EPA Office of Water
Recent Water Research
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Protecting Aquatic Life and Human Health from Chemicals and Microbes in Water

From EPA

HEALTH EFFECTS SUPPORT DOCUMENTS FOR PERFLUOROOCTANOIC ACID (PFOA) AND PERFLUOROOCTANE SULFONATE (PFOS) - *EPA-822-R-16-003; EPA-822-R-16-002*

EPA established health advisories (HAs) for PFOA and PFOS in drinking water at 70 parts per trillion based on EPA's assessment of the latest peer-reviewed science. Evidence supporting these 2016 HAs is now available in the support documents linked above.

Report on Point Source Progress in Hypoxia Task Force States. Hypoxia Task Force, March 1, 2016. First report summarizing extent of nitrogen/phosphorus monitoring and discharge limits for sewage treatment plants within 12 states comprising the Hypoxia Task Force.

Go to Report or www.epa.gov/ms-htf

From Collaborators

WRF—Strontium in Water: Critical Review of Its Treatment Options and Considerations for Its Removal. Najm, I., 2016. Report 4604. Documents treatment options for removal of naturally occurring strontium; makes recommendations for future research.

Go to Report or www.waterrf.org

WRF—Nitrosamine Occurrence Survey. Krasner, S.W., et al., 2016. Report 4461. Occurrence of nitrosamines and associated water quality parameters for various treatment technologies.

Go to Report or www.waterrf.org

Harmful Algal Blooms and Hypoxia Comprehensive Research Plan and Action Strategy: An Interagency Report. National Science and Technology Council Subcommittee on Ocean Science and Technology, 2016. Reports on progress since 2008, identifies challenges, and recommends actions to address HABs.

Go to Report or www.whitehouse.gov

WRF—Chemically Enhanced Biological Filtration to Enhance Water Quality and Minimize Costs. Evans, P.J., et al., 2016. Report 4429A. Data on ability of oxidant chemistries currently in use to enhance biological filtration of NOM; guidance on optimizing biological filtration.

Go to Report or www.waterrf.org

WRF—Fate of Non-Regulated Disinfection By-Products in Distribution Systems. Reckhow, D.A., et al., 2016. Report 4242. Formation, chemical and biological degradation of key DBPs in drinking water distribution systems.

Go to Report or www.waterrf.org

WRF—Treatment Mitigation Strategies for Poly- and Perfluorinated Chemicals. Dickenson, E.R.V. and C. Higgins, 2016. Report 4322. Literature review on occurrence and treatability of PFCs and targeted assessment to determine fate in treatment plants.

Go to Report or www.waterrf.org

The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. Crimmins, A., J. Balbus, **J.L. Gamble**, C.B. Beard, J.E. Bell, D. Dodgen, R.J. Eisen, **N. Fann**, M.D. Hawkins, S.C. Herring, **L. Jantarasami**, D.M. Mills, S. Saha, **M.C. Sarofim**, J. Trtanj, and L. Ziska, 2016. U.S. Global Change Research Program, Washington, DC, 312 pp. Finds Americans are vulnerable to health impacts associated with climate change; highlights vulnerability factors.

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From Journals

Elucidating Hydraulic Fracturing Impacts on Ground Water Quality Using a Regional Geospatial Statistical Modeling Approach. Burton, T.G., et al., 2016. *Science of the Total Environment,* 545, 114-126.

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Pronounced Daily Succession of Phytoplankton, Archaea and Bacteria Following a Spring Bloom. Needham, D.M., and J.A. Fuhrman, 2016. *Nature Microbiology,* 1, 16005.

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Elevated Bladder Cancer in Northern New England: The Role of Drinking Water and Arsenic. Baris, D., et al., 2016. *Journal of the National Cancer Institute,* 108(9).

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Brine Spills Associated With Unconventional Oil Development in North Dakota. Lauer, N.E., et al., 2016. *Environmental Science & Technology,* 50(10), 5389-5397.

