



# **SANREM CRSP**

## **Directed Readings**

# **Watershed Management**

*Directed Readings Series no. 03-01*

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*Compiled By:*

**Carlos A. Perez**

**Kris Miller**

**Carla Roncoli**

**SANREM CRSP**

**1422 Experiment Rd.**

**Watkinsville, GA 30677**

**[www.sanrem.uga.edu](http://www.sanrem.uga.edu)**

# **SANREM CRSP**

## **Directed Readings Series**

The intended audience of the Directed Readings Series includes researchers, development practitioners, environmental activists, government officials, and educators who do not have a specialized training in Natural Resource Management but who, nonetheless, are involved in such management and would like to enhance their knowledge on the topic.

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Your comments and suggestions are welcome to aid in improving and refining any updates or supplements to this publication. Send comments to Carlos Perez at

[cperez@uga.edu](mailto:cperez@uga.edu).

## **Watershed Management**

A list of selected recommended readings on Watershed Management issues is included below. The list encompasses mostly electronic documents or other types of resources that can be downloaded or are available from the Web. It includes, as well, books and documents that are commercially available.

### **1) BACKGROUND GENERAL**

- General stream ecology basics Web Page.  
[http://www.uwm.edu/People/ehlinger/stream\\_start.htm](http://www.uwm.edu/People/ehlinger/stream_start.htm)
- Brooks, K. N., P. F. Ffolliott, H. M. Gregersen and L. F. DeBano. (1997). Hydrology and the Management of Watersheds. Second Edition. Iowa State University Press. Ames, Iowa.
- Dixon, J. A. and Easter, K. W. 1986. Watershed Resources Management. Westview Press.
- Doppelt, B. M. Scurlock, C. Frissell and J. Karr. (1993). Entering the Watershed: A New Approach to Save America's River Systems. Island Press
- FAO water program site. <http://www.fao.org/ag/agl/aglw/Wprog.stm>

- Gordon, N. D., T. McMahon and B. Finlayson. (1992). Stream Hydrology, An Introduction for Ecologists. John Wiley and Sons Ltd., London.
- Griffith, G.E., Omernik, J.M., and Woods, A.J. (1999). Ecoregions, watersheds, basins, and HUCs: How state and federal agencies frame water quality. Journal of Soil and Water Conservation 54: 666-677.
- Naiman, R. J. ed. (1992). Watershed Management: Balancing Sustainability and Environmental Change. Springer Verlag, New York.
- Naiman, R. J. and R.E. Bilby (1998). River Ecology and Management. Springer Verlag, New York.
- Reimold, R. J. (1998). Watershed Management Practice, Policies, and Coordination. McGraw Hill.
- Heathcote. - I.W (1998). Integrated Watershed Management. John Wiley and Sons, New York.
- Saha, S. K. and Barrow, C. J. 1981. River Basin Planning: Theory and Practice. John Wiley and Sons, New York.
- Satterlund, D. R. and P. W. Adams. (1992). Wildland Watershed Management. John Wiley and Sons, New York. 436p.
- Susswein, P.M., Van Noordwijk, M., and Verbist, B., 2001. Forest watershed functions and tropical land use change ASB\_LN 7. In: Van Noordwijk, M, Williams, S.E. and Verbist, B. (Eds.) 2001. Towards integrated natural resource management in forest margins of the humid tropics: local action and global concerns. ASB-Lecture Notes 1 – 12. International Centre for Research in Agroforestry (ICRAF), Bogor, Indonesia. Also available from:  
<http://www.worldagroforestrycentre.org/sea/products/training/materials/lecture%20notes/asb-lectnotes/asblecnote%207.pdf>
- US Environmental Protection Agency (EPA). Online Training in Watershed Management (EPA's Watershed Academy).  
<http://www.epa.gov/owow/watershed/wacademy/acad2000/>

## 2) PLANNING AND DEVELOPMENT:

- Brown, E., A. Peterson, R. Line-Robach, et al. (2000) Developing a Watershed Management Plan for Water Quality: An Introductory Guide. Institute of Water Research, Michigan State University. <http://www.deq.state.mi.us/documents/deq-swq-nps-Watershe.pdf> or <http://www.iwr.msu.edu/publications/books/wbook-info.htm>

