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EDITORIAL

ENVIRONMENTAL SCIENCES IN THE PYRENEES: SHARING THE CURRENT KNOWLEDGE AND RESEARCH

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This special issue of *Environmental Engineering and Management Journal* is devoted to the on-going research on environmental management that is being carried out in the Pyrenees. It comprises the peer-reviewed Proceedings of the **Environment & Pyrenees International Conference (EPIC)** that was held 19-21 October 2012 at the University of Navarre in Pamplona, Spain. The conference was organized by a local organization and scientific program committee which included, in alphabetical order, Enrique Baquero, Raúl Bermejo, Javier Otegui, Andrea Pino del Carpio, Jordi Puig, Ibon Tobes and Ana Villarroya, whose efforts contributed greatly to its overall success. A major sponsor for this conference was the Spanish Ministry of Science and Innovation (project CGL2011-14222-E from the Plan Nacional de I+D+I). Further support was kindly provided by the Administrative Office of the Faculty of Sciences, University of Navarra.

A major motivation for the organization of this meeting was the perception that the coordination of the research in the Pyrenees is broadly missing at both regional and national scales. The role of the range as a natural boundary between administrative regions, the ignorance of the scientific groups working in both sides of the Pyrenees, the limited existing communication between scientist groups, the lack of a common policy, and the inexistence of an structure pursuing the same goals in all regions and countries that share this important cultural and ecological

heritage are the main reasons that explain the current situation.

It is our hope that this conference on the Pyrenees and its environment contributes to solving some of the above mentioned problems.

One of the main outcomes of this meeting has been bringing together researchers working in both sides of the Pyrenees: Over 65 researchers from eleven universities and nine research centres shared their experiences and knowledge about the environment in the Pyrenean Mountains.

This editorial paper introduces sixteen papers, which constitute a representative sample of topics addressed during the conference. In a first study, Otegui et al. (2012), and Ariño et al. (2012) analyze biodiversity data in the Pyrenees, focusing on a protected site and all the Pyrenean area, respectively. The following papers include four studies on the characterization of Polycyclic Aromatic Hydrocarbons (PAHs) and other pollutants (Aldabe et al. 2012, Bustamante et al. 2012, Foan et al. 2012, Rodríguez et al. 2012) and the effect of pollutant deposition on soil biodiversity (Santamaría et al. 2012). Closa and Goicoechea (2012) analyse the functional biology of managed beech forests. The next papers deal with a number of aspects related to structural fragmentation by roads (Sanz et al. 2012, Serrano et al. 2012, Puig et al. 2012, Villarroya et al. 2012). Suchet et al. (2012) analyze the pollination of subspecies of *Snapdragon*, *Antirrhinum majus*.

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Subsequently, Leunda et al. (2012) analyze the variability of freshwater fishes in a Pyrenean river, and Miranda et al. (2012) examine the effect of a dam management on the river ecology. Finally, Barrachina et al. (2012), and Serra-Díaz et al. (2012) present two studies with regards to landscape and management issues. In conclusion, a fair amount of diverse studies with the Pyrenees as their binding element.

Mountain ecosystems are heavily influenced by factors such as their topography, climate, biodiversity selection, or resource availability. In addition, the human use of land has been particularly intense in the case of European mountains. These ecosystems have not only fostered the development of natural biodiversity but also that of culture, which is equally important. The increasing rate of resource use, either in traditional terms or in terms of industry and infrastructure, puts biodiversity at risk. Sharing and increasing our understanding on this biodiversity and its threats is necessary for the conservation of such a singular area.

Finally, the editors thank the following for their help in refereeing the papers included in this issue: David Almeida (Bournemouth University, United Kingdom), Vicent Benedito Durá (Polytechnic University of Valencia, Spain), Raúl Bermejo (University of Navarra, Spain), Stan Blum (California Academy of Sciences, USA), Pedro Cifuentes (Polytechnic University of Madrid, Spain), Julien Cucherousset (University of Toulouse, France), Sebastiano Cullotta (University of Palermo, Italy), Alberto de Diego (University of Basque Country, Spain), Javier del Real (SAITEC, Spain), María Celia Domeño (University of Zaragoza, Spain), Rafael Escribano (Polytechnic University of Madrid, Spain), Cathérine Fernandez (University of Provence, France), Jose I. García (University of Basque Country, Spain), Antonio Gazol (University of Tartu, Estonia), Santiago González (Polytechnic University of Madrid, Spain), Juan C. Iturrondobeitia (University of Basque Country, Spain), Teodoro Lasanta (Pyrenean Institute of Ecology, Spain), Pedro M. Leunda (GAN, Spain), Purificación López Mahía (University of La Coruña, Spain), James A. Macklin (Agriculture and Agri-Food Canada, Canada), Isaura Rábago (CIEMAT, Spain), Juan M. Madariaga (University of Basque Country, Spain), Roger Meek (Huddersfield Technical College, United Kingdom) Wiebke Neumann (Swedish University of Agricultural Sciences, Sweden), Henning Petersen (Natural History Museum, Denmark), Juan José Pons (University of Navarra, Spain), Jordi Puig (University of Navarra, Spain), Nuria Roca (University of Navarra, Spain), Carolina Santamaría (University of Navarra, Spain), Josep Serra (Autonomic University of Barcelona, Spain), Valérie Simon (ENSIACET, Toulouse, France), Pilar Torres (University Miguel Hernández of Elche, Spain) and David Verdiell (University of Murcia, Spain).

