Nitrogen Newsletter is a summary of recent publications, news and reports related to the cycling, effects and management of nitrogen. Prepared by Mary O’Brien and Jana Compton. Contact Jana Compton with any questions (Compton.jana@epa.gov)

Please note: Most of these links are available to EPA staff through library access – not all links will be available to folks outside EPA, depending on your access to specific journals and websites.

Table of Contents (ctrl-click to go to section)
Special Issues .................................................................................................................................. 1
Articles ............................................................................................................................................ 1
News ............................................................................................................................................... 8
Reports .......................................................................................................................................... 10
Web Pages..................................................................................................................................... 11

Special Issues

BIOGEOMON 2009
Biogeochemistry, 101(1-3), December 2010. ISSN 0168-2563.
http://springerlink.com/content/0168-2563/101/1-3/

Lake Restoration: An Experimental Ecosystem Approach for Eutrophication Control
Guest Editors: D.P. Hamilton, M.J. Landman
Hydrobiologia, 661(1), February 2011. ISSN 0018-8158.
http://www.springerlink.com/content/0018-8158/661/1/

Articles

Effects of estuarine sediment hypoxia on nitrogen fluxes and ammonia oxidizer gene transcription
http://dx.doi.org/10.1111/j.1574-6941.2010.00988.x

Seasonal variation in nitrous oxide and methane emissions from subtropical estuary and coastal mangrove sediments, Australia
Antonopoulos, Vassilis Z.
Modelling of water and nitrogen balances in the ponded water and soil profile of rice fields in Northern Greece
_http://dx.doi.org/10.1016/j.agwat.2010.08.026_

ArandaCirerol, Nancy, Francisco Comin, and Jorge Herrera-Silveira.
Nitrogen and phosphorus budgets for the Yucatan littoral: An approach for groundwater management
_Environmental Monitoring and Assessment_, 172(1-4): 493-505, January 2011. ISSN 0167-6369.
_http://dx.doi.org/10.1007/s10661-010-1349-z_

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Assessing the recovery potential of alpine moss-sedge heath: Reciprocal transplants along a nitrogen deposition gradient
_Environmental Pollution_, 159(1): 140-147, January 2011. ISSN 0269-7491.
_http://dx.doi.org/10.1016/j.envpol.2010.08.011_

Barba-Brioso, C., G. Quaranta, E. Galan, J. C. Fernandez-Caliani, and A. Miras.
The life cycle impact assessment applied to the Domingo Rubio tidal system by the study of seasonal variations of the aquatic eutrophication potential
_Science of the Total Environment_, 408(23): 5897-5902, November 1, 2010. ISSN 0048-9697.
_http://dx.doi.org/10.1016/j.scitotenv.2010.08.002_

Bargu, Sibel, John R. White, Chunyan Li, Jessica Czubakowski, and Robinson W. Fulweiler.
Effects of freshwater input on nutrient loading, phytoplankton biomass, and cyanotoxin production in an oligohaline estuarine lake
_http://dx.doi.org/10.1007/s10750-010-0545-8_

Barlett, Melissa A., and Laura G. Leff.
Planktonic bacterial responses to nutrient amendments in wetland mesocosms
_http://dx.doi.org/10.1007/s13157-010-0107-x_

Bassanino, Monica, Dario Sacco, Laura Zavattaro, and Carlo Grignani.
Nutrient balance as a sustainability indicator of different agro-environments in Italy
_Ecological Indicators_, 11(2): 715-723, March 2011. ISSN 1470-160X.
_http://dx.doi.org/10.1016/j.ecolind.2010.05.005_

Benitez-Gilabert, M., M. Alvarez-Cobelas, and David G. Angeler.
Effects of climatic change on stream water quality in Spain
Clark, Christopher M., and David Tilman.  
**Recovery of plant diversity following N cessation: effects of recruitment, litter, and elevated N cycling**  
[http://dx.doi.org/10.1890/09-1268.1](http://dx.doi.org/10.1007/s10584-009-9778-9)