- Ohio Environmental Protection Agency. (1997). A Guide to Developing Local Watershed Action Plans in Ohio. <http://www.epa.state.oh.us/dsw/nps/wsguide.pdf>
- Noss, R., M. O'Connell and D. Murphy (1997). The Science of Conservation Planning: Habitat Conservation Under the Endangered Species Act. Island Press
- Peck, S. 1998. Planning for Biodiversity. Island Press.
- Riley, A. L. (1998). Restoring Streams in Cities: A Guide for Planners, Policymakers, and Citizens. Island Press.
- River Network. (1996). Starting Up: A Handbook for New River and Watershed Organizations. 400 pgs.
- Sargent, F. O. et. al. 1991. Rural Environmental Planning for Sustainable Communities. Island Press.
- Salafsky, N. R. Margoluis and K. Redford (n.d.) Adaptive management: A tool for conservation practitioners. <http://www.bsponline.org/bsp/publications/aam/112/titlepage.htm>
- Westman, W. 1985. Ecology, Impact Assessment, and Environmental Planning. John Wiley & Sons Canada, Limited.
- Williams, J. et.al. (1997). Watershed Restoration: Principles and Practices. American Fisheries Society.

### 3) WATERSHED ASSESSMENT:

- Azevedo-Ramos, Claudia, Oswaldo de Carvalho Jr & Robert Nasi (2002) Animal Indicators, a Tool to Assess Biotic Integrity after logging Tropical Forests? NAEA, IPAM, CIFOR. <http://www.ipam.org.br/download/misc/bioindicators-report.pdf>
- Barbour, M.T. et al. (1995). Multimetric Approach for Establishing Biocriteria and Measuring Biological Condition. Pp 63 - 80. In W. Davis and T. Simon. Biological Assessment and Criteria. CRC Press, Boca Raton, FL. [http://www.d.umn.edu/~crichard/BIOL\\_5867/Barbour\\_multimet\\_95.pdf](http://www.d.umn.edu/~crichard/BIOL_5867/Barbour_multimet_95.pdf)
- Barbour, M.T., J. Gerritsen, B.D. Snyder and J.B. Stribling (1999). Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish. US EPA. <http://www.epa.gov/owow/monitoring/rbp/>

- Galli, John (1992). Rapid Stream Assessment Technique.  
<http://www.stormwatercenter.net/monitoring%20and%20assessment/rsat/smrc%20rsat.pdf>
- Gerritsen, J., R. Carlson, D. Dycus et al. (1999). Lake and Reservoir Bioassessment and Biocriteria, Technical Guidance Document. 1998.  
<http://www.epa.gov/owow/monitoring/tech/lakes.html>
- Hughes, R. (1995). Defining Acceptable Biological Status by Comparing with Reference Conditions. Pp 31 - 48. In W. Davis and T. Simon. Biological Assessment and Criteria. CRC Press, Boca Raton, FL.  
[http://www.d.umn.edu/~crichard/BIOL\\_5867/Hughes\\_reference\\_95.pdf](http://www.d.umn.edu/~crichard/BIOL_5867/Hughes_reference_95.pdf)
- Jarrell, W.M. (1999). Getting started with TMDLs. [Total Maximum Daily Loads] YSI Incorporated, Oregon.  
[http://www.d.umn.edu/~crichard/BIOL\\_5867/GettingStartedtmdl.pdf](http://www.d.umn.edu/~crichard/BIOL_5867/GettingStartedtmdl.pdf)
- Murdoch, T. and Cheo, M. (1996). Streamkeeper's Field Guide: Watershed Inventory and Stream Monitoring Methods. Everette, Washington: The Adopt-S-Stream Foundation.
- Oregon State University Extension Service (2001). Stream\*A\*Syst. A tool to help you examine stream conditions in your property.  
[http://www.wcc.nrcs.usda.gov/watershed/pdffiles/Stream-A-Syst\\_2001.pdf](http://www.wcc.nrcs.usda.gov/watershed/pdffiles/Stream-A-Syst_2001.pdf)
- Oregon Watershed Assessment Manual (1999):  
[http://www.oweb.state.or.us/publications/wa\\_manual99.shtml](http://www.oweb.state.or.us/publications/wa_manual99.shtml)
- Stormwater Manager Resource Center. Tools for Assessing Stream Quality.  
<http://www.stormwatercenter.net/>
- US Department of Agriculture. (1998). Stream Visual Assessment Protocol. National Water and Climate Center Technical Note 99-1.  
<http://www.nrcs.usda.gov/technical/ecs/aquatic/svapfnl.pdf>
- US Environmental Protection Agency (EPA). (1999). Protocol for Developing Sediment TMDLs. [Total Maximum Daily Loads]  
<http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf>
- US Environmental Protection Agency (EPA). (1996). Biological Criteria: Technical Guidance for Streams and Small Rivers.  
<http://www.epa.gov/bioindicators/html/bioltech.html>
- US Environmental Protection Agency (EPA). (1990). Macroinvertebrate Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters.  
[http://www.epa.gov/bioindicators/html/benthos\\_methods.html](http://www.epa.gov/bioindicators/html/benthos_methods.html)