Their collaboration has been essential for the elaboration of this issue:

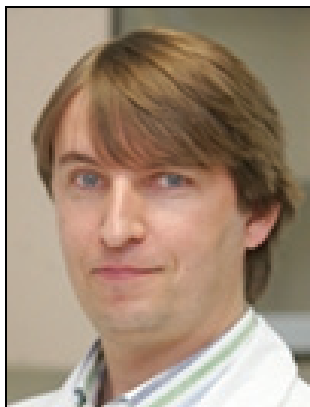
- Aldabe J., Santamaría C., Elustondo D., Parra A., Foan L., Simon V., Santamaría J.M., (2012), Characterization and source identification of polycyclic aromatic hydrocarbons (PAHs) in aerosol phase at two different locations of the western Pyrenees in Navarra (Spain).
- Ariño A.H., Otegui J., Villarroya A., (2012), Primary biodiversity data records in the Pyrenees.
- Barrachina M., Serra-Diaz J.M., Tulla A.F., Cristóbal J., (2012), On the link between socioeconomic development and landscape changes in two Pyrenean valleys: the true challenge of multifunctionality.
- Bustamante J., Arana G., de Diego A., Madariaga J.M., The use of SPMDs and implanted oysters for monitoring PAHs and PCBs in an aquatic environment in the estuary of Urdaibai (western Pyrenees)
- Closa I., Goicoechea N., (2012), Above-ground and below-ground functional biology in unmanaged and in clear-cut beech stands in northern Spain.
- Foan L., del Prado Domerq M., Bermejo R., Santamaría J.M., Simon V., (2012), Atmospheric PAH deposition in a Nature Reserve of Navarra (Spain): Seasonal and spatial distributions.
- Leunda P.M., Sistiaga M., Oscoz J., Miranda R., (2012), Ichthyofauna of a near-natural Pyrenean river: spatiotemporal variability and reach-scale habitat.
- Miranda R., Martínez-Lage J., Molina J., Oscoz J., Tobes I., Vilches A., Effects of stress controlled loading of a reservoir on downstream fish populations in a Pyrenean river.
- Otegui J., Villarroya A., Ariño A.H., (2012), Protected areas: A meaningful way to preserve biodiversity? Preliminary study in the Spanish Pyrenees.
- Puig J., Sanz L., Serrano M., Elosegui J., (2012), Simultaneous monitoring of wildlife roadkills and underpassage use in Northern Spain.
- Rodríguez D., Lasheras E., Aldabe J., Elustondo D., Santamaría J.M., Garrigó J., (2012), Heavy metals mobility in experimental disturbed and undisturbed acid soil columns in Spanish Pyrenees.
- Santamaría J.M., Moraza M.L., Elustondo D., Baquero E., Jordana R., Lasheras E., Bermejo R., Ariño A.H., (2012), Diversity of Acari and Collembola along a pollution gradient in soils of a pre-Pyrenean forest ecosystem.
- Sanz L., Puig J., Ariño A., The link between roadkills distribution and the surrounding landscape in two highways in Navarre, Spain.
- Serra-Diaz J.M., Pelachs A., Vera A., Mendizábal E., (2012), Bridging the gap between landscape theory and management needs: a case study in the High Pyrenees Natural Park.
- Serrano M., Puig J., (2012), The mapping of structural fragmentation by roads. An application in Navarre (Spain).

Suchet C., Simon V., Raynaud C., Chave J., (2012),
Reproducibility of Flower Scent Emissions in
Two Wild Subspecies of the Snapdragon,
Antirrhinum majus.

Villarroya A., Puig J., (2012), Urban and industrial
land-use changes alongside motorways within the
Pyrenean area of Navarre, Spain.

