References

American Public Works Association (APWA). 1992. *A Study of Nationwide Costs to Implement Municipal Storm Water Best Management Practices*. Southern California Chapter. Water Resource Committee.

Arnold, C.L. and C.J. Gibbons. 1996. "Impervious Surface Coverage: The Emergence of a Key Environmental Indicator." *Journal of the American Planning Association*. Vol. 62, No. 2.

Bannerman, R.T., A.D. Legg, and S. R. Greb. 1996. *Quality of Wisconsin Stormwater, 1989-94*. U.S. Geological Survey Open File Report 96-458. Prepared in Cooperation with the Wisconsin Department of Natural Resources. Madison, WI.

Bannerman, R.T., D.W. Owens, R.B. Dodds and N.J. Hornewer. 1993. "Sources of Pollutants in Wisconsin Stormwater." *Water Science and Technology*. Vol. 28, No. 3-5, pp. 241-259.

Barron, M.G. 1995. Bioaccumulation and Bioconcentration in Aquatic Organisms. CRC Press.

Bastian, R.K. 1997. "Potential Impacts on Receiving Waters." *Effects of Water Development and Management on Aquatic Ecosystems*. Proceedings of an Engineering Foundation Conference. L.A. Roesner, ed. American Society of Civil Engineers. New York, NY.

Bell, W. 1998. *Appropriate BMP Technologies for Ultra-Urban Applications*. Presented at the Regional Conference on Minimizing Erosion, Sediment and Stormwater Impacts: Protection and Enhancement of Aquatic Resources in the 21st Century, September 15-18, 1998. Newark, DE. Sponsored by Delaware DNREC.

Booth, D.B. 1990. "Stream Channel Incision Following Drainage Basin Urbanization." *Water Resources Bulletin.* Volume 26, No. 3, pp 407-417.

Brown, W. and T. Schueler. 1997a. *National Pollutant Removal Performance Database of Current Urban Stormwater Best Management Practices*. Center for Watershed Protection. Ellicott City, MD.

Brown, W. and T. Schueler. 1997b. *The Economics of Storm Water BMPs in the Mid-Atlantic Region*. Center for Watershed Protection. Ellicott City, MD.

Cahill, T. 1994. "A Second Look at Porous Pavement/Underground Recharge." *Watershed Protection Techniques*. Vol.1, No. 2.

California State Water Resources Control Board (SWRCB). 1963. *Water Quality Criteria*. Second Edition. Publication No. 3-A., pp. 284-285.

Caraco, D. and R. Claytor. 1997. *Design Supplement for Storm Water BMPs in Cold Climates*. Center for Watershed Protection. Ellicott City, MD.

Carr, D.W. and M.J. Kehoe. 1997. *Outfall Water Quality from Wet Detention Systems*. Southwest Florida Water Management District. Brooksville, FL.

Carson, R.T. and R.C. Mitchell. 1993. "The Value of Clean Water: The Public's Willingness to Pay for Boatable, Fishable, and Swimmable Water Quality." *Water Resources Research*. Vol. 29, No. 7, pp. 2445-2453.

Center for Watershed Protection. 1996. Environmental Indicators to Assess the Effectiveness of Municipal and Industrial Stormwater Control Programs. Ellicott City, MD.

Center for Watershed Protection. 1998. *Better Site Design: A Handbook for Changing Development Rules in Your Community.* Ellicott City, MD.

Civil Engineering Research Foundation (CERF). 1998. "Stormwater Best Management Practices (BMP) Verification Program." Fact sheet updated December 1998. Environmental Technology Evaluation Center (EvTEC) website. http://www.cenet.org/evtec/eval/wsdot.htm

Claytor, R. 1996. "Public Survey Used to Estimate Pollutant Loads in Maryland." *Watershed Protection Techniques*. Vol. 2, No. 2, pp. 361-363.

Claytor, R. and T. Schueler. 1996. *Design of Stormwater Filtering Systems*. Prepared for the Chesapeake Research Consortium. Center for Watershed Protection. Ellicott City, MD.

Coffman, L., M. Clar, N. Weinstein. 1998. Overview: Low Impact Development for Stormwater Management. Unpublished.

Corish, K.A. 1995. *Clearing and Grading Strategies for Urban Watersheds*. Metropolitan Washington Council of Governments. Washington, DC.

Couch, C., E. Hopkins and P, Hardy. 1996. *Influence of Environmental Settings on Aquatic Ecosystems in the Apalachicola-Chattahoochee-Flint River Basin.* U. S. Geological Survey. Water Resources Investigations Report 95-4278.

Crawford, J.K. and D.R. Lenant. 1989. *Effects of Land Use on the Water Quality and Biota of Three Streams in the Piedmont Province of North Carolina*. U.S. Geological Survey. Water Resources Investigations Report 89-407. Raleigh, NC.

Delaware Department of Natural Resources and Environmental Control (DNREC). 1997. *Conservation Design for Storm Water Management*. A Joint Effort Between DNREC and the Brandywine Conservancy. Dover, DE. Driver, N.E., M.H. Mustard, R.B. Rhinesmith and R.F. Middelburg. 1985. U. S. Geological Survey Urban Stormwater Data Base for 22 Metropolitan Areas Throughout the United States. USGS Open File Report 85-337. Lakewood, CO.

Emmerling-Dinovo, C. 1995. "Storm Water Detention Basins and Residential Locational Decisions." *Water Resources Bulletin.* Vol. 31, No. 3, pp. 515-521.

Ferguson, B. K. 1990. "Urban Stormwater Infiltration: Purposes, Implementation, Results." *Journal of Soil and Water Conservation*. Vol. 45, No. 6.

Ferguson, B., and T.N. Debo. 1990. On-Site Stormwater Management: Applications for Landscape and Engineering. Van Nostrand Reinhold. New York, NY.

Ferguson, T., R. Gignac, M. Stoffan, A. Ibrahim and J. Aldrich. 1997. *Rouge River National Wet Weather Demonstration Project: Cost Estimating Guidelines, Best Management Practices and Engineered Controls.* Wayne County, MI.

Field, R. M.L. O'Shea and K.K. Chin. 1993. "The Detection and Disinfection of Pathogens in Storm-Generated Flows." *Integrated Stormwater Management*. Lewis Publishers.

Finley, S. 1996. "Sweeping Works." *Pavement Maintenance and Reconstruction*. October/November, pp. 16-17.