- Washington State Department of Natural Resources. Washington Watershed Analysis manual. (1997).  
<http://www.dnr.wa.gov/forestpractices/watershedanalysis/manual/>
- Wilkes University, Center for Environmental Quality. General resource to water quality testing. <http://wilkes1.wilkes.edu/~eqc/helpguide.htm>

#### **4) RESTORATION AND REHABILITATION:**

- Committee on Restoration of Aquatic Ecosystems (National Research Council). (1992). Restoration of Aquatic Ecosystems, Science Technology and Public Policy. <http://www.nap.edu/openbook/0309045347/html/>
- Schueler T.R. and Holland H.K. (2000). The Practice of Watershed Protection. Center for Watershed Protection, Ellicott City.  
<http://centerforwatershedprotection.gomerchant7.com/index.cgi?PageToView=catalog&Department=2602&Cartid=113401060799935&Merchant=centerforwatershedprotection&ExpandedDepts>
- US Department of Agriculture (2001) Stream Corridor Restoration. [http://www.usda.gov/stream\\_restoration/newgra.html](http://www.usda.gov/stream_restoration/newgra.html)
- US Department of Agriculture. National Conservation Buffer Initiative. <http://www.nrcs.usda.gov/technical/ecs/aquatic/buffer.pdf>
- US Environmental Protection Agency (EPA). (1995) Ecological Restoration. A Tool To Manage Stream Quality. <http://www.epa.gov/OWOW/NPS/Ecology/>
- Williams, Jack et. al. eds. (1997). Watershed Restoration: Principles and Practices. American Fisheries Society.

#### **5) CITIZEN AND COMMUNITY ACTION:**

- Bernard, Ted and Jora Young (1997). The Ecology of Hope: Communities Collaborate for Sustainability, New Society Publications, Gabriola Island, BC, Canada.
- Gasteyer, S.P., C.B. Flora, E. Fernandez-Baca, D. Banerji, S. Bastian, S. Aleman, M. Kroma, and A. Mears. 2002. Community Participation for Conservation and Development of Natural Resources: A Summary of Literature and Report of Research Findings. Delta Development Journal, 1 (2): 57-84.  
<http://www.ncrcrd.iastate.edu/pubs/flora/delta.htm>
- Global Rivers Environmental Education Network (GREEN). <http://www.green.org/resources/>