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Photocatalytic Oxidation of Five Contaminants of Emerging Concern by UV/TiO_2: Identification of Intermediates and Degradation Pathways. Alvarez-Corena, J.R., et al., 2016. *Environmental Engineering Science,* 33(2), 140-147.

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A Systematic Evaluation of Chemicals in Hydraulic-Fracturing Fluids and Wastewater for Reproductive and Developmental Toxicity. Elliot, E.G., et al., 2016. *Journal of Exposure Science and Environmental Epidemiology.*

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Evaluating the Extent of Pharmaceuticals in Surface Waters of the United States Using a National-Scale Rivers and Streams Assessment Survey. Batt, A.L., T.M. Kincaid, M.S. Kostich, J.M. Lazorchak and A.R. Olsen, 2016. *Environmental Toxicology and Chemistry,* 35(4), 874-881.

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Global Expansion of Harmful Cyanobacterial Blooms: Diversity, Ecology, Causes, and Controls. Gobler, C.J., et al., 2016. *Harmful Algae,* 54, 87-97.

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Distribution and Attenuation of Polycyclic Aromatic Hydrocarbons in Gulf of Mexico Seawater From the Deepwater Horizon Oil Accident. Boehm, P.D., et al., 2016. *Environmental Science & Technology,* 50(2), 584-592.

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Development of a Novel Kinetic Model for the Analysis of PAH Biodegradation in the Presence of Lead and Cadmium Co-Contaminants. Deary, M.E., et al., 2016. *Journal of Hazardous Materials,* 307, 240-252.

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Sources and Transport of Contaminants of Emerging Concern: A Two-Year Study of Occurrence and Spatiotemporal Variation in a Mixed Land Use Watershed. Fairbairn, D.J., et al., 2016. *Science of the Total Environment,* 551, 605-613.

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Toxicity and Transfer of Polyvinylpyrrolidone-Coated Silver Nanowires in an Aquatic Food Chain Consisting of Algae, Water Fleas, and Zebrafish. Chae, Y. and Y.J. An, 2016. *Aquatic Toxicology,* 173, 94-104.

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Screening Historical Water Quality Monitoring Data for Chemicals of Potential Ecological Concern: Hazard Assessment for Selected Inflow and Outflow Monitoring Stations at the Water Conservation Areas, South Florida. Carriger, J.F., et al., 2016. *Water Air and Soil Pollution,* 227(1).

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Reversible and Irreversible Sorption of Perfluorinated Compounds (PFCs) by Sediments of an Urban Reservoir. Chen, H., et al., 2016. *Chemosphere,* 144, 1747-1753.

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Human and Bovine Viruses and Bacteria at Three Great Lakes Beaches: Environmental Variable Associations and Health Risk. Corsi, S.R., et al., 2016. *Environmental Science & Technology,* 50(2), 987-995.

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Risk Assessment of Triazine Herbicides in Surface Waters and Bioaccumulation of Irgarol and M1 by Submerged Aquatic Vegetation in Southeast Florida. Fernandez, M.V. and P.R. Gardinali, 2016. *Science of the Total Environment,* 541, 1556-1571.

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Biotransformation of Pharmaceuticals Under Nitrification, Nitratation and Heterotrophic Conditions. Fernandez-Fontaina, E., et al., 2016. *Science of the Total Environment,* 541, 1439-1447.

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Concurrence of Aqueous and Gas Phase Contamination of Groundwater in the Wattenberg Oil and Gas Field of Northern Colorado. Li, H.S., et al., 2016. *Water Research,* 88, 458-466.

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Contrasting Regional and National Mechanisms for Predicting Elevated Arsenic in Private Wells Across the United States Using Classification and Regression Trees. Frederick, L., et al., 2016. *Water Research,* 91, 295-304.