Florida Concrete and Products Association. 1989. *Portland Cement Pervious Pavement Manual*. Publication No. 605. Orlando, FL.

Frank, J. 1989. *The Costs of Alternative Development Patterns: A Review of the Literature*. Urban Land Institute. Washington, DC.

Galli, J. 1988. *A Limnological Study of an Urban Stormwater Management Pond and Stream Ecosystem*. Master's Thesis. George Mason University.

Galli, J. 1990a. "Thermal Impacts Associated with Urbanization and Stormwater Management Best Management Practices." Appendix C. *Water Temperature and Freshwater Stream Biota: An Overview.* Metropolitan Washington Council of Governments. Washington, DC.

Galli, J. 1990b. *Peat-Sand Filters: A Proposed Stormwater Management Practice for Urbanized Areas*. Metropolitan Washington Council of Governments. Prepared for the Coordinated Anacostia Retrofit Program. Washington, DC.

Greb, S.R. and R.T. Bannerman. 1997. "Influence of Particle Size on Wet Pond Effectiveness." *Water Environment Research*. Vol. 69, No. 6.

Horner, R.R., J.S. Richey and D.P. Lettenmaier. 1985. *Source Control of Transit Base Runoff Pollutants*. Prepared for Municipality of Metropolitan Seattle. University of Washington. Seattle, WA.

Horner, R.R., J.J. Skupien, E. H. Livingston, and E. H. Shaver. 1994. *Fundamentals of Urban Runoff Management: Technical and Institutional Issues*. Terrene Institute and U.S. Environmental Protection Agency. Washington DC.

Horner, R.R., D.B. Booth, A. Azous and C. W. May. 1997. "Watershed Determinants of Ecosystem Functioning." *Effects of Watershed Development and Management on Aquatic Ecosystems*. Proceedings of an Engineering Foundation Conference. L. A. Roesner, ed. American Society of Civil Engineers. New York, NY.

HydroQual. 1995. *City-Wide Floatables Study*. Prepared for the New York City Department of Environmental Protection. Mahwah, NJ.

Jones, R.C., A. Via-Norton and D.R. Morgan. 1997. "Bioassessment of BMP Effectiveness in Mitigating Stormwater Impacts on Aquatic Biota. *Effects of Watershed Development and Management on Aquatic Ecosystems*. Proceedings of an Engineering Foundation Conference. L.A. Roesner, ed.

Karr and Chu. 1998. Restoring Life in Running Waters: Better Biological Monitoring

Kohlhepp, G.W. and R.A. Hellenthal. 1992. "The Effects of Sediment Deposition on Insect Populations and Production in a Northern Indiana Stream." Proceedings of 1991 Midwest Pollution Control Biologists Meeting. T. P. Simon and W. S. Davis, eds. *Environmental Indicators: Measurement and Assessment Endpoints*. EPA 905-R-92-003. Washington, DC.

Krabbenhoft, D.P. and D.A. Rickert. 1995. *Mercury Contamination of Aquatic Ecosystems*. U.S. Geological Survey Fact Sheet No. FS-216-95. Madison, WI.

Krug, W.R. and G.L. Goddard. 1986. *Effects or Urbanization on Streamflow, Sediment Loads, and Channel Morphology in Pheasant Branch Basin Near Middleton, Wisconsin.* U.S. Geological Survey Report No. 85-4068. Denver, CO.

Lake Barcroft Watershed Improvement District. 1998. "Stormwater Flow Regulation." *Watershed and Lake BMP s: Best Management Practices Appropriate for Established Urban Communities*. Falls Church, VA.

Limburg, K.E. and R.E. Schmidt. 1990. "Patterns of Fish Spawning in Hudson River Tributaries: Response to an Urban Gradient?" *Ecology*. Vol. 71. No. 4.

Livingston, E., E. Shaver, J. Skupien and R. Horner. 1997. *Operation, Maintenance and Management of Storm Water Management Systems*. Watershed Management Institute. Ingleside, MD.

Livingston, E.H., M.P. Wanielista and J.N. Bradner. 1998. *Stormwater Reuse: An Added Benefit of Wet Ponds*. Presented at the Regional Conference on Minimizing Erosion, Sediment and Stormwater Impacts: Protection and Enhancement of Aquatic Resources in the 21st Century. September 15-18, 1998, Newark, DE. Sponsored by Delaware DNREC.

Lundgren, T.J. 1996. "Multi-Chamber Treatment Train Developed for Stormwater Hot Spots." *Watershed Protection Techniques*. Vol. 2, No. 3, pp. 445-449.

MacRae, C.R. 1993. An Alternative Design Approach for the Control of Stream Erosion Potential in Urbanizing Watersheds. Sixth International Conference on Urban Storm Drainage. September. 12-17. Niagara Falls, Ontario.

MacRae, C.R. 1997. "Experience from Morphological Research on Canadian Stream: Is Control of the Two Year Frequency Runoff Event the Best Basis for Stream Channel Protection?" *Effects of Watershed Development and Management on Aquatic Ecosystems*. Proceedings of an Engineering Foundation Conference. L. A. Roesner, ed. American Society of Civil Engineers. New York, NY.

Malina, J. F. 1996. "Chapter 8: Water Quality." *Water Resources Handbook.* L. W. Mays, ed. McGraw-Hill. New York, NY.

Martin, E. H. and J. L. Smoot. 1986. *Constituent-Load Changes in Urban Stormwater Runoff Routed Through a Detention Pond Wetlands System in Central Florida*. U.S. Geological Survey Water Resources Investigation Report 85-4310. Denver, CO.

Maryland Department of the Environment (MDE). 1998. *Maryland Stormwater Design Manual, Volumes I and II*. September 1998 Review Draft. Prepared by the Center for Watershed Protection. Baltimore, MD.

Masterson, J. P., and R.T. Bannerman. 1994. *Impacts of Stormwater on Urban Streams in Milwaukee County, Wisconsin*. National Symposium on Water Quality, Nov. 1994.

Maxted, J. and E. Shaver. 1997. "The Use of Retention Basins to Mitigate Stormwater Impacts on Aquatic Life." *Effects of Water Development and Management on Aquatic Ecosystems*. L. A. Roesner, ed. American Society of Civil Engineers. New York, NY.

