

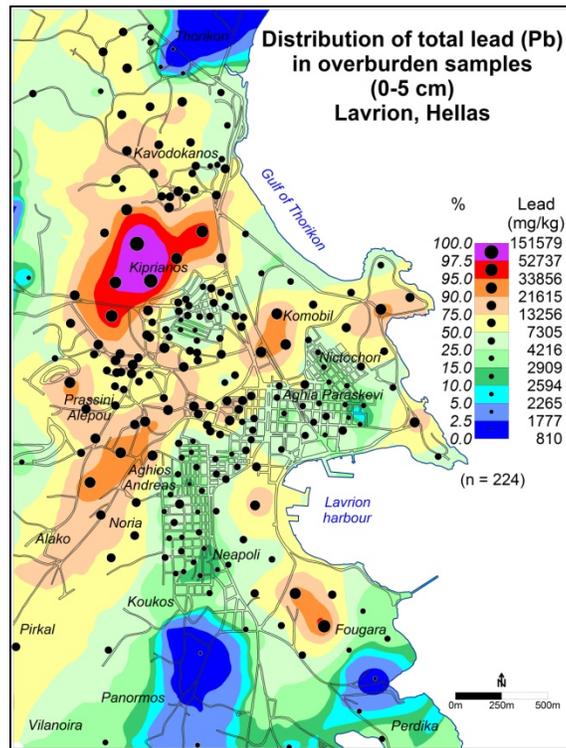
Urban Geochemical Mapping

Although [Alec Demetriades](#) is retired from his position as Director of the Division of Geochemistry and Environment at the [Institute of Geology and Mineral Exploration](#), he hasn't found himself idling his days away on the golf course. Instead, he continues to give back to geochemists across the globe.

Recently, Mr. Demetriades and fellow members of EuroGeoSurveys (EGS) Geochemistry Expert Group published the textbook "[Mapping the Chemical Environment of Urban Areas](#)." The purpose of the textbook is to educate people on geochemical mapping within an urban environment. As more and more people move to urban environments, they inevitably modify their surroundings, which result in changes to both the physical and chemical equilibrium. It's easy to see physical hazards, such as earthquakes or flooding within these urban environments, but chemical hazards, for example, lead concentration within soil, require more research and analysis. "[Mapping the Chemical Environment of Urban Areas](#)" textbook details the various aspects of urban geochemical mapping. It also highlights various urban mapping case studies previously performed across Europe, the United States of America, Africa and SE Asia.

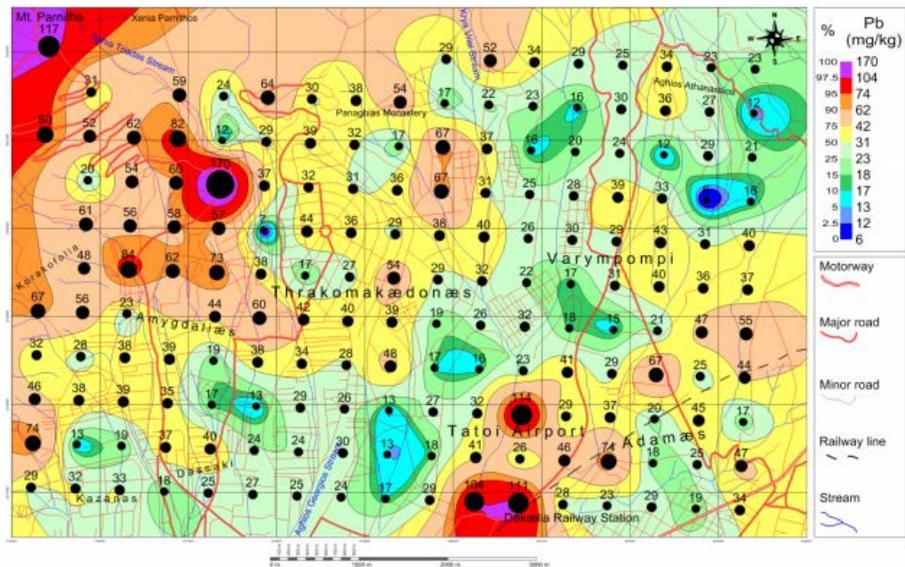
While Mr. Demetriades and his colleagues were reviewing these case studies, they noticed a need for a comprehensive manual that provided details on urban geochemical mapping. This need was further solidified during his seminars, as attendees were not well versed in sampling methodologies, sample preparation and storage, analysis, and quality control methods. This led to the writing of the "[URBAN GEOCHEMICAL MAPPING MANUAL: Sampling, Sample preparation, Laboratory analysis, Quality control check, Statistical processing and Map plotting](#)" as a follow up to the textbook.