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Uncertainty in Monitoring *E. coli* Concentrations in Streams and Stormwater Runoff. Harmel, R.D., et al., 2016. *Journal of Hydrology,* 534, 524-533.

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A Long-Term Assessment of Pesticide Mixture Effects on Aquatic Invertebrate Communities. Hasenbein, S., et al., 2016. *Environmental Toxicology and Chemistry,* 35(1), 218-232.

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17 beta-Estradiol Influent and Effluent Concentrations in Wastewater: Demographic Influences and the Risk to Environmental Health. Heffron, K.T., et al., 2016. *Environmental Monitoring and Assessment,* 188(5).

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Relative Importance of *Microcystis* Abundance and Diversity in Determining Microcystin Dynamics in Lake Erie Coastal Wetland and Downstream Beach Water. Hu, C., et al., 2016. *Journal of Applied Microbiology,* 120(1), 138-151.

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Determination of a Broad Spectrum of Pharmaceuticals and Endocrine Disruptors in Biofilm From a Waste Water Treatment Plant-Impacted River. Huerta, B., et al., 2016. *Science of the Total Environment,* 540, 241-249.

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Cellular and Aqueous Microcystin-LR Following Laboratory Exposures of *Microcystis aeruginosa* to Copper Algaecides. Iwinski, K.J., et al., 2016. *Chemosphere,* 147, 74-81.

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Water Disinfection Byproducts Induce Antibiotic Resistance-Role of Environmental Pollutants in Resistance Phenomena. Li, D., et al., 2016. *Environmental Science & Technology,* 50(6), 3193-3201.

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Nitrogen Pollution Is Linked to US Listed Species Declines. Hernandez, D.L., et al., 2016. *Bioscience,* 66(3), 213-222.

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Fingerprinting the Reactive Toxicity Pathways of 50 Drinking Water Disinfection By-Products. Stalter, D., et al., 2016. *Water Research,* 91, 19-30.

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Formation of Bromate and Halogenated Disinfection Byproducts During Chlorination of Bromide-Containing Waters in the Presence of Dissolved Organic Matter and CuO. Liu, C. and J.P. Croue, 2016. *Environmental Science & Technology,* 50(1), 135-144.

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Impact of Water Quality on Chlorine Demand of Corroding Copper. Lytle, D.A. and J. Liggett, 2016. *Water Research,* 92, 11-21.

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Pharmaceutical Occurrence in Groundwater and Surface Waters in Forests Land-Applied With Municipal Wastewater. McEachran, A.D., et al., 2016. *Environmental Toxicology and Chemistry,* 35(4), 898-905.

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Accounting for Metal Bioavailability in Assessing Water Quality: A Step Change? Merrington, G., et al., 2016. *Environmental Toxicology and Chemistry,* 35(2), 257-265.

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Formation and Occurrence of New Polar Iodinated Disinfection Byproducts in Drinking Water. Pan, Y., et al., 2016. *Chemosphere,* 144, 2312-2320.

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Assessing Clarity of Message Communication for Mandated USEPA Drinking Water Quality Reports. Phetxumphou, K., et al., 2016. *Journal of Water and Health,* 14(2), 223-235.

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Perchlorate Formation During the Electro-Peroxone Treatment of Chloride-Containing Water: Effects of Operational Parameters and Control Strategies. Lin, Z.R., et al., 2016. *Water Research,* 88, 691-702.

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Copper Corrosion Under the Lead and Copper Rule Long-Term Revisions. Roth, D.K., et al., 2016. *Journal American Water Works Association,* 108(4), 56-61.

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Effect of Increasing Bromide Concentration on Toxicity in Treated Drinking Water. Sawade, E., et al., 2016. *Journal of Water and Health,* 14(2), 183-191.

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Effect of Climate Change on Runoff of *Campylobacter* and *Cryptosporidium* From Land to Surface Water. Sterk, A., et al., 2016. *Water Research,* 95, 90-102.