May, C.W., R.R. Horner, J.R. Karr, B.W. Mar and E.B. Welch. 1997. "Effects of Urbanization on Small Streams in the Puget Sound Lowland Ecoregion." *Watershed Protection Techniques*. Vol. 2, No. 4, pp. 483-494.

McClean, J. 1995. "Mosquitos in Constructed Wetlands-A Management Bugaboo?" *Watershed Protection Techniques*. Vol. 1, No. 4, pp. 203-207.

McCuen, R.H. and G.E. Moglen. 1988. "Multicriterion Stormwater Management Methods." *Journal of Water Resources Planning & Management*. Vol. 114, No. 4, pp. 414-431.

Minnesota Pollution Control Agency (MPCA). 1989. Protecting Water Quality in Urban Areas: Best Management Practices for Minnesota. St. Paul, MN.

Noel, D.C., M.L. Terstriep and C.A. Chenoweth. 1987. *Nationwide Urban Runoff Program: Data Report, Winston-Salem, North Carolina.* Prepared by Illinois State Water Survey for US EPA, Urban Nonpoint Sources Section. SWS Contract Report 410-3. Champaign, IL.

Northern Virginia Planning District Commission (NVPDC). 1992. Northern Virginia BMP Handbook: A Guide to Planning and Designing Best Management Practices in Northern Virginia. Annandale, VA.

NVPDC. 1996a. Northern Virginia BMP Handbook Addendum: Sand Filtration Systems. Annandale, VA.

NVPDC. 1996b. Nonstructural Urban BMP Handbook: A Guide to Nonpoint Source Pollution Prevention and Control through Nonstructural Measures. Annandale, VA.

Novotny, V. and H. Olem. 1994. *Water Quality: Prevention, Identification and Management of Diffuse Pollution*. Van Nostrand Reinhold. New York, NY.

Oberts, G. 1994. "Performance of Storm Water Ponds and Wetlands in Winter." *Watershed Protection Techniques*. Vol. 1, No. 2, pp. 64-67.

Paterson, R.G., M.I. Luger, R.J. Burby, E.J. Kaiser, H.R. Malcomb, and A.C. Beard. 1993. "Costs and Benefits of Urban Erosion and Sediment Control: The North Carolina Experience." *Environmental Management*. Vol. 17, No. 2, pp. 167-178.

Pelley, J. 1997. "The Economics of Urban Sprawl." *Watershed Protection Techniques*. Vol. 2, No. 4, pp. 461-468.

Pitt, R.E. 1995. "Effects of Urban Runoff on Aquatic Biota." *Handbook of Ecotoxicology*. D.J. Hoffman, B.A. Rattner, G.A. Burton and J. Cairns, eds. CRC Press.

Pitt, R., R. Field, M. Lalor, and M. Brown. 1995. "Urban Stormwater Toxic Pollutants: Assessment, Sources, and Treatability." *Water Environment Research*. Vol. 67, No. 3.

Prince George's County, Maryland. 1993. *Design Manual for Use of Bioretention in Stormwater Management*. Prepared by ETA, Inc. and Biohabitats, Inc. for Prince George's County Department of Environmental Resources. Landover, MD.

RS Means. 1997a. *Building Construction Cost Data, 56th Edition, 1998.* R. S. Means Company, Inc. Kingston, MA

RS Means. 1997b. *Site Work and Landscape Cost Data, 17th Edition, 1998.* R.S. Means Company, Inc. Kingston, MA.

Rushton, B.T. and C.W. Dye. 1993. *An In-Depth Analysis of a Wet Detention Stormwater System*. Southwest Florida Water Management District. Brooksville, FL.

Santa Monica Bay Restoration Project (SMBRP). 1990. An Assessment of Inputs of Fecal Indicator Organisms and Human Enteric Viruses From Two Santa Monica Storm Drains. Technical Report. M. Gold, M. Bartlett, J. Dorsey, C. McGee. Monterey Park, CA.

SMBRP. 1992. *Pathogens and Indicators in Storm Drains Within the Santa Monica Bay Watershed.* M. Gold, M. Bartlett, C. McGee, G. Deets. Monterey Park, CA.

SMBRP. 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. R. Haile, J. Alamillo, K. Barrett, R. Cressey, J. Dermond, C. Ervin, A. Glasser, N. Harawa, P. Harmon, J. Harper, C. McGee, R. Millikan, M. Nides, J. White. Monterey Park, CA.

Satterfield, C. 1996. Enviro Whirl 1 PM-10 Efficiency Study: Removing Reentrained Road Dust. Lake, CA.

Saunders, G. and M. Gilroy. 1997. *Treatment of Nonpoint Source Pollution With Wetland/Aquatic Ecosystem Best Management Practices*. Lower Colorado River Authority. Austin, TX.

Schueler, T. 1987. *Controlling Urban Runoff: A Practical Manual For Planning and Designing Urban BMPs.* Metropolitan Washington Council of Governments. Washington, DC.

Schueler, T., P. Kumble and M. Heraty. 1992. *A Current Assessment of Urban Best Management Practices: Techniques for Reducing Non-Point Source Pollution in the Coastal Zone.* Technical Guidance to Implement Section 6217(g) of the Coastal Zone Management Act. Prepared for US EPA. Metropolitan Washington Council of Governments. Washington, D.C.

Schueler, T. 1994a. "Developments in Sand Filter Technology to Improve Storm Water Runoff Quality." *Watershed Protection Techniques*. Vol. 1, No. 2, pp. 47-54.

Schueler, T. 1994b. "Water Reuse Ponds Developed in Florida." *Watershed Protection Techniques*. Vol. 1, No. 2, pg. 72.

Schueler, T. and R. Claytor. 1995. "Impervious Cover as an Urban Stream Indicator and a Watershed Management Tool." *Effects of Water Development and Management on Aquatic Ecosystems*. L.A. Roesner, ed. American Society of Civil Engineers. New York, NY.

Schueler, T. 1997. "Comparative Removal Capability of Urban BMPs: A Reanalysis." *Watershed Protection Techniques*. Vol. 1, No. 2, pp. 515-520.

Shaver, E. and R. Baldwin. 1991. *Sand Filter Design for Water Quality Treatment*. Delaware Department of Natural Resources and Environmental Control. Dover, DE.

Shepp, D.L. 1996. *Petroleum Hydrocarbon Concentrations Observed in Runoff form Discrete, Urbanized Automotive-Intensive Land Uses.* Metropolitan Washington Council of Governments. Washington, DC.