Both the textbook and manual include maps and graphs plotted with [Golden Software's Surfer](#) and [Grapher](#) programs. Mr. Demetriades is a long-time Golden Software customer and first used MS-DOS versions of the products. When asked why he's been such a dedicated customer over the years, Mr. Demetriades replied, "*The reason I continue using Surfer and Grapher is the friendliness of the software and the effectiveness in plotting quality maps and diagrams. Additionally, the cost of Golden Software packages and upgrades is quite reasonable.*" Mr. Demetriades adds, "*Most importantly is the friendliness of the Golden Software staff to answer technical questions and provide free resources.*"

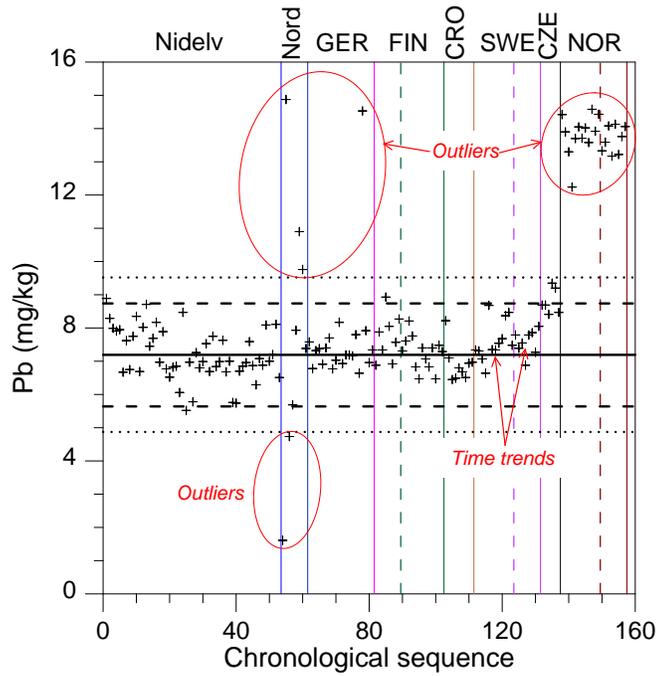


Geochemical distribution of lead throughout urban and suburban areas in Lavrion, Greece. Map plotted with Surfer.

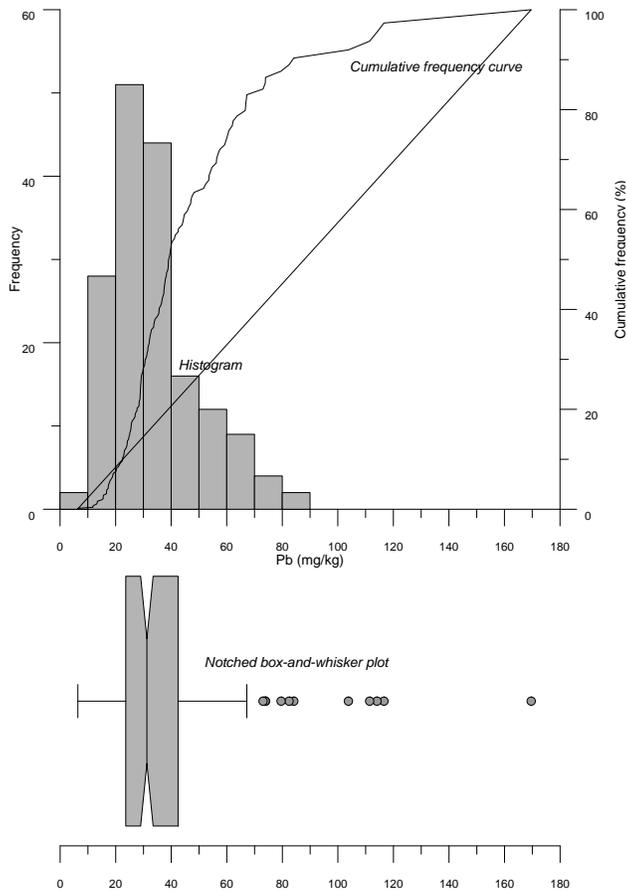
The mission of the EGS is to provide public earth science knowledge through the combined efforts of the EGS and its member surveys. Not only has Mr. Demetriades helped the EGS achieve their goal, he has also helped, and continues to help, other scientists working in these urban environments that will only continue to grow and expand.



Geochemical distribution of extractable lead occurring in topsoil samples collected in an Athens suburb, Greece. Map plotted with Surfer.



Control chart plotted for a secondary reference sample. Plotted with Grapher.



A composite univariate plot of the statistical distribution of lead in an Athens suburb, Greece: (a) Cumulative frequency curve, (b) histogram, and (c) notched-box-and-whisker plot. All plotted with Grapher.

Alecos Demetriades can be reached at alecos.demetriades@gmail.com.

"Mapping the Chemical Environment of Urban Areas" by Christopher C. Johnson, Alecos Demetriades, Juan Locutura, Rolf Tore Ottesen: <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470747242.html>

"URBAN GEOCHEMICAL MAPPING MANUAL: Sampling, Sample preparation, Laboratory analysis, Quality control check, Statistical processing and Map plotting" by Alecos Demetriades and Manfred Birke with contributions by the EuroGeoSurveys Geochemistry Expert Group: http://www.eurogeosurveys.org/wp-content/uploads/2015/10/Urban_Geochemical_Mapping_Manual.pdf