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Ecotoxic Pharmaceuticals, Personal Care Products, and Other Emerging Contaminants: A Review of Environmental, Receptor-Mediated, Developmental, and Epigenetic Toxicity With Discussion of Proposed Toxicity to Humans. Wilkinson, J.L., et al., 2016. *Critical Reviews in Environmental Science and Technology,* 46(4), 336-381.

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Impact of Nitrification on the Formation of N-Nitrosamines and Halogenated Disinfection Byproducts Within Distribution System Storage Facilities. Zeng, T. and W.A. Mitch, 2016. *Environmental Science & Technology,* 50(6), 2964-2973.

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Overview of Chronic Oral Toxicity Values for Chemicals Present in Hydraulic Fracturing Fluids, Flowback, and Produced Waters. Yost, E.E., J. Stanek, R.S. DeWoskin and **L.D. Burgoon**, 2016. *Environmental Science & Technology,* 50(9), 4788-4797.

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Ozonation of Cylindrospermopsin (Cyanotoxin): Degradation Mechanisms and Cytotoxicity Assessments. Yan, S.W., et al., 2016. *Environmental Science & Technology,* 50(3), 1437-1446.

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Occurrence of Endocrine Disrupting Compounds in Aqueous Environment and Their Bacterial Degradation: A Review. Zhang, C., et al., 2016. *Critical Reviews in Environmental Science and Technology,* 46(1), 1-59.

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Bacterial Reduction of Highly Concentrated Perchlorate: Kinetics and Influence of Co-Existing Electron Acceptors, Temperature, pH and Electron Donors. Zhu, Y.P., et al., 2016. *Chemosphere,* 148, 188-194.

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Biofiltration for Stormwater Harvesting: Comparison of *Campylobacter* spp. and *Escherichia coli* Removal Under Normal and Challenging Operational Conditions. Chandrasena, G.I., et al., 2016. *Journal of Hydrology,* 537, 248-259.

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Effects of Plumbing Systems on Human Exposure to Disinfection Byproducts in Water: A Case Study. Chowdhury, S., 2016. *Journal of Water and Health,* 14(3), 489-503.

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Meeting the Public Health Challenge of Protecting Private Wells: Proceedings and Recommendations From an Expert Panel Workshop. Fox, M.A., et al., 2016. *Science of the Total Environment,* 554-555, 113-118.

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Barriers to Innovation in Urban Wastewater Utilities: Attitudes of Managers in California. Kiparsky, M., et al., 2016. *Environmental Management,* 57(6), 1204-1216.

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Natural Attenuation of NDMA Precursors in an Urban, Wastewater-Dominated Wash. Woods, G.C. and E.R.V. Dickenson, 2016. *Water Research,* 89, 293-300.

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A Comprehensive Survey on the Occurrence and Fate of Nitrosamines in Sewage Treatment Plants and Water Environment. Lee, J.H. and J.E. Oh, 2016. *Science of the Total Environment,* 556, 330-337.

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Monochloramine Cometabolism by Mixed-Culture Nitrifiers Under Drinking Water Conditions. Maestre, J.P., D.G. Wahman and G.E. Speitel, Jr., 2016. *Environmental Science & Technology,* 50(12), 6240-6248.

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Technical Aspects of Using Human Adenovirus as a Viral Water Quality Indicator. Rames, E., et al., 2016. *Water Research,* 96, 308-326.

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Pathway-Based Approaches for Assessment of Real-Time Exposure to an Estrogenic Wastewater Treatment Plant Effluent on Fathead Minnow Reproduction. Cavallin, J.E., K.M. Jensen, M.D. Kahl, D.L. Villeneuve, K.E. Lee, **A.L. Schroeder**, J. Mayasich, **E.P. Eid, K.R. Nelson, R.Y. Milsk, B.R. Blackwell, J.P. Berninger, C.A. LaLone, C. Blanksma, T. Jicha, C. Elonen, R. Johnson** and **G.T. Ankley**, 2016. *Environmental Toxicology and Chemistry,* 35(3), 702-716.

