

# Cocaine and ecstasy detected in waters of the L'Albufera in Spain

September 22 2010

---



Cocaine and ecstasy have been detected in the waters of the L'Albufera in Valencia. Credit: Yolanda Picó et al.

The water in the canals and irrigation channels in the L'Albufera Natural Park in Valencia contain cocaine, ecstasy and a further six drugs. This has been confirmed by a study carried out by researchers from the University of Valencia (UV), who have issued a warning about the continued presence of these substances on wildlife and human health.

"The results confirm the presence of drugs such as cocaine, [amphetamines](#), [codeine](#), [morphine](#) and [cannabis](#) in the surface waters of the L'Albufera National Park at levels ranging between 0.06 and 78.78 nanograms/litre", Yolanda Picó, lead author of the study and a senior professor in the Department of Nutrition and Bromatology at the UV,

tells SINC.

Scientists from this university and the Desertification Research Centre (CSIC-UV-GV) analysed the presence of 14 kinds of illegal drugs - including heroin, cocaine and [ecstasy](#) - in 16 canals and irrigation channels in the natural park. The study looked for the residue these drugs leave behind in human urine after they have been taken, and which end up in the water.

The results, published in the journal *Analytical and Bioanalytical Chemistry*, positively showed the presence of eight kinds of drugs, particularly cocaine and ecstasy. "[Cocaine](#) and its metabolites (such as benzoylecgonine) were ubiquitous in all the samples taken, while ecstasy (3,4-methylenedioxymetamphetamine, or MDMA) was also found very frequently", Picó explains.

The greatest drug concentration and frequency was found in the north of the park, above all in the area of the Poyo ravine. Waste water is regularly discharged in this area, and it also has the highest population density (almost 70% of the total population), as well as industry and nightclubs.

The researcher points out that this "indicates, with increasing likelihood, that drugs are reaching the sewer and channel systems, and that in many cases they could be affecting the irrigation channels and waters of the L'Albufera lake".

The team also found very high levels in some particular samples taken in the area of Benifaió and Almusaffes, which can only be explained by the presence of untreated waste water.

### **A risk for the wetlands**

Exhaustive eco-toxicological studies into the risk the presence of these substances in the water could pose to people and the environment have not yet been carried out. However, the scientists have issued a warning about the possible consequences.

"The health problems potentially caused by consuming these, added to the fact that these residues are still strongly pharmacologically active, may have consequences for land organisms and aquatic fauna", said Picó.

The L'Albufera Natural Park is one of the most important wetlands in Europe because of its biodiversity of flora and fauna, and because it is a key area for migratory birds. The area is a SPAB (Special Protection Area for Birds), is on the List of Sites of Community Importance for the Mediterranean Biogeographical Region, and is covered by the RAMSAR Convention on Wetlands.

Paradoxically, the park is surrounded by cities, industries, farms, shopping malls and leisure centres. The wetland is bordered by the Mediterranean highway and the V-31 motorway, and crossed by the Saler motorway and other roads. The L'Albufera is also affected by pressure from the 12 urban centres - including the city of Valencia - and the 14 municipal districts that surround it.

**More information:** Pablo Vázquez-Roig, Vicente Andreu, Cristina Blasco y Yolanda Picó. "SPE and LC-MS/MS determination of 14 illicit drugs in surface waters from the Natural Park of L'Albufera (València, Spain)". *Analytical and Bioanalytical Chemistry* 397 (7): 2851-2864, Aug 2010. [DOI:10.1007/s00216-010-3720-x](https://doi.org/10.1007/s00216-010-3720-x)

Provided by FECYT - Spanish Foundation for Science and Technology

Citation: Cocaine and ecstasy detected in waters of the L'Albufera in Spain (2010, September 22) retrieved 10 April 2024 from <https://phys.org/news/2010-09-cocaine-ecstasy-lalbufera-spain.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.