Smith, J., S. Paul, C. Collins, A. Cavacas and M. Lahlou. 1994. "Public Survey and Pollutant Model for Prince George's County." *Proceedings from Watershed 93: A National Conference on Watershed Management*. U.S. Environmental Protection Agency. EPA 840-R-94-002. Washington, DC.

Southeastern Wisconsin Regional Planning Commission (SWRPC). 1991. Costs of Urban Nonpoint Source Water Pollution Control Measures. Waukesha, WI.

Strecker, E.W., J. M. Kersnar, E.D. Driscoll and R.R. Horner. 1992. *The Use of Wetlands for Controlling Stormwater Pollution*. Terrene Institute. Washington, DC. Reprinted by US EPA as EPA 904-R-92-012, April 1992.

Strecker, E.W. 1995. "Constituents and Methods for Assessing BMPs." *Stormwater NPDES Related Monitoring Needs*. Proceedings of an Engineering Foundation Conference. August 7-12, 1994. Mount Crested Butte, CO. Harry C. Torno, ed. American Society of Civil Engineers. New York.

Strecker, E.W. 1998. *Considerations and Approaches for Monitoring the Effectiveness of Urban BMPs*. Presented at the National Conference on Retrofit Opportunity for Water Resources Protection in Urban Environments. February 9-12, 1998, Chicago, IL. Published by US EPA as EPA/625/R-99/002, July 1999.

Strecker, E.W. and M. Quigley. 1998. *Technical Memorandum - Task 2.2. Summarizing Results of Preliminary Review of Documents*. Prepared for the ASCE National Stormwater BMP Database Project. Unpublished. April 10, 1998. (Available on the ASCE website, http://www.asce.org/peta/tech/nsbd01.html)

Terrene Institute. 1990. Urban Targeting and BMP Selection. Washington, DC.

Terrene Institute. 1996. A Watershed Approach to Urban Runoff: Handbook for Decisionmakers. Terrene Institute and US EPA. Washington, DC.

Torno, H.C., ed. 1995. *Stormwater NPDES Related Monitoring Needs*. Proceedings of an Engineering Foundation Conference. August 7-12, 1994, Mount Crested Butte, CO. American Society of Civil Engineers. New York, NY.

Urban Drainage and Flood Control District (UDFCD). 1992. Urban Storm Drainage Criteria Manual, Volume 3 - Best Management Practices. Urban Drainage and Flood Control District. Denver, CO.

Urbonas, B. and E.W. Strecker. 1996. *Parameters to Report - Final Lists and Suggested Data Base Structure*. Prepared for the ASCE National Stormwater BMP Database project. Unpublished. September 13, 1996. (Available on the ASCE website, http://www.asce.org/peta/tech/nsbd01.html)

Urbonas, B.R, J.T. Doerfer and L.S. Tucker. 1997. *Field Evaluation of a Stormwater Sand Filter*. Urban Drainage and Flood Control District. Denver, CO. (Available on the UDFCD website, http://www.udfcd.org)

Urbonas, B. 1999. "Design of a Sand Filter for Water Quality Enhancement." *Water Environment Research*. Vol. 71, No. 1, pp. 102-113.

US Army Corps of Engineers (USACE). 1998. *Analysis of BMPs for Small Construction Sites*. Prepared for EPA Office of Wastewater Management.

US Department of Agriculture, Natural Resources Conservation Service (USDA/NRCS). 1986. *Urban Hydrology for Small Watersheds*. Technical Release 55 (TR-55). Washington, DC.

US Environmental Protection Agency (US EPA). 1976. *Quality Criteria for Water*. Washington, DC. Pp. 218-231.

US EPA. 1983. *Results of the Nationwide Urban Runoff Program: Volume 1 - Final Report.* Water Planning Division. Washington, DC. NTIS Publication No. 83-185552. (Note: An Executive Summary may be obtained from EPA, Publication No. EPA-841-S-83-109.)

US EPA. 1983a. A Comparison of Alternative Approaches for Estimating Recreation and Related Benefits of Water Quality Improvement. EPA-230-05-83-001. Washington, DC.

US EPA. 1988. *Water Quality Standards Criteria Summaries: A Compilation of State/Federal Criteria; Temperature.* EPA 440/5-88/023.

US EPA. 1990. "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges." (Phase I Final Rule.) *Federal Register*. 55 FR 47990, November 16, 1990.

US EPA. 1992a. Acid Rain Program: Overview. EPA 430-F-92-019. Washington, DC.

US EPA. 1992b. *Acid Rain Program: Environmental Benefits*. EPA 430-F-92-015. Washington, DC.

US EPA. 1992c. *NPDES Storm Water Sampling Guidance Document*. EPA 833-B-92-001. Washington, DC.

US EPA. 1992d. Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices. EPA 832-R-92-005. Washington, DC.

US EPA. 1992e. Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices. EPA 832-R-92-006. Washington, DC.

US EPA. 1993a. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. EPA 840-B-92-002. Washington, DC.

US EPA. 1993b. Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems - A User s Guide. EPA 600-R-92-238. Washington, DC.

US EPA. 1993c. *Handbook Urban Runoff Pollution Prevention and Control Planning*. EPA 625-R-93-004. Washington, DC.

US EPA. 1993d. *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance*. EPA 841-B-93-003. Washington, DC.

US EPA. 1994a. *Storm Water Utilities: Innovative Financing for Storm Water Management: Final Report*. Office of Policy, Planning and Evaluation. Washington, DC.

US EPA. 1994b. A State and Local Government Guide to Environmental Program Funding Alternatives. EPA 841-K-94-001. Washington, DC.

US EPA. 1995a. *National Water Quality Inventory: 1994 Report to Congress*. EPA 841-R-95-005. Washington, DC.

US EPA. 1995b. Storm Water Discharges Potentially Addressed by Phase II of the National Pollutant Discharge Elimination System Storm Water Program: Report To Congress. EPA 833-K-94-002. Washington, DC.

US EPA. 1995c. *Economic Benefits of Runoff Controls*. EPA 841-S-95-002. Washington, DC.

US EPA. 1996a. *Protecting Natural Wetlands: A Guide to Stormwater Best Management Practices.* EPA-843-B-96-001. Washington, DC.

US EPA. 1996b. *Green Development: Literature Summary and Benefits Associated with Alternative Development Practices*. EPA-841-B-97-001. Washington, DC.