- Grimble, R., M.K. Chan, J. Aglionby, and J. Quan (2002) Trees and trade-offs: A stakeholder approach to Natural Resource Management. Gatekeeper Series #52. Sustainable Agriculture and Rural Livelihoods Program, International Institute for Environment and Development, London.  
<http://www.iied.org/docs/gatekeep/GK52.pdf>
- Kerr, John. The Economics of Soil Degradation: from National Policy to Farmers' Fields. Penning de Vries, Frits, Fahmuddin Agus, and John Kerr, eds. 1998. Assessing Soil Erosion at Multiple Scales. Wallingford, UK: CAB International.
- Light, Steve, Elizabeth Carlson, Kristen Blan et al. (1991). Citizens, Science, Watershed Partnerships, and Sustainability: The Case in Minnesota Volunteer Lake Monitoring: A Methods Manual. Surdna Foundation, Minnesota Department of Natural Resources and the Science Museum of Minnesota.  
<http://www.sustain.org/collaborative/CITSCI.pdf>
- Parkes, M. & R. Panelli (2001) Integrating catchment ecosystems and community health: The value of participatory action research. Ecosystem Health 7(2).  
[http://nrm.massey.ac.nz/changelinks/Parkes\\_Panelli\\_2001.pdf](http://nrm.massey.ac.nz/changelinks/Parkes_Panelli_2001.pdf)
- Perez, Carlos and Henry Tschinkel (2003). Improving Watershed Management in Developing Countries: a Framework for Prioritising Sites and Practices. ODI Agricultural Research & Extension Network, Network Paper No. 129, July.  
[http://www.odi.org.uk/agren/papers/agrenpaper\\_129.pdf](http://www.odi.org.uk/agren/papers/agrenpaper_129.pdf)
- Pretty, Jules, Irene Guijt, Parmesh Shah, and Fiona Hinchcliffe. 1995. Joint watershed management: new evidence from the New Horizons project. Indigenous Knowledge and Development Monitor 3(1), April. <http://www.nuffic.nl/ciran/ikdm/3-1/articles/pretty.html>
- Rasmussen, Lise and Ruth Meinzen-Dick (1995). Local organizations for natural resource management: lessons from theoretical and empirical literature. IFPRI.  
<http://www.ifpri.org/checknames.cfm/eptdp11.pdf?name=eptdp11.pdf&direc=d:\web\s\ifpri\divs\eptd\dp\papers>
- Rhoades, Robert. (2002). Participatory Watershed Research and Management: Where the Shadow Falls. Gatekeeper Series #81. Sustainable Agriculture and Rural Livelihoods Program, International Institute for Environment and Development, London. [http://www.iied.org/sarl/gatekeepers/gk\\_backissues/themes\\_m\\_p.html](http://www.iied.org/sarl/gatekeepers/gk_backissues/themes_m_p.html)
- River Network. The Volunteer Monitor. (A national newsletter, published twice a year, to facilitate exchange of ideas, monitoring methods and practical advice among volunteering monitoring groups).  
[http://www.epa.gov/owow/volunteer/vm\\_index.html](http://www.epa.gov/owow/volunteer/vm_index.html)

- Shannon, M. A. 1998. Social organizations and institutions, pp. 529-552 in R.J. Naiman & R.E. Bilby, River Ecology and Management. Springer Verlag, New York.
- Shindler, B., K. A. Cheek and G. Stankey (1999). Monitoring and evaluating citizen-agency interactions: a framework developed for adaptive management. US Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report, PNW-GTR-452. [http://www.fs.fed.us/pnw/pubs/gtr\\_452.pdf](http://www.fs.fed.us/pnw/pubs/gtr_452.pdf)
- Shindler, B. A., M. Brunson, and G. H. Stankey (2002). Social Acceptability of Forest Conditions and Management Practices: A Problem Analysis. US Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report, PNW-GTR-537. <http://www.fs.fed.us/pnw/pubs/gtr537.pdf>
- US Environmental Protection Agency (EPA), Office of Water (2003), Volunteer Lake Monitoring. EPA. <http://www.epa.gov/OWOW/monitoring/volunteer/lake/index.html>
- van Noordwijk, M. T. Tomich and B. Verbist. (2000). Negotiation support model for integrated natural resource management in forest margins and in landscapes with trees: can they solve local as well as global problems? *Conservation Ecology*. Vol. 5, No. 2, pp. 21. <http://www.consecol.org/vol5/iss2/art21/>
- von Hagen, B., Beebe, S., Schoonmaker and Kellogg, E. 1998. Nonprofit organizations and watershed management, pp. 625-641 in R.J. Naiman & R.E. Bilby, River Ecology and Management. Springer Verlag, New York.