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Early Warning of Changing Drinking Water Quality by Trend Analysis. Tomperi, J., et al., 2016. *Journal of Water and Health,* 14(3), 43-442.

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N-nitrosamine Formation by Monochloramine, Free Chlorine, and Peracetic Acid Disinfection With Presence of Amine Precursors in Drinking Water System. West, D.M., et al., 2016. *Chemosphere,* 153, 521-527.

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Recent and Upcoming Meetings

RECENT:

AWWA ACE 16. June 20-22, 2016 in Chicago, IL.

Go to Meeting Page or www.awwa.org

WaterPro Conference. September 12-14, 2016 in Orlando, FL.

Go to Meeting Page

WEFTEC 2016. September 24-28, 2016 in New Orleans, LA.

Go to Meeting Page or www.weftec.org

UPCOMING:

AMWA 2016 Annual Meeting. October 16-19, 2016 in Scottsdale, AZ.

Go to Meeting Page or www.amwa.net

Water Quality Technology Conference® & Exposition. November 13-17, 2016 in Indianapolis, IN.

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NWRA Annual Conference. November 14-16, 2016 in Coronado, CA.

Go to Meeting Page or www.nwra.org

American Water Summit 2016. December 6-7, 2016 in Miami, FL.

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AWWA – The Utility Management Conference™ 2017. February 7-10, 2017 in Tampa, FL.

Go to Meeting Page or www.awwa.org

56th SOT Annual Meeting & ToxExpo. March 12-16, 2017 in Baltimore, MD.

Go to Meeting Page or www.toxicology.org/events

2017 Federal Water Issues Conference. March 20-22, 2017 in Washington, DC.

Go to Meeting Page or www.nwra.org

AMWA 2017 Water Policy Conference. March 26-29, 2017 in Washington, DC.

Go to Meeting Page or www.amwa.net

Innovative and Affordable Tools and Technologies for Sustainable Public Health Protection

From Collaborators

WE&RF—User's Guide to the WERF BMP Toolkit Framework Version 2.1. Zhang, H., and A.C. Rowney, 2016. Project SWC1R06F2T. Aimed at improving selection and design of BMP systems and development of effective watershed management plans.

Go to Report or www.werf.org

WRF—Advanced Techniques for Monitoring Changes in NOM and Controlling DBPs Under Dynamic Weather Conditions. Wright, B., et al., 2016. Report 4422. Online monitoring system to detect changes in character and amount of NOM and associated DBP precursor concentration.

Go to Report or www.waterrf.org

Using Graywater and Stormwater to Enhance Local Water Supplies: An Assessment of Risks, Costs, and Benefits. Committee on the Beneficial Use of Graywater and Stormwater, 2016. Examines technical, economic, regulatory, and social issues associated with graywater and stormwater.

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From Journals

Bacterial Community Structure and Variation in a Full-Scale Seawater Desalination Plant for Drinking Water Production. Belila, A., et al., 2016. *Water Research,* 94, 62-72.

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Human Exposure to Wastewater-Derived Pharmaceuticals in Fresh Produce: A Randomized Controlled Trial Focusing on Carbamazepine. Paltiel, O., et al., 2016. *Environmental Science & Technology,* 50(8), 4476-4482.

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Evaluation of High Density Algal Cultivation for Secondary Wastewater Polishing. Xu, M., et al., 2016. *Water Environment Research,* 88(1), 47-53.

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Tracking and Quantification of Nitrifying Bacteria in Biofilm and Mixed Liquor of a Partial Nitrification MBBR Pilot Plant Using Fluorescence *in situ* Hybridization. Abzazou, T., et al., 2016. *Science of the Total Environment,* 541, 1115-1123.