US EPA. 1996c. *Biological Criteria: Technical Guidance for Streams and Small Rivers.* Revised Edition. EPA 822-B-96-001. Washington, DC.

US EPA. 1996e. *Municipal Wastewater Management Fact Sheets: Storm Water Best Management Practices*. EPA 832-F-96-001. Washington, DC.

US EPA. 1997a. Urbanization and Streams: Studies of Hydrologic Impacts. EPA 841-R-97-009. Washington, DC.

US EPA. 1997b. *Pesticide Industry Sales and Usage: 1994 and 1995 Market Estimates*. EPA 733-R-97-002. Washington, DC.

US EPA. 1997c. *Monitoring Guidance for Determining the Effectiveness of Nonpoint Source Controls*. EPA 841-B-96-004. Washington, DC.

US EPA. 1997d. *Economic Analysis of the Storm Water Phase II Proposed Rule: Final Draft.* Office of Wastewater Management. Washington, DC.

US EPA. 1997e. *Potential Value of U.S. Waters Impaired by Urban Wet Weather Discharges*. Working Draft. Office of Wastewater Management. Washington, DC.

US EPA. 1997f. Rapid Bioassessment Protocols for Use in Streams and Rivers: Periphyton, Benthic, Macroinvertebrates, and Fish. Revision. EPA 841-D-97-002. Washington, DC.

US EPA. 1998a. *Listing of Fish and Wildlife Advisories - 1997*. EPA 823-C-98-001. Washington, DC.

US EPA. 1998b. *Phase I Storm Water Modeling Technical Report*. Office of Wastewater Management. Washington, DC.

US EPA. 1998c. "National Pollutant Discharge Elimination System--Proposed Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges." (Phase II Proposed Rule.) *Federal Register*. 63 FR 1536, January 8, 1998.

US EPA. 1998d. *National Water Quality Inventory: 1996 Report to Congress*. EPA 841-R-97-008. Washington, DC.

US EPA. 1998e. *Case Studies of the Benefits of Controlling Urban Wet Weather Flows*. Office of Wastewater Management. Washington, DC.

Walker, W.W. 1987. Phosphorus Removal by Urban Runoff Detention Basins. *Lake and Reservoir Management: Volume III.*

Washington Department of Ecology (DOE). 1997. *NPDES Implementation Data for Seattle, Washington*.

Water Environment Federation (WEF) and American Society of Civil Engineers (ASCE). 1992. *Design and Construction of Urban Storm Water Management Systems*. WEF Manual of Practice No. FD-20. ASCE Manuals and Reports of Engineering Practice No. 77. Alexandria, VA and New York, NY.

WEF and ASCE. 1998. *Urban Runoff Quality Management*. WEF Manual of Practice No. 23. ASCE Manual and Report on Engineering Practice No. 87. Alexandria, VA and Reston, VA.

Weaver, L.A. and G.C. Garman. 1994. "Urbanization of a Watershed and Historical Change in a Stream Fish Assemblage." *Transactions of the American Fisheries Society*. Vol. 123, pp. 162-172.

Wiegand, C., T. Schueler, W. Chittenden and D. Jellick. 1986. "Cost of Urban Runoff Controls." *Urban Runoff Quality Impact and Quality Enhancement Technology*. Proceedings of an Engineering Foundation Conference, June 23-27, 1986, Henniker, NH. B. Urbonas and L.A. Roesner, ed. American Society of Civil Engineers. New York, NY.

Wischmeier, W., and D. Smith. 1978. *Predicting Rainfall Erosion Losses - A Guide to Conservation Planning*. Agriculture Handbook 537. US Department of Agriculture. Washington, DC.

Index

adsorption, 5.5, 5.6, 5.9, 5.16, 5.23, 5.25, 5.55, 5.67 antimony, 4.17 arsenic, 4.17 ASCE (American Society of Civil Engineers), 1.1, 2.3, 2.4, 5.7, 5.42, 5.43, 5.47-5.50, 5.53, 5.56 automotive product, 2.2, 5.30 bacteria, 4.1, 4.2, 4.7, 4.9, 4.14, 4.35, 4.44, 4.47, 5.6, 5.12, 5.32, 5.33, 5.50-5.52, 5.57, 5.68, 5.75, 5.82, 5.83, 6.30 basin, 2.2, 4.4, 5.8-5.10, 5.12-5.14, 5.17, 5.19, 5.33, 5.38, 5.50, 5.56, 5.57, 5.60, 5.69, 5.76, 5.77, 6.3, 6.4, 6.6-6.9, 6.11, 6.14, 6.18, 6.20, 6.37, 6.38 benefits, 1.1-1.3, 5.8, 5.9, 5.56, 5.84, 6.1, 6.28, 6.29, 6.32, 6.35-6.38, 6.41, 6.42, 6.44 beryllium, 4.17 biological monitoring, 1.2, 5.46 bioretention, 2.2, 5.3, 5.23-5.26, 5.37, 5.51, 5.74, 5.76, 5.77, 5.83, 5.84, 6.1, 6.3, 6.4, 6.12, 6.14, 6.15, 6.17-6.19 BMP (best management practices), 1.1-1.3, 2.2-2.4, 3.5, 5.1, 5.4, 5.5, 5.7-5.9, 5.11, 5.17, 5.31, 5.36-5.39, 5.41-5.54, 5.56, 5.58, 5.59, 5.82, 5.84, 5.85, 6.1-6.5, 6.7, 6.9, 6.13-6.21, 6.28, 6.35-6.37, 6.40, 6.41 BOD (biochemical oxygen demand), 2.1, 4.7, 4.8, 4.10, 4.12, 4.35, 5.32, 5.50 cadmium, 4.17, 4.18, 5.52, 5.57, 5.68, 5.75, 5.82 capital costs, 5.2, 6.2, 6.4, 6.7, 6.9, 6.13, 6.18, 6.20, 6.21, 6.25-6.27 catch basin, 2.2, 4.4, 5.8, 5.33, 5.50 channel erosion, 4.2, 4.9, 4.30, 6.32, 6.34-6.36 chemical pollutant monitoring, 1.2 chlordane, 4.17 chromium, 4.17, 5.57, 5.68, 5.72, 5.73, 5.75, 5.80-5.82 chrysene, 4.17, 4.19 Clean Water Act, 1.1, 2.1, 3.1 Coastal Zone, 1.3, 3.3 COD (chemical oxygen demand, 4.7, 4.8, 4.10-4.12) cold climates, 5.42, 5.58 combined sewer, 2.2, 4.4, 4.5 construction activity, 3.2, 5.36 construction cost, 6.3, 6.5, 6.6, 6.8, 6.11-6.13, 6.15, 6.16 construction site, 3.2, 5.18, 5.55, 6.38, 6.40-6.42 contamination, 1.2, 4.2, 4.13, 4.35, 4.44, 4.45, 4.48, 5.9, 5.12, 6.37 copper, 4.7, 4.8, 4.11, 4.16-4.18, 5.35, 5.52, 5.57, 5.68, 5.72, 5.73, 5.75, 5.80-5.82, 6.41 costs, 1.1, 1.3, 2.2, 5.2, 5.17, 5.54, 6.1-6.9, 6.11-6.16, 6.18-6.28, 6.37-6.40, 6.42, 6.44 Crestwood Marsh Constructed Wetland, 5.69, 5.71, 5.72 cyanide, 5.36 cyclohexane, 4.17 database, 2.3, 4.6, 5.7, 5.43, 5.47, 5.53, 6.40

