## Water & Snow Citations

- Allan J. D. and M. M. Castillo. 2007. Stream Ecology: Structure and Function of Running Waters, 436 pp., Springer-Verlag, Dordrecht, Netherlands. Referenced in: Groom, J.D., L. Dent and L.J. Madsen. 2011. Stream temperature change detection for state and private forests in the Oregon Coast Range. Water Resources Research 47. Accessed 16 August 2012 from: http://scholarsarchive.library.oregonstate.edu/xmlui/bitstream/handle/1957/23520/GroomJerem v.FERM.StreamTemperatureChange.pdf?sequence=1
- Armentrout, S., H. Brown, S. Chappell, M. Everett-Brown, J. Fites, J. Forbes, M. McFarland, J. Riley, K. Roby, A. Villalovos, R. Walden, D. Watts, and M.R. Williams, 1998. Watershed Analysis for Mill, Deer, and Antelope Creeks. U.S. Department of Agriculture. Lassen National Forest. Almanor Ranger District. Chester, CA. 299 pp.
- Backiel, A. and R.W. Gorte. 1992. "Benefits and Liabilities of Clearcutting." Clearcutting in the National Forests: CRS Report for Congress. 92-607 ENR. Accessed 9 November 2012 from: http://www.cnie.org/nle/crsreports/forests/for-2.cfm/#BENEFITS AND LIABILITIES OF CLEARCUTTING
- Battaglin, William A., Karen C. Rice, Michael J. Focazio, Sue Salmons, Robert X. Barry. 2008. The occurrence of glyphosate, atrazine, and other pesticides in vernal pools and adjacent streams in Washington, DC, Maryland, Iowa, and Wyoming, 2005–2006. Environ Monit Assess 155:281– 307 DOI 10.1007/s10661-008-0435-y
- Berger, J.J. 2008. Forests Forever: Their Ecology, Restoration, and Protection. The Center for American Places at Columbia College Chicago, Chicago.
- Beschta, R.L., 1978. Long-term Patterns of Sediment Production Following Road Construction and Logging in the Oregon Coast Range. Water Resources Research 14:1011.
- Beschta, Robert L. and William S. Platts. 1986. Morphological features of small streams: significance and function. Water Resources Bulletin, Vol. 22, No. 3.
- Binkley, D. and T.C. Brown. 1993. Forest Practices as Nonpoint Sources of Pollution in North America. Water Resources Bulletin 29(5), American Water Resources Association. 729-740. Accessed 11 October from: http://warnercnr.colostate.edu/~dan/papers/WaterResourcesBulletin\_29\_5\_1993.pdf.
- California Department of Forestry and Fire Protection, California Department of Fish and Game, Central Valley Regional Water Resource Control Board, and California Geological Survey (Battle Creek Taskforce). 2011. A Rapid Assessment of Sediment Delivery from Clearcut Timber Harvest Activities in the Battle Creek Watershed, Shasta and Tehama Counties, California. Accessed 24 August 2012 from: http://www.bof.fire.ca.gov/board\_business/other\_board\_actions/battle\_creek\_report/final\_battle creek taskforce report.pdf

California Senate Office of Research. 2002. Timber harvesting and water quality forest practice rules

fail to adequately address water quality and endangered species. http://www.sen.ca.gov/sor/reports\_...NVIRONMENT\_NATURAL\_RESOURCES/TIMBERFY I.htm