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Detection of the Antimicrobial Triclosan in Environmental Samples by Immunoassay. Ahn, K.C., et al., 2016. *Environmental Science & Technology,* 50(7), 3754-3761.

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Removal of Bisphenol A From Aqueous Medium Using Molecularly Surface Imprinted Microbeads. Bayramoglu, G., et al., 2016. *Chemosphere,* 150, 275-284.

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Removal of N-nitrosodimethylamine Precursors With Powdered Activated Carbon Adsorption. Beita-Sandi, W., et al., 2016. *Water Research,* 88, 711-718.

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Reversible, Selective Trapping of Perchlorate From Water in Record Capacity by a Cationic Metal-Organic Framework. Colinas, I.R., et al., 2016. *Environmental Science & Technology,* 50(4), 1949-1954.

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Saline Groundwater From Coastal Aquifers as a Source for Desalination. Stein, S., et al., 2016. *Environmental Science & Technology,* 50(4), 1955-1963.

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Coupling Technique for Deep Removal of Manganese and Iron From Potable Water. Chen, L., et al., 2016. *Environmental Engineering Science,* 33(4), 261-269.

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Biotransformation and Adsorption of Pharmaceutical and Personal Care Products by Activated Sludge After Correcting Matrix Effects. Deng, Y., et al., 2016. *Science of the Total Environment,* 544, 980-986.

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Investigating the Energy-Water Usage Efficiency of the Reuse of Treated Municipal Wastewater for Artificial Groundwater Recharge. Fournier, E.D., et al., 2016. *Environmental Science & Technology,* 50(4), 2044-2053.

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Magnetic Microparticles as a New Tool for Lake Restoration: A Microcosm Experiment for Evaluating the Impact on Phosphorus Fluxes and Sedimentary Phosphorus Pools. Funes, A., et al., 2016. *Water Research,* 89, 366-374.

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Characterizing Bacteriophage PR772 as a Potential Surrogate for Adenovirus in Water Disinfection: A Comparative Analysis of Inactivation Kinetics and Replication Cycle Inhibition by Free Chlorine. Gall, A.M., et al., 2016. *Environmental Science & Technology,* 50(5), 2522-2529.

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Complex Interactions Among Nutrients, Chlorophyll-a, and Microcystins in Three Stormwater Wet Detention Basins With Floating Treatment Wetlands. Hartshorn, N., et al., 2016. *Chemosphere,* 144, 408-419.

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Use of Aerobic Spores as a Surrogate for *Cryptosporidium* Oocysts in Drinking Water Supplies. Headd, B. and S.A. Bradford, 2016. *Water Research,* 90, 185-202.

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Formation of Haloacetonitriles and Haloacetamides and Their Precursors During Chlorination of Secondary Effluents. Huang, H., et al., 2016. *Chemosphere,* 144, 297-303.

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Effect of Self-Alkalization on Nitrite Accumulation in a High-Rate Denitrification System: Performance, Microflora and Enzymatic Activities. Li, W., et al., 2016. *Water Research,* 88, 758-765.

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Inactivation Mechanism of Chlorination in *Escherichia coli* Internalized in *Limnoithona sinensis* and *Daphnia magna*. Lin, T., et al., 2016. *Water Research,* 89, 20-27.

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Degradation of Microcystins From *Microcystis aeruginosa* by 185-nm UV Irradiation. Liu, S.Y., et al., 2016. *Water Air and Soil Pollution,* 227(4).

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Point-of-Use Water Disinfection Using Ultraviolet and Visible Light-Emitting Diodes. Lui, G.Y., et al., 2016. *Science of the Total Environment,* 553, 626-635.

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Removal of Environmental Estrogens by Bacterial Cell Immobilization Technique. Ma, C., et al., 2016. *Chemosphere,* 144, 607-614.

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Solar Inactivation of *Enterococci* and *Escherichia coli* in Natural Waters: Effects of Water Absorbance and Depth. Maraccini, P.A., et al., 2016. *Environmental Science & Technology,* 50(10), 5068-5076.