- degradation, 4.1, 4.2, 4.5, 4.24, 4.32, 5.4, 5.6, 5.14-5.16, 5.25, 5.40, 5.56, 5.76, 5.83-5.85, 6.21, 6.32, 6.35, 6.36
- detention, 2.2, 4.37, 5.1, 5.3, 5.5, 5.7, 5.8, 5.11-5.14, 5.18, 5.28, 5.38, 5.51, 5.54, 5.59, 5.69, 5.70, 5.74, 5.76, 5.83, 5.84, 6.1-6.3, 6.6, 6.7, 6.15-6.17, 6.19, 6.34-6.38
- dichloromethane, 4.17
- dissolved oxygen, 4.12, 4.13, 4.35, 5.43, 5.45, 5.59
- domestic wastewater, 4.10, 4.11
- education, 5.1, 5.7, 5.30, 5.32, 5.33, 5.48, 5.49, 6.21-6.25, 6.29-6.31, 6.38, 6.43
- effectiveness, 1.1, 1.2, 4.6, 5.33, 5.42-5.50, 5.59, 5.83-5.85, 6.24, 6.28, 6.36, 6.41, 6.42
- efficiency, 1.2, 1.3, 2.3, 5.1, 5.4, 5.5, 5.9, 5.13, 5.14, 5.36, 5.42, 5.45, 5.46, 5.48, 5.50,
 - 5.52-5.58, 5.67-5.69, 5.74-5.76, 5.82, 5.83, 5.85
- efficiency ratio, 5.45
- effluent guidelines, 1.1, 2.1, 3.2
- EMC (event mean concentration), 5.45, 5.52
- endosulfan, 4.17
- EPA (Environmental Protection Agency), 1.1-1.1, 1.3, 2.1, 2.3, 2.4, 3.1-3.4, 4.1, 4.6, 4.8, 4.12, 4.14, 4.16-4.18, 4.20, 4.22-4.26, 4.30, 4.32, 4.35, 4.36, 4.47, 4.48, 5.2, 5.9, 5.31, 5.33, 5.42, 5.44, 5.46-5.48, 5.53, 5.54, 5.60, 5.69, 5.70, 5.77, 5.84, 6.5, 6.6, 6.18, 6.20, 6.27, 6.28, 6.37-6.43
- erosion, 1.2, 3.2, 4.1, 4.2, 4.9, 4.11, 4.24, 4.26, 4.29, 4.30, 4.33, 4.35, 5.11, 5.25, 5.35, 5.36, 5.39, 5.41, 5.55, 5.77, 6.1, 6.2, 6.6, 6.13, 6.29, 6.30, 6.32, 6.34-6.36, 6.38, 6.42
- erosion control, 6.34
- ETV (Environmental Technology Verification) program, 5.29
- event mean concentration, 3.1, 4.18, 4.19, 5.45
- Federal Highway Administration (FHWA), 4.6, 5.47, 5.48
- filter, 2.2, 2.4, 4.40, 4.47, 5.2, 5.3, 5.5, 5.8, 5.17-5.23, 5.25-5.27, 5.36-5.40, 5.51, 5.54, 5.56, 5.74-5.83, 6.1, 6.3, 6.4, 6.11-6.15, 6.17-6.20
- filtration, 2.2, 5.5, 5.8, 5.9, 5.12, 5.14, 5.16-5.19, 5.21-5.23, 5.25, 5.28, 5.29, 5.36, 5.37, 5.51, 5.67, 5.69, 5.74-5.77, 5.83
- financial issues, 6.42
- fishing, 1.2, 4.2, 4.6, 4.48
- floatable, 4.44, 4.48, 5.5
- flood control, 1.i, 4.5, 5.70, 6.1, 6.18, 6.34
- flooding, 1.1, 1.2, 4.2, 4.5, 4.24, 4.26-4.28, 4.32, 5.3, 5.4, 5.9, 5.13, 5.14, 5.58, 5.84, 6.36, 6.37 flotation, 5.5
- flow control, 5.1, 5.2, 5.83, 5.84
- flow monitoring, 5.43, 5.78
- flow rate, 4.23, 4.28, 5.13, 5.42, 5.44, 5.83, 5.84
- fluoranthene, 4.17
- good housekeeping, 2.2, 5.30, 5.31, 6.38
- grass filter, 2.2, 5.26, 5.27, 5.82, 5.83
- ground water, 4.18-4.20, 4.26, 4.31, 5.9