- California Sportfishing Protection Alliance. 2011. Assessment of Battle Creek Monitoring Data. Letter to Marily Woodhouse. Accessed 9 November 2012 from: http://calsport.org/news/wpcontent/uploads/2011/09/Battle-Creek-WQ-Assessment.pdf
- Carle, David. 2004. Introduction to Water in California. University of California Press, Berkeley, CA.
- Centers for Water and Wildland Resources. 1996. Summary of the Sierra Nevada Ecosystem Project Report. Davis: University of California. Accessed 24 August 2012 from: http://ceres.ca.gov/snep/pubs/web/PDF/exec\_sum.pdf
- Cox, C. 1998. Herbicide Factsheet: Glyphosate (Roundup). Journal of Pesticide Reform 18(3): 3-17. http://www.madisonaudubon.org/audubon/alerts/200405Roundup/roundup.pdf
- Creed, I.F., G.Z. Sass, J.M. Buttle and J.A. Jones. 2011. Hydrological principles for sustainable management of forest ecosystems. Hydrological Processes. Accessed 15 August 2012 from: http://andrewsforest.oregonstate.edu/pubs/pdf/pub4692.pdf
- Dunne, T., Agee, J., Beissinger, S., Dietrich, W., Gray, D., Power, M., Resh, V. and Rodrigues, K., 2001. A Scientific Basis for the Prediction of Cumulative Watershed Effects. Wildland Resources Center, University of California, Berkeley, California, 103 p.
- Euphrat, Frederick D. 1992. Cumulative Impact Assessment and Mitigation for the Middle Fork of the Mokelumne River, Calaveras County, California. A dissertation submitted in partial satisfaction for the degree of Doctor of Philosophy in Wildland Resource Science in the Graduate Division of the University of California at Berkeley.
- Friends of Five Creeks. Water Quality Monitoring: Turbidity. Accessed 10 April 2012 from: www.fivecreeks.org/monitor/turbidity.shtml
- Gomi, Takashi, R. Dan Moore, and Marwan A. Hassan. 2005. Suspended Sediment Dynamics in Small Forest Streams in the Pacific Northwest. Journal of the American Water Resources Association (JAWRA) (4) 41:877-898.
- Gordon, Nancy D., Thomas A. McMahon, Brian L. Finlayson. 1992. Stream Hydrology. John Wiley & Sons Ltd. West Sussex, England.
- Greatest Value of Forests is Sustainable Water Supply, Media release from Oregon State University, 7/14/08
- Groom, J.D., L. Dent and L.J. Madsen. 2011. Stream temperature change detection for state and private forests in the Oregon Coast Range. Water Resources Research 47. Accessed 16 August 2012 from: http://scholarsarchive.library.oregonstate.edu/xmlui/bitstream/handle/1957/23520/GroomJerem y.FERM.StreamTemperatureChange.pdf?sequence=1

Gurtz, Webster & Wallace. 1980. Seston Dynamics in Southern Appalachian Streams: Effects of Clear-

cutting. Canadian Journal of Fisheries and Aquatic Sciences 37(4), 624-631. Accessed 23 August 2012 from: http://cwt33.ecology.uga.edu/publications/937.pdf