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Effect of Chlorination on the Protein Phosphatase Inhibition Activity for Several Microcystins. Mash, H. and A. Wittkorn, 2016. *Water Research,* 95, 230-239.

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Conventional Drinking Water Treatment and Direct Biofiltration for the Removal of Pharmaceuticals and Artificial Sweeteners: A Pilot-Scale Approach. McKie, M.J., et al., 2016. *Science of the Total Environment,* 544, 10-17.

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Transformation of Contaminant Candidate List (CCL3) Compounds During Ozonation and Advanced Oxidation Processes in Drinking Water: Assessment of Biological Effects. Mestankova, H., et al., 2016. *Water Research,* 93, 110-120.

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Effect of Matrix Components on UV/H_2O_2 and UV/$S_2O_8^{2-}$ Advanced Oxidation Processes for Trace Organic Degradation in Reverse Osmosis Brines From Municipal Wastewater Reuse Facilities. Yang, Y., et al., 2016. *Water Research,* 89, 192-200.

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Perfluorooctanoic Acid Degradation Using UV-Persulfate Process: Modeling of the Degradation and Chlorate Formation. Qian, Y.J., et al., 2016. *Environmental Science & Technology,* 50(2), 772-781.

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A Review of Polymer Nanofibres by Electrospinning and Their Application in Oil-Water Separation for Cleaning Up Marine Oil Spills. Sarbatly, R., et al., 2016. *Marine Pollution Bulletin,* 106(1-2), 8-16.

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N-nitrosodimethylamine (NDMA) Formation During Ozonation of Wastewater and Water Treatment Polymers. Sgroi, M., et al., 2016. *Chemosphere,* 144, 1618-1623.

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Impact of Bromide on Halogen Incorporation into Organic Moieties in Chlorinated Drinking Water Treatment and Distribution Systems. Tan, J., et al., 2016. *Science of the Total Environment,* 541, 1572-1580.

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Evaluating Simultaneous Chromate and Nitrate Reduction During Microbial Denitrification Processes. Peng, L., et al., 2016. *Water Research,* 89, 1-8.

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The Fate of H_2O_2 During Managed Aquifer Recharge: A Residual From Advanced Oxidation Processes for Drinking Water Production. Wang, F., et al., 2016. *Chemosphere,* 148, 263-269.

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Simultaneous Nitrogen, Phosphorous, and Hardness Removal From Reverse Osmosis Concentrate by Microalgae Cultivation. Wang, X.X., et al., 2016. *Water Research,* 94, 215-224.

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Arsenic Removal From Water Using a Novel Amorphous Adsorbent Developed From Coal Fly Ash. Zhang, K.H., et al., 2016. *Water Science and Technology,* 73(8), 1954-1962.

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Removal of *Microcystis aeruginosa* Using Cationic Starch Modified Soils. Shi, W., et al., 2016. *Water Research,* 97, 19-25.

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Recent and Upcoming Meetings

RECENT:

Water Summit 2016. June 14-15, 2016 in Milwaukee, WI.

Go to Meeting Page or www.thewatercouncil.com

UPCOMING:

2016 WateReuse Potable Reuse Summit. October 17-18, 2016 in Oklahoma City, OK.

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Ecological Systems Approach to Protect and Restore Sustainable Water Quality and Water Quantity on a Watershed Basis

From EPA

A PRACTITIONER'S GUIDE TO THE BIOLOGICAL CONDITION GRADIENT: A FRAMEWORK TO DESCRIBE INCREMENTAL CHANGE IN AQUATIC ECOSYSTEMS - *EPA-842-R-16-001*

Guide outlines scientific framework called the biological condition gradient (BCG). States, territories, and tribes can use the BCG to interpret biological responses to increasing effects of stressors on aquatic ecosystems. It also provides a common language to interpret the condition of aquatic resources across state and regional boundaries, even when assessment approaches differ.

