG National Project (2010):
  Geological sheet n°203 Reggio Emilia:
  http://www.isprambiente.gov.it/Media/carg/200_REGGIO_EMILIA/Foglio.html). ISPRA – Servizio Geologico d'Italia and Geological Survey Emilia-Romagna Region Administration;
- Gargini A., De Nardo M.T., Piccinini L., Segadelli S. & Vincenzi V. 2014. Spring Discharge and Groundwater flow systems in sedimentary and ophiolitic Hard Rock Aquifers: experiences from northern Apennines (Italy). In J.M. Sharp (Ed.), *Fractured Rock Hydrogeology*, CRC Press, 129-146. ISBN: 978-1-138-00159-6, doi: 10.1201/b17016-9, http://www.crcnetbase.com/doi/abs/10.1201/b17016-9;
- Piccini L., De Nardo M.T., Filippini M., Segadelli S., Vincenzi V. & Gargini A. 2014. Hydrogeological protection of non karstic fractured aquifers. *Geoingegneria Ambientale e Mineraria*, volume 143(3), 73-92.
- Rosati M., Cantonati M., Fenoglio S., Segadelli S., Levati G. & Rossetti G. 2016. Is there an ideal protocol for sampling macroinvertebrates in springs?. *Journal of Freshwater Ecology* volume 31, 199-209 http://dx.doi.org/10.1080/02705060.2016.1149892;
- Cantonati M, Segadelli S., Ogata K., Tran H., Sanders D., Gerecke R., Rott E., Filippini M.; Gargini A. & Celico F. 2016. *A* global review on ambient Limestone-Precipitating Springs (LPS): Hydrogeological setting, ecology, and conservation. *Science of The Total Environment*, volume 568, 624-637, doi: https://doi.org/10.1016/j.scitotenv.2016.02.105;
- Chelli A., Segadelli S., Vescovi P. & Tellini C. 2016. Large-scale geomorphological mapping as a tool to detect structural features: the case of Mt. Prinzera ophiolite rock mass (Northern Apennines, Italy). *Journal of Maps*, volume 12, Issue 5, doi: https://doi.org/10.1080/17445647.2015.1072115;
- Segadelli S.; Vescovi P., Ogata K., Chelli A., Zanini A., Boschetti T., Petrella E., Toscani L., Gargini A. & Celico, F. 2017. A conceptual hydrogeological model of ophiolitic aquifers (serpentinised peridotite): The test example of Mt. Prinzera (Northern Italy). *Hydrological Processes*, volume 31, 1058–1073, doi: 10.1002/hyp.11090;
- Segadelli S., Vescovi P., Chelli A., Petrella E., De Nardo M.T., Gargini A. & Celico F. 2017. Hydrogeological mapping of heterogeneous and multi-layered ophiolitic aquifers (Mountain Prinzera, northern Apennines, Italy). *Journal of Maps*, volume 13, Issue 2, doi: https://doi.org/10.1080/17445647.2017.1376228.

***Non-peer-reviewed publications;***

- Technical report 2015:
- Title: Individuazione e classificazione delle unità geologiche ofiolitiche o ofiolitifere nell'Appennino Emiliano-Romagnolo. Allegato alle Note illustrative della Carta Pedogeochimica della Pianura Emiliano-Romagnola alla scala 1:250.000.
  http://ambiente.regione.emilia-romagna.it/geologia/temi/metalli-pesanti/ofioliti-cromo-nichel-suoli
  http://mappegis.regione.emilia-romagna.it/gstatico/documenti/dati_pedol/unita_geo_ofiolitiche.pdf).
  Author: Geological Survey Emilia-Romagna Region Administration;

- Technical report 2016:
  Title:Precipitazioni estreme e effetti al suolo sul reticolo minore: il caso del 14 Settembre 2015.
  Authors: Arpae and Geological Survey Emilia-Romagna Region Administration.
  In the Emilia-Romagna region, we are witnessing more high intensity precipitation events, probably attributable to the increase of temperature and water vapor in the atmosphere. In the event of 14 September 2015 many debris and hyper-concentrated flows has been observed in the Northern Apennine, some of them flowing in a peat-bog environment. Our plan is to characterize the observed deposits and use them as a marker for high intensity precipitation events in the past. The peat-bog sedimentary deposit could represent a complementary archive, beyond the instrumental chronological time, to register singular events in the recent past. This natural archive could reveal additional information about past frequency of these events and shed new perspective on future precipitation distribution and intensity due to climate change.
  Link: https://www.arpae.it/cms3/documenti/_cerca_doc/meteo/Report_effetti_preciestreme.pdf.

Separate listing of the 10 most important scholarly publications in the researcher's entire career to date

1. Mutti E., Papani L., Di Biase D., Davoli G., Mora S., Segadelli S. & Tinterri R. 1995. Il Bacino Terziario Epimesoalpino e le sue implicazioni sui rapporti tra Alpi ed Appennino. Memorie di Scienze Geologiche di Padova, volume 47, 217-244;

2. De Nardo M.T., Segadelli S. & Vescovi P. 2007. Studio pilota per la caratterizzazione geologica delle sorgenti nella zona del M. Nero (alta Val Ceno e alta Val Nure - Province di Parma e Piacenza). Rivista dell'Ordine dei Geologi Emilia-Romagna, Bollettino Ufficiale d'Informazione, anno VII, n°25, 5-24 (http://www.geologiemiliaromagna.it/rivista/2007-25.htm);

3. Bonaposta D., Segadelli S., De Nardo M.T., Alessandrini A. & Pezzoli S. 2011. Le potenzialità geologiche dei dati storici ambientali: il caso delle sorgenti e dei fontanili in Emilia-Romagna. *Il Geologo dell'Emilia-Romagna*, Rivista dell'Ordine dei Geologi Emilia-Romagna, Bollettino Ufficiale d'Informazione, anno XI, n°42, 19-36 (http://www.geologiemiliaromagna.it/rivista/2011-42.htm).