- habitat, 1.2, 4.1-4.3, 4.11, 4.24, 4.26, 4.30, 4.32-4.35, 4.37, 5.13, 5.14, 5.43, 5.46, 5.50, 5.78, 5.79, 5.85, 6.32, 6.37
- hazardous material, 2.2, 5.32
- herbicide, 5.31
- Hollywood Branch Peat/Sand Filter, 5.77, 5.78, 5.80, 5.81
- human health, 4.14, 6.37, 6.42
- hydraulic performance, 5.42, 5.75
- hydrocarbons, 4.1, 4.9, 4.15, 4.16, 4.35, 5.4, 5.5, 5.30, 5.51, 5.52, 5.55, 5.67, 6.29, 6.31
- hydrograph, 4.28, 6.31
- illicit connection, 6.21, 6.22
- illicit discharge, 2.2, 5.33, 6.38
- impervious surface, 5.28, 5.84, 6.21, 6.43
- infiltration, 2.2, 4.4, 4.5, 4.24, 4.31, 4.45, 5.1-5.12, 5.14, 5.15, 5.26, 5.28, 5.29, 5.36, 5.38-5.40, 5.51, 5.54-5.56, 5.77, 5.83, 5.84, 6.1, 6.3, 6.4, 6.8-6.11, 6.14, 6.15, 6.18, 6.19, 6.22, 6.31, 6.38
- lawn debris, 2.2, 5.6, 5.32, 5.48, 5.49
- lead, 4.7, 4.8, 4.11, 4.16-4.18, 5.36, 5.51, 5.52, 5.55, 5.57, 5.68, 5.72, 5.73, 5.75, 5.80-5.82, 6.37, 6.41
- lindane, 4.17
- macroinvertebrate, 1.2, 4.39, 4.40, 5.43, 5.46, 5.85, 6.32, 6.35
- maintenance, 2.1, 2.2, 3.2, 4.9, 4.40, 5.4, 5.7, 5.9, 5.10, 5.15-5.17, 5.30, 5.32, 5.33, 5.35-5.39, 5.41, 5.49, 5.50, 5.56, 5.59, 5.60, 5.75, 5.76, 6.1, 6.14, 6.15, 6.18, 6.20, 6.21,
 - 6.27, 6.38, 6.43, 6.44
- maintenance costs, 6.14, 6.15, 6.18, 6.20, 6.21
- metals, 3.1, 4.1, 4.6, 4.9, 4.10, 4.12, 4.16-4.18, 4.35, 4.38, 5.2-5.6, 5.9, 5.12, 5.14, 5.15, 5.30, 5.50-5.52, 5.54-5.56, 5.58, 5.67, 5.68, 5.76, 5.83, 6.1, 6.29, 6.31, 6.37, 6.41
- monitoring, 1.2, 1.3, 2.3, 2.4, 4.6, 5.31, 5.42-5.54, 5.56, 5.69, 5.71, 5.74, 5.78, 5.82, 5.85, 6.22 municipal separate storm sewer system (MS4), 3.1, 6.27
- municipal financing, 6.43
- nickel, 4.17, 5.59, 5.72, 5.73, 5.80, 5.81
- nitrogen, 4.1, 4.7-4.9, 4.13, 5.22, 5.32, 5.52, 5.54, 5.55, 5.57, 5.62-5.66, 5.68, 5.72, 5.73, 5.75, 5.76, 5.80-5.82, 6.29, 6.30, 6.41
- nitrophenol, 4.17
- NOAA (National Oceanographic and Atmospheric Administration), 3.3, 3.4
- non-structural BMP, 6.21
- NPDES (National Pollutant Discharge Elimination System), 1.3, 2.1-2.3, 3.1, 3.2, 3.4, 4.6, 5.44, 5.47, 5.48, 6.1, 6.6, 6.38
- NURP (Nationwide Urban Runoff Program), 2.3, 4.6-4.8, 4.13, 4.14, 4.16, 4.18, 5.47, 5.49, 5.50, 6.40
- nutrient, 4.12, 4.13, 5.6, 5.22, 5.25, 5.32, 5.39, 5.42, 5.58, 5.59, 5.69, 6.30
- oil and grease, 2.1, 4.9, 4.15, 5.5, 5.19, 5.29, 5.44, 6.1, 6.41
- organic, 4.9, 4.12, 4.13, 4.18, 4.19, 4.38, 5.5, 5.6, 5.8, 5.9, 5.14, 5.15, 5.22, 5.25, 5.44, 5.51, 5.52, 5.55-5.57, 5.62-5.68, 5.72, 5.73, 5.75, 5.76, 5.80-5.82, 6.30, 6.38

oxygen demand, 4.7, 4.12, 4.13, 4.19, 5.62-5.66, 5.72, 5.73, 5.80, 5.81, 6.30

- parking lot, 2.2, 4.10, 5.25, 5.34, 6.36
- pathogens, 4.1, 4.13-4.15, 4.44, 4.45, 5.54, 6.29, 6.30, 6.37, 6.41
- peak flow, 1.1, 4.24, 4.26, 4.28, 5.13, 5.16, 5.84, 6.16, 6.35
- pentachlorophenol, 4.17
- performance, 1.1-1.3, 2.1, 2.3, 2.4, 3.1, 3.4, 3.5, 4.6, 5.1, 5.7, 5.9, 5.11, 5.15-5.17, 5.29, 5.37, 5.41-5.45, 5.47, 5.48, 5.50-5.54, 5.56, 5.59, 5.67-5.69, 5.71, 5.75, 5.76, 5.79, 5.82, 5.84, 5.85, 6.1, 6.2, 6.14, 6.15, 6.18, 6.19
- pesticide, 5.31, 5.32, 5.39, 5.49, 6.22, 6.31
- pet waste, 5.32, 5.33, 5.49, 6.30
- Phase I NPDES stormwater rule, 3.1, 3.2, 4.6, 5.47, 5.48, 6.6, 6.39
- Phase II NPDES stormwater rule, 3.2, 3.3, 6.1, 6.37-6.42
- phenanthrene, 4.17, 4.19
- phenol, 4.17
- phosphorus, 4.1, 4.7-4.9, 4.13, 5.22, 5.32, 5.35, 5.51, 5.52, 5.54, 5.55, 5.57, 5.58, 5.62-5.66, 5.68, 5.72, 5.73, 5.75, 5.76, 5.80-5.82, 6.29, 6.30, 6.41
- phthalate, 4.17
- pollutant removal, 1.2, 1.3, 2.3, 5.1, 5.4, 5.9, 5.14-5.16, 5.28, 5.42, 5.45, 5.46, 5.48, 5.50,
 - 5.52-5.57, 5.67, 5.68, 5.74, 5.75, 5.82, 6.28
- porous pavement, 2.2, 5.2, 5.8, 5.10, 5.11, 5.30, 5.40, 5.54, 5.56, 6.9, 6.14
- Prince William Parkway Regional Wet Pond, 5.60-5.62
- public health, 1.2, 4.1-4.3, 4.13, 4.14, 4.44, 4.47
- pyrene, 4.17, 4.19
- rainfall frequency spectrum, 6.34
- rainfall zone, 6.5, 6.19
- receiving stream assessment, 5.46
- recreation, 1.2, 4.2, 4.12, 4.44, 4.49, 6.37
- recycling, 3.2, 5.30, 5.49, 6.24, 6.27, 6.29
- regression of loads method, 5.45
- retention, 2.2, 5.1, 5.3, 5.7, 5.8, 5.14-5.16, 5.29, 5.38, 5.40, 5.42, 5.51, 5.53, 5.54, 5.56-5.60, 5.74, 5.84, 5.85, 6.1-6.4, 6.6-6.9, 6.14, 6.15, 6.17-6.20, 6.36, 6.37, 6.40, 6.43
- retrofitting, 5.2, 5.3, 5.14
- road salt, 5.36, 6.19
- runoff coefficient, 4.24, 4.25
- samples, 2.3, 4.17, 4.18, 4.35, 4.37, 4.44, 4.45, 5.42, 5.44, 5.51-5.54, 5.59, 5.61, 5.70, 5.71, 5.78
- sand filter, 2.4, 5.18-5.23, 5.75, 5.77, 5.78, 5.80, 5.81, 6.3, 6.4, 6.11, 6.18, 6.20
- scour, 4.1, 4.2, 5.13
- scouring, 1.2, 4.24, 4.32
- sediment, 1.2, 4.2, 4.9, 4.11-4.13, 4.23, 4.24, 4.26, 4.29-4.32, 4.35, 4.37, 4.38, 4.40, 4.41, 5.9-5.11, 5.13-5.15, 5.17, 5.19, 5.25, 5.29, 5.30, 5.33, 5.35-5.39, 5.55, 5.56, 5.58, 5.60, 5.76, 5.78, 5.79, 5.83, 6.2, 6.3, 6.6, 6.13, 6.30, 6.32, 6.35, 6.40, 6.42
- sedimentation, 4.2, 4.11, 4.12, 4.24, 4.32, 4.40, 4.49, 5.4, 5.5, 5.14, 5.16, 5.19, 5.21, 5.28, 5.36, 5.38, 5.56, 5.58, 5.67, 5.76, 5.83