EPA RESEARCH 2015 YEARBOOK - *U.S. EPA, Office of Research and Development National Center*

Highlights results and impacts of scientific research conducted throughout the year 2015 by EPA and its grantees and awardees.

National Rivers and Streams Assessment 2008-2009: A Collaborative Survey. EPA-841-R-16-007. Finds 46% of the nation's river and stream miles do not support healthy aquatic populations due to phosphorus and nitrogen pollution.

Go to Report or https://www.epa.gov/national-aquatic-resource-surveys

National Wetland Condition Assessment 2011: A Collaborative Survey of the Nation's Wetlands. EPA-843-R-15-005. Finds 48% of wetlands in good condition based on plant community. Physical alteration is most widespread stressor.

Go to Report or https://www.epa.gov/national-aquatic-resource-surveys

National Coastal Condition Assessment 2010. EPA-841-R-15-006. Over 50% of coastal and Great Lakes nearshore waters rate good for biological and sediment quality; 1/3 are good for water quality; contaminants in fish tissue widespread.

Go to Report or www.epa.gov/national-aquatic-resource-surveys

Stormwater Management in Response to Climate Change Impacts: Lessons From the Chesapeake Bay and Great Lakes Regions (Final Report). EPA-600-R-15-087. Insights from stakeholders to further adoption of climate change adaptation practices in stormwater management.

Go to Report or www.epa.gov/risk

From Collaborators

SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water. U.S. Bureau of Reclamation, 2016. Shows several increased risks to western United States water resources during 21st century resulting from climate change.

Go to Report or www.usbr.gov/climate/index.html

USGS—Nutrient, Organic Carbon, and Chloride Concentrations and Loads in Selected Long Island Sound Tributaries—Four Decades of Change Following the Passage of the Federal Clean Water Act. Mullaney, J.R., 2016. Scientific Investigations Report 2015-5189. Reports increases in flow, decreases in N, and increases in chloride associated with changes in management practices and land use.

Go to Report

WE&RF—The True Impact of Various Nutrient Species and the Best Ways to Manage Them. WERF Staff, 2016. *Water Innovations,* 34-35. Research determines effect of nutrient loading on HAB growth.

Go to Report or wateronline.epubxp.com

USGS—Total Cylindrospermopsins, Microcystins/Nodularins, and Saxitoxins Data for the 2007 United States Environmental Protection Agency National Lake Assessment. Loftin, K.A., et al., 2016. U.S. Geological Survey Data Series 929. First national reconnaissance of cyanotoxins in U.S. freshwater lakes, ponds, and reservoirs.

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Metformin and Other Pharmaceuticals Widespread in Wadeable Streams of the Southeastern United States. Bradley, P.M., et al., 2016. *Environmental Science & Technology Letters,* 3(6), 243-249.

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Barrage Fishponds: Reduction of Pesticide Concentration Peaks and Associated Risk of Adverse Ecological Effects in Headwater Streams. Gaillard, J., et al., 2016. *Journal of Environmental Management,* 169, 261-271.

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Recent and Upcoming Meetings

RECENT:

2016 Sustainable Water Management Conference. March 7-10, 2016 in Providence, RI.

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31st Annual WateReuse Symposium. September 11-14, 2016 in Tampa, FL.

Go to Meeting Page or www.watereuse.org

GWPC Annual Forum. September 11-14, 2016 in Orlando, FL.

Go to Meeting Page or www.gwpc.org

UPCOMING:

SETAC North America 37th Annual Meeting. November 6-10, 2016 in Orlando, FL.

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NGWA Expo 2016. December 6-8, 2016 in Las Vegas, NV.

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Rising Seas Summit. December 13-15, 2016 in New Orleans, LA.

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WEF Midyear Meeting. January 25-28, 2017 in Coral Gables, Florida.

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