- Hicks, Brendon J., R.L. Beschta, R.D. Harr. 1991. Long-term Changes in Streamflow Following Logging in Western Oregon and Associated Fisheries Implications. Water Resources Bulletin, Vol. 27, No.2, 217-226.
- Jacobson, A. 2004. Water Quality Concerns in the Sierra Nevada from Silvicultural Activities: California Board of Forestry Policy and Management Committee. Accessed 24 August, 2012 from: http://www.rrraul.org/WaterQualityConcernsForBofF\_Clearcutting.pdf
- Jensen, D. & G. Draffan. 2003. Strangely Like War: The Global Assault on Forests. Chelsea Green Publishing Company, White River Junction, Vermont.
- Johnson, S.L. 2004. Factors influencing stream temperatures in small streams: substrate effects and a shading experiment. Canadian Journal of Fisheries and Aquatic Science 61: 913-923. Accessed 9 November 2012 from: http://ecobiblio.science.oregonstate.edu/files/ecoinfodev/pub3601.pdf
- Jones, J. A., and D. A. Post. 2004. Seasonal and successional streamflow response to forest cutting and regrowth in the northwest and eastern United States, Water Resour. Res., 40, W05203, doi:10.1029/2003WR002952.
- Jones, J.A. and G.E. Grant. 1996. Peak flow responses to clear-cutting and roads in small and large basins, western Cascades, Oregon. Water Resources Research 32:4, 959-974. Accessed 8 November 2012 from: http://scholarsarchive.library.oregonstate.edu/xmlui/bitstream/handle/1957/27734/JonesJuliaCE OASPeakFlowResponses.pdf?sequence=1
- Jones, J.A., G.L. Achterman, L.A. Augustine, I.F. Creed, P.F. Ffolliott, L. MacDonald and B.C. Wemple. 2009. Hydrologic effects of a changing forested landscape—challenges for the hydrological sciences. Hydrological Processes 23: 2699-2704.
- Kier Associates, 2003. Use of Spatial Data for Battle Creek Watershed Conditions Assessment. Arcata, California, 37 p.
- Kier Associates. 2009. Aquatic Habitat Conditions in Battle Creek and Their Relationship to Upland Management. Arcata, California, 34 p. Retrieved from battle-creek.net 4/2/11. http://www.battle-creek.net/docs/restoration/bowman\_comments\_appb.pdf
- Klein, R.D., J. Lewis and M.S. Buffleben. 2011. Logging and turbidity in the coastal watersheds of northern California. Geomorphology. 136-144. Accessed 6 November 2012 from: http://www.stopclearcuttingcalifornia.org/bca/research/Logging%20and%20Turbidity%20Klein %202011.pdf
- Klein, Randy D. 2008. Timber harvest and turbidity in north coastal California watersheds. The Third Interagency Conference on Research in the Watersheds: 207-212.
- Kuras, Piotr K., Younes Alila, and Markus Weiler. 2012. Forest harvesting effects on the magnitude and frequency of peak flows can increase with return period. Water Resources Research, Vol. 48,

W01544, doi:10.1029/2011WR010705

- Litschert, S.E., MacDonald, L.H., Frequency and characteristics of sediment delivery pathways from forest harvest units to streams. Forest Ecol. Manage. (2009), doi:10.1016/j.foreco.2009.038
- Lutz, J.A., van Wagtendonk, J.W., Franklin, J.F. 2010. Climate water deficit, tree species ranges, and climate change in Yosemite National Park. J. of Biogeogr. 37: 936-950.
- Moyle, P.B., R.M. Yoshiyama, R.A. Knapp. 1996. Status of Fish and Fisheries. pp. 960. In: Sierra Nevada Ecosystem Project: Final Report to Congress, vol. II, Assessments and scientific basis for management options. Davis: University of California, Centers for Water and Wildlife Resources. Accessed 23 August 2012 from: http://www.sierraforestlegacy.org/Resources/Conservation/SierraNevadaWildlife/Chinook/CH-Moyle-etal-1996.pdf
- Myers, Tom. 2012. Cumulative watershed effects of timber harvest and other activities, Battle Creek watershed, northern California. Prepared for the Battle Creek Alliance, Manton, CA, 52 pp.
- Napper, C.O., 2001. Cumulative Watershed Effects—Battle Creek. U.S. Department of Agriculture, Forest Service, Lassen National Forest, Susanville, California, 22 p.
- National Academy of Sciences. 2008. Expert Consensus Report on hydrologic effects of a changing forest landscape. http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reportsin-brief/forest\_hydrology\_final.pdf
- Neary, D.G., G.G. Ice and C.R. Jackson. 2009. Linkages between forest soils and water quality and quantity. Forest Ecology and Management 258. 2269-2281. Accessed 16 August 2012 from: http://naldc.nal.usda.gov/download/37177/PDF
- Perry, Timothy D. 2007. Do Vigorous Young Forests Reduce Streamflow? Results from up to 54 Years of Streamflow Records in Eight Paired-watershed Experiments in the H. J. Andrews and South Umpqua Experimental Forests. Master's Thesis, 152 pages.
- Rashin, E. and Graber, C. 1993. Effectiveness of Best Management Practices for Aerial Application of Forest Pesticides. Timber/Fish/Wildlife Cooperative Monitoring, Evaluation, and Research Committee Water Quality Steering Committee. Washington State Department of Ecology. Ecology Publication