- selenium, 4.17
- separate storm sewer, 2.2, 3.2, 3.4, 4.4, 5.33
- siltation, 4.12, 4.23, 4.26
- silver, 4.18
- site design, 5.2, 5.29, 6.25
- solids, 4.1, 4.6, 4.10-4.12, 4.38, 5.1-5.3, 5.5, 5.12-5.14, 5.17, 5.28, 5.35, 5.36, 5.51, 5.52, 5.54-5.58, 5.60, 5.62-5.66, 5.68, 5.72, 5.73, 5.75, 5.76, 5.80-5.83, 6.29, 6.30
- source control, 3.2, 5.31, 5.49
- source reduction, 5.6
- storm drain, 2.2, 4.4, 4.44, 4.45, 5.2-5.4, 5.20, 5.21, 5.28, 5.29, 5.31, 5.33, 5.34, 5.41, 6.22, 6.27, 6.29, 6.31
- storm sewer, 2.2, 3.2, 3.4, 4.4, 5.7, 5.12, 5.23, 5.26, 5.28, 5.33, 5.42, 5.77
- storm water, 1.1, 1.1-1.3, 2.1-2.3, 3.1-3.4, 4.1-4.6, 4.8-4.20, 4.22-4.24, 4.26, 4.29, 4.31-4.35, 4.39, 4.44, 4.48, 4.49, 5.1-5.17, 5.21-5.23, 5.25, 5.26, 5.28-5.33, 5.36, 5.39, 5.40, 5.42, 5.44-5.50, 5.52-5.56, 5.58, 5.59, 5.67, 5.68, 5.74-5.76, 5.82-5.85, 6.1, 6.4-6.7, 6.14, 6.22, 6.26, 6.28, 6.30-6.32, 6.34-6.44
- street construction, 5.2
- street sweeping, 5.6, 5.48-5.50, 6.21, 6.28-6.31
- structural, 1.2, 2.2, 2.4, 3.2, 4.5, 5.1-5.4, 5.6-5.8, 5.28-5.30, 5.36, 5.38, 5.39, 5.47-5.49, 5.54, 5.84, 5.85, 6.1, 6.5, 6.15, 6.16, 6.21, 6.28, 6.29, 6.31, 6.32, 6.37
- summation of loads method, 5.45
- swale, 5.39, 6.3, 6.4
- tax, 3.4, 6.25, 6.43, 6.44
- temperature, 4.19-4.22, 4.26, 4.35, 4.38, 5.4, 5.29, 5.42, 5.45, 5.58-5.60, 6.29, 6.31
- trench, 5.11, 5.12, 5.26, 5.38, 5.56, 6.3, 6.4, 6.9, 6.10, 6.14, 6.15, 6.18
- TSS (total suspended solids), 4.6, 4.8, 4.10-4.12, 5.5, 5.59, 5.75, 5.76, 6.40, 6.41
- underground vault, 5.18-5.21
- urban runoff, 1.1, 2.3, 4.1-4.3, 4.6, 4.8-4.14, 4.16, 4.17, 4.20, 4.23, 4.35, 4.47, 4.48, 5.4-5.7, 5.32, 5.35, 5.41-5.43, 5.46, 5.47, 6.29-6.31, 6.37, 6.42
- USACE (US Army Corps of Engineers), 6.40
- USDA (US Department of Agriculture), 5.1, 6.16
- USGS (US Geological Survey), 4.6, 5.47, 5.52
- Water Quality Act, 1.1, 2.1, 4.6
- water quality monitoring, 5.43, 5.71
- water quality standards, 3.3, 4.1, 4.18, 4.19, 5.59
- water quantity, 1.2, 4.1-4.3, 5.1, 5.3, 5.7, 5.8, 5.12, 5.14, 5.16, 5.74
- wet pond, 2.4, 5.15, 5.60-5.62, 6.2, 6.37
- wetland, 2.2, 2.4, 4.1, 5.3, 5.7, 5.8, 5.14-5.17, 5.28, 5.29, 5.36, 5.37, 5.40, 5.42, 5.44, 5.51, 5.59, 5.67-5.72, 5.74, 5.77, 6.3, 6.4, 6.14, 6.19
- zinc, 4.7, 4.8, 4.11, 4.16-4.18, 5.35, 5.52, 5.55, 5.57, 5.68, 5.72, 5.73, 5.75, 5.80-5.82, 6.41