

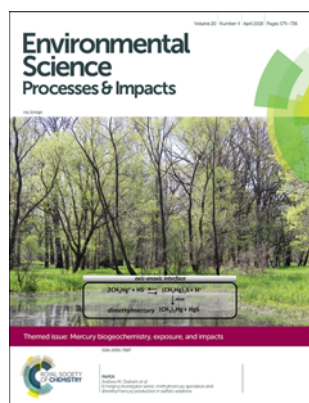
Environmental Science Processes & Impacts

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Cover

See Andrew M. Graham *et al.*, pp. 584–594.
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EDITORIAL

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Modern science of a legacy problem: mercury biogeochemical research after the Minamata Convention

Heileen Hsu-Kim,* Chris S. Eckley and Noelle E. Selin

Guest editors Heileen Hsu-Kim, Chris Eckley, and Noelle Selin introduce the Mercury Biogeochemistry, Exposure, and Impacts themed issue of *Environmental Science: Processes & Impacts*.



Heileen Hsu-Kim



Chris Eckley



Noelle Selin

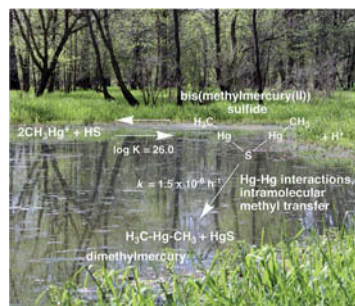
PAPERS

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Emerging investigator series: methylmercury speciation and dimethylmercury production in sulfidic solutions

Charlotte R. Kanzler, Peng Lian, Emma Leverich Trainer, Xiaoxuan Yang, Niranjana Govind, Jerry M. Parks and Andrew M. Graham*

Experimental and computational evidence show that dimethylmercury is produced from decomposition of bis(methylmercury(II)) sulfide.



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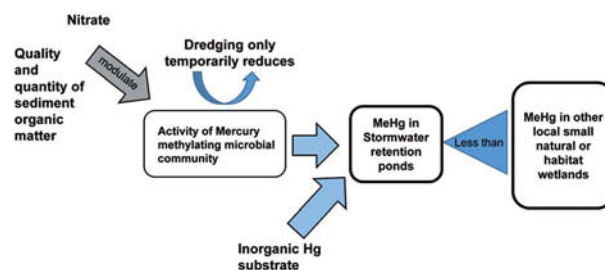


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Mercury methylation in stormwater retention ponds at different stages in the management lifecycle

R. J. Strickman* and C. P. J. Mitchell

Stormwater retention ponds produce MeHg, but accumulate less than other types of small wetlands. Their mercury biogeochemistry is subtly different from that of superficially similar environments.



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Response of mercury in an Adirondack (NY, USA) forest stream to watershed lime application

Geoffrey D. Millard,* Charles T. Driscoll, Douglas A. Burns, Mario R. Montesdeoca and Karen Riva-Murray

Total mercury and dissolved organic carbon concentrations increased following a lime application, while increases in methylmercury concentrations did not persist.

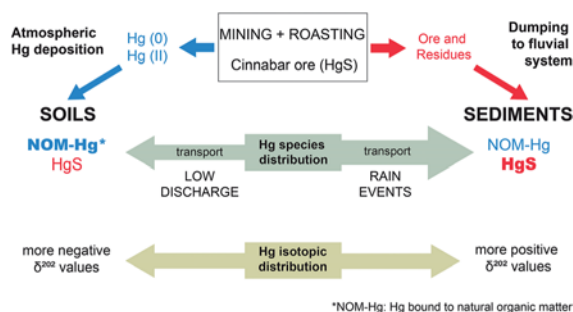


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Distribution of mercury species and mercury isotope ratios in soils and river suspended matter of a mercury mining area

Carluvy Baptista-Salazar,* Holger Hintelmann and Harald Biester

Light/heavy isotope enrichment is strongly related with Hg species. Combining Hg isotope analysis and Hg speciation allows the differentiation between Hg sources and Hg species transformation in Hg contaminated areas.

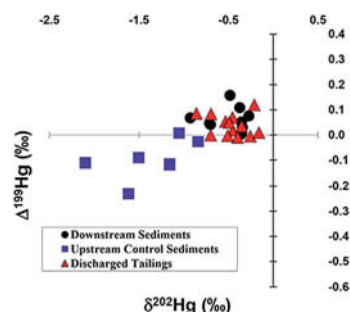


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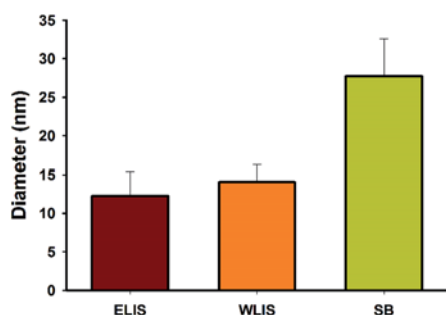
Evidence of transboundary mercury and other pollutants in the Puyango-Tumbes River basin, Ecuador–Peru

Bruce G. Marshall,* Marcello M. Veiga, Robert J. Kaplan, Rebecca Adler Miserendino, Gary Schudel, Bridget A. Bergquist, Jean R. D. Guimarães, Luis G. S. Sobral and Carolina Gonzalez-Mueller

Hg isotopic analyses show Au processing in Ecuador is source of pollution in Peru.