**Bio-indicators of nitrogen pollution in heather moorland**  
[http://dx.doi.org/10.1016/j.scitotenv.2010.08.060](http://dx.doi.org/10.1016/j.scitotenv.2010.08.060)

**External N inputs and internal N cycling traced by isotope ratios of nitrate, dissolved reduced nitrogen, and particulate nitrogen in the eastern Mediterranean Sea**  
[http://dx.doi.org/10.1029/2009JG001214](http://dx.doi.org/10.1029/2009JG001214)

Eriksson, Tobias, Mats G. Oquist, and Mats B. Nilsson.  
**Effects of decadal deposition of nitrogen and sulfur, and increased temperature, on methane emissions from a boreal peatland**  
[http://dx.doi.org/10.1029/2010JG001285](http://dx.doi.org/10.1029/2010JG001285)

**Ensemble modelling of nitrogen fluxes: data fusion for a Swedish meso-scale catchment**  
[http://dx.doi.org/10.5194/hess-14-2383-2010](http://dx.doi.org/10.5194/hess-14-2383-2010)

Eyre, Bradley D., Angus J. P. Ferguson, Arthur Webb, Damien Maher, and Joanne M. Oakes.  
**Denitrification, N-fixation and nitrogen and phosphorus fluxes in different benthic habitats and their contribution to the nitrogen and phosphorus budgets of a shallow oligotrophic sub-tropical coastal system (southern Moreton Bay, Australia)**  
[http://dx.doi.org/10.1007/s10533-010-9425-6](http://dx.doi.org/10.1007/s10533-010-9425-6)

Falloon, Pete, and Richard Betts.  
**Climate impacts on European agriculture and water management in the context of adaptation and mitigation-The importance of an integrated approach**  
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**Nitrogen-15 signals of leaf-litter-soil continuum as a possible indicator of ecosystem nitrogen saturation by forest succession and N loads**

*Biogeochemistry*, 102(1-3): 251-263, January 2011. ISSN 0168-2563.

[http://dx.doi.org/10.1007/s10533-010-9438-1](http://dx.doi.org/10.1007/s10533-010-9438-1)


**Fungi mediate long term sequestration of carbon and nitrogen in soil through their priming effect**


[http://dx.doi.org/10.1016/j.soilbio.2010.09.017](http://dx.doi.org/10.1016/j.soilbio.2010.09.017)

Gascuel-Odoux, Chantal, Pierre Aurousseau, Patrick Durand, Laurent Ruiz, and Jerome Molenat.

**The role of climate on inter-annual variation in stream nitrate fluxes and concentrations**


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**Snow depth, soil freezing and nitrogen cycling in a northern hardwood forest landscape**

*Biogeochemistry*, 102(1-3): 223-238, January 2011. ISSN 0168-2563.

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Ham, Young-Sik, Hiromi Kobori, Joo-Hyon Kang, and Joon Ha Kim.

**Erratum to: Ammonium nitrogen deposition as a dominant source of nitrogen in a forested watershed experiencing acid rain in central Japan (vol. 212, pg. 337, 2010)**


[http://dx.doi.org/10.1007/s11270-010-0415-z](http://dx.doi.org/10.1007/s11270-010-0415-z)

Han, Haejin, Nathan Bosch, and J. David Allan.

**Spatial and temporal variation in phosphorus budgets for 24 watersheds in the Lake Erie and Lake Michigan basins**

*Biogeochemistry*, 102(1-3): 45-58, January 2011. ISSN 0168-2563.

[http://dx.doi.org/10.1007/s10533-010-9420-y](http://dx.doi.org/10.1007/s10533-010-9420-y)


**Benthic microalgae and bacteria facilitate carbon and nitrogen retention in shallow photic sediments**

*Geochimica et Cosmochimica Acta*, 74(12, Suppl. 1): A382, June 2010. ISSN 0016-7037.