Guest editors:

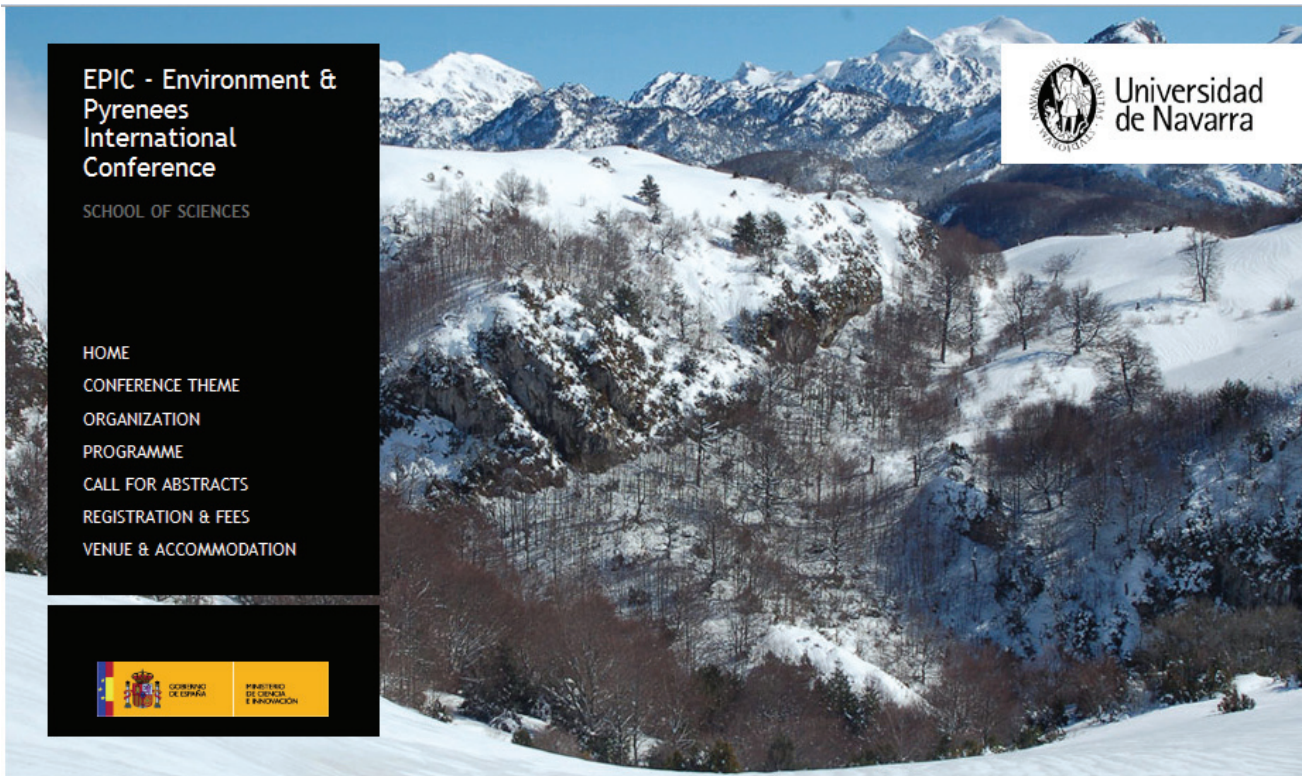
Professor Jesús Miguel Santamaría, University of Navara, Pamplona, Spain
Professor Rafael Miranda, University of Navara, Pamplona, Spain



Jesús Miguel Santamaría, PhD graduated in 1995 with the thesis entitled “Assessment of the effects of air pollution on the phytosanitary state of Navarre’s forests by the using of bioindicators”, performs his research activity in the field of the environmental pollution, especially dealing with the atmosphere (ozone, particulate matter, volatile, organic compounds, reactive nitrogen and heavy metals). He is Senior Lecturer of “Analytical chemistry” and Director of the Integrated Laboratory of Environmental Quality (LICA) at the University of Navarre. He has led 12 research projects aiming to determine the effects of air pollutants on ecosystems, collaborating with numerous national and international institutions. Almost all these investigations have been conducted within the framework of the Long Range Transboundary Air Pollution (LRTAP) Convention, participating actively in the programs ICP-Forests, ICP-Vegetation, ICP-Integrated Monitoring and Task Force on Reactive Nitrogen (TFRN). At present he acts as National Focal Point of the International Cooperative Programme on Integrated Monitoring (ICP-IM) in Spain, leading the pursuit of a hydrological basin located in the western Pyrenees (Natural Park of “Señorío de Bertiz”).




Rafael Miranda, PhD graduated in 1998, performs his research activity in the field of the Hydrobiology and Animal Ecology, especially dealing with Freshwater Fishes and Management and Conservation of Wildlife in the Iberian Peninsula and Latin America. He is professor of “Animal Biology and Conservation” and “Zoology” and research of the Department of Zoology and Ecology at the University of Navarre. Currently, his research projects aim to analyze the implications of the knowledge of biodiversity for the management and conservation of Biosphere Reserves, in collaboration with some Latin-American institutions. He is member of the External Affairs Committee of the American Fisheries Society (AFS) and founder and treasurer of the Iberian Ichthyologic Society (SIBIC). Dr. Miranda has published more than 50 papers in scientific international journals, related to Hydrobiology and Limnology, especially on the ecological analysis of human impacts. Besides, into the Rivers Management Group of the department, he carries out scientific-technical reports hired by administrations, companies and other entities. To date more than 50 reports have been achieved.



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