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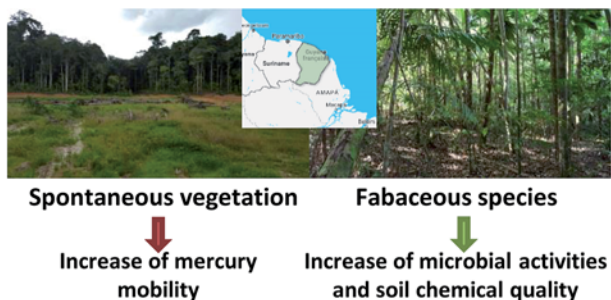


The precipitation, growth and stability of mercury sulfide nanoparticles formed in the presence of marine dissolved organic matter

Nashaat M. Mazrui,* Emily Seelen, Cecil K. King'onde, Sravan Thota, Joseph Awino, Jessica Rouge, Jing Zhao and Robert P. Mason*

Coastal and oceanic DOM formed stable mercury sulfide nanoparticle solutions but smaller sized particles were obtained when coastal DOM was used.

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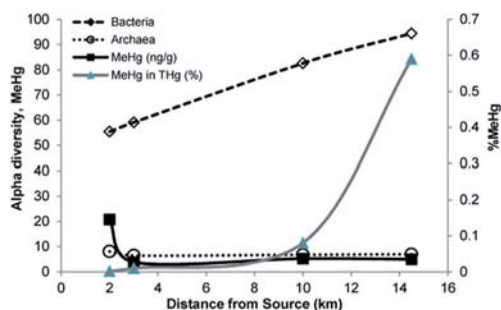


Mercury behaviour and C, N, and P biogeochemical cycles during ecological restoration processes of old mining sites in French Guiana

Ewan Couic,* Michel Grimaldi, Vanessa Alphonse, Clarisse Balland-Bolou-Bi, Alexandre Livet, Stéphanie Giusti-Miller, Max Sarrazin and Nouredine Bousserhine

Restoration processes affect positively microbial activities and decrease mercury mobility.

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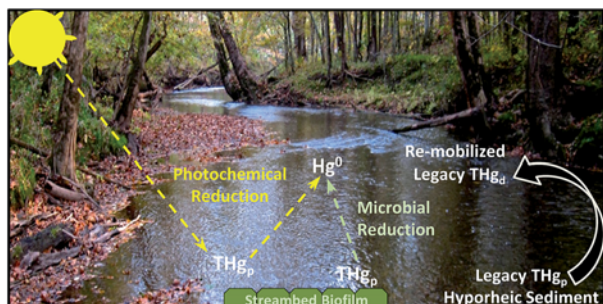


Microbial community structure with trends in methylation gene diversity and abundance in mercury-contaminated rice paddy soils in Guizhou, China

Tatiana A. Vishnivetskaya, Haiyan Hu, Joy D. Van Nostrand, Ann M. Wymore, Xiaohang Xu, Guangle Qiu, Xinbin Feng, Jizhong Zhou, Steven D. Brown, Craig C. Brandt, Mircea Podar, Baohua Gu* and Dwayne A. Elias*

Sulfate-reducing bacteria and methanogens are the primary Hg-methylators in Chinese rice paddies.

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Hg isotopes reveal in-stream processing and legacy inputs in East Fork Poplar Creek, Oak Ridge, Tennessee, USA

Jason D. Demers,* Joel D. Blum, Scott C. Brooks, Patrick M. Donovan, Ami L. Riscassi, Carrie L. Miller, Wang Zheng and Baohua Gu

Reduction processes and inputs of hyporheic pore water influence Hg cycling and flux in Hg-contaminated headwater stream.

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Mining legacy across a wetland landscape: high mercury in Upper Peninsula (Michigan) rivers, lakes, and fish

W. C. Kerfoot,* N. R. Urban, C. P. McDonald, H. Zhang, R. Rossmann, J. A. Perlinger, T. Khan, A. Hendricks, M. Priyadarshini and M. Bolstad

A geographic enigma is that atmospheric deposition of mercury is low and declining in the Upper Peninsula although total mercury (THg) and (MeHg) levels are high in waters and fish.