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Hatcher, Patrick G., Rajaa Mesfioui, and Georgina McKee.  
**Identification of amides involved in Nitrogen sequestration in dissolved organic matter and sediments by ESI-FTICR-MS**  
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**Nitrogen removal by streams and rivers of the Upper Mississippi River basin**  
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**Ecosystem structure and function are complementary measures of water quality in a polluted, spring-influenced river**  
[http://dx.doi.org/10.1007/s11270-010-0432-y](http://dx.doi.org/10.1007/s11270-010-0432-y)

Kool, Dorien M., Jan Dolfing, Nicole Wrage, and Jan Willem Van Groenigen.  
**Nitrifier denitrification as a distinct and significant source of nitrous oxide from soil**  

Mackey, Katherine R. M., Gert L. van Dijken, Simran Mazloom, Andrea M. Erhardt, John Ryan, Kevin R. Arrigo, and Adina Paytan.  
**Influence of atmospheric nutrients on primary productivity in a coastal upwelling region**  
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**Modeling historical trends in Lake Superior total nitrogen concentrations**  
[http://dx.doi.org/10.1016/j.jglr.2010.07.008](http://dx.doi.org/10.1016/j.jglr.2010.07.008)

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**Dry and wet deposition of reduced nitrogen to the Tampa Bay Watershed**  
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Nie, Ming, Meng Lu, Qiang Yang, Xiao-Dong Zhang, Ming Xiao, Li-Fen Jiang, Ji Yang, Chang-Ming Fang, and Jia-Kuan Chen, and Bo Li. 

**Plants' use of different nitrogen forms in response to crude oil contamination** 
http://dx.doi.org/10.1016/j.envpol.2010.09.013

Oeurng, Chantha, Sabine Sauvage, and Jose-Miguel Sanchez-Perez. 
**Temporal variability of nitrate transport through hydrological response during flood events within a large agricultural catchment in south-west France** 
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**Nitrogen turnover in the leaf litter and fine roots of sugar maple** 
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**Consistent effects of nitrogen fertilization on soil bacterial communities in contrasting systems** 
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**Effect of sediment and nutrient loading on Lake Tahoe optical conditions and restoration opportunities using a newly developed lake clarity model** 
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**Spatial variability of sediment denitrification across the Atchafalaya River Basin, Louisiana, USA** 
http://dx.doi.org/10.1007/s13157-010-0091-1

**Atmospheric nitrous oxide during the last 140,000 years** 
http://dx.doi.org/10.1016/j.epsl.2010.09.027

**Nitrogen cycling and trace gas dynamics in coastal aquifers** 
*Geochimica et Cosmochimica Acta*, 74(12, Suppl. 1): A928, June 2010. ISSN 0016-7037.
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**Stable N isotope composition of nitrate reflects N transformations during the passage of water through a montane rain forest in Ecuador**  
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**Geomorphic controls on nitrate processing in a freshwater tidal marsh invaded by Hydrilla sp., Patuxent River, MD**  
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**Similar biotic factors affect early establishment and abundance of an invasive plant species across spatial scales**  
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**Small-scale spatial patterns in N-2-fixation and nutrient availability in an arctic hummock-hollow ecosystem**  
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**Plot- and watershed-scale soil moisture variability in a humid Piedmont watershed**  
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Wankel, Scott D., Annika C. Mosier, Colleen M. Hansel, Adina Paytan, and Christopher A. Francis.
Spatial variability in nitrification rates and ammonia-oxidizing microbial communities in the agriculturally impacted Elkhorn Slough estuary, California
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Molybdenum isotope fractionation by cyanobacterial assimilation during nitrate utilization and N-2 fixation
http://dx.doi.org/10.1111/j.1472-4669.2010.00262.x

**News**

MU scientists find new farming method to reduce greenhouse gases, increase farm yields
January, 13, 2011

For BNA subscribers (including EPA staff):

Chesapeake Bay: EPA site tracks progress in cutting pollution to Bay
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=19152312&vname=dennotallissues&wsn=497385000&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Air pollution: Momentum builds for global governance of air pollution as U.N. releases reports
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=19138826&vname=dennotallissues&wsn=497437500&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Air pollution: EPA report offers range for nitrogen, sulfur air standards based on acidification
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=19131725&vname=dennotallissues&wsn=497468500&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Water pollution: State programs to curb agricultural runoff fall short on enforcement, report says
Air pollution: EPA expected to set sectorwide pollution rules for power plants, refineries
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=19010085&vname=dennotallissues&wsn=497606000&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Water pollution: stormwater runoff, nutrients called major Clean Water priorities in 2011
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=18966799&vname=dennotallissues&wsn=497675000&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Air pollution: EPA releases data from study of emissions from animal feedlots
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=18958753&vname=dennotallissues&wsn=497698000&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

Water pollution: New Jersey governor signs bills to curb nutrient pollution of Barnegat Bay watershed
http://news.bna.com/deln/DELNWB/split_display.adp?fedfid=18925482&vname=dennotallissues&wsn=497893000&searchid=13715925&doctypeid=1&type=date&mode=doc&split=0&scm=DELNWB&pg=1

For *Greenwire* subscribers (including EPA staff):

Chesapeake Bay: States' pollution plans get lousy grades in watchdog's report card
*Greenwire*, January 25, 2011
http://www.eenews.net/Greenwire/2011/01/25/archive/15

Agriculture: Tilling the soil could aggravate climate change
*ClimateWire*, January 6, 2011
http://www.eenews.net/climatewire/2011/01/06/archive/10

Water pollution: EPA imposes Calif. nutrient curbs for Klamath River
*E&ENews PM*, January 4, 2011
http://www.eenews.net/eenewspm/2011/01/04/archive/3

For *Inside EPA* subscribers (including EPA staff):

EPA flags uncertainties in draft study of biofuels' environmental impacts
Advisers query EPA bid to set upstream nutrient limits for Florida's coast

Reports

Convention on Long-range Transboundary Air Pollution Task Force on Hemispheric Transport of Air Pollution
**HTAP 2010 Assessment Report**
http://www.htap.org/
Click on “Assessment Reports” and then on “HTAP 2010.”

International Union of Air Pollution Prevention and Environmental Protection's World Clean Air Congress
**One Atmosphere: Final Declaration of the XVth World Clean Air Congress, Vancouver, September 2010**
Global Atmospheric Pollution Forum

Atmospheric Pollution: Developing a Global Approach (Discussion Paper)

Policy Assessment for the Review of the Secondary National Ambient Air Quality Standards for Oxides of Nitrogen and Oxides of Sulfur
http://www.epa.gov/ttn/naaqs/standards/no2so2sec/cr_pa.html

Environmental Law & Policy Center and the Mississippi River Collaborative
Cultivating Clean Water: State-Based Regulation of Agricultural Runoff Pollution
Chicago: ELPC, March 2010.
http://msrivercollab.org/sites/default/files/Cultivating%20Clean%20Water-%20High%20Res.%20PDF%20March%2023%202010_0.pdf

Andreen, William, Robert Glicksman, Rena Steinzor, Yee Huang, and Shana Jones
Missing the Mark in the Chesapeake Bay: A Report Card for the Phase I Watershed Implement Plans
Center for Progressive Reform White Paper #1102, January 2011.
http://www.progressivereform.org/articles/ChesBay_WIPs_1102.pdf

Biofuels and the Environment: First Triennial Report to Congress (External Review Draft)
http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=217443#Download

U.S. Environmental Protection Agency Science Advisory Board
Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options (Draft)

Web Pages

Chesapeake Bay TMDL Tracking and Accounting System (BayTAS)
http://stat.chesapeakebay.net/BayTAS
Source: ChesapeakeStat
Convention on Long-Range Transboundary Air Pollution
http://www.unece.org/env/lrtap/
Source: United Nations Economic Commission for Europe

Protocol to Abate Acidification, Eutrophication and Ground-level Ozone
http://www.unece.org/env/lrtap/multi_h1.htm
Source: United Nations Economic Commission for Europe

Monitored AFOs
http://www.epa.gov/airquality/agmonitoring/data.html
Source: U.S. Environmental Protection Agency

Barnegat Bay
http://www.state.nj.us/dep/barnegatbay/
Source: State of New Jersey Department of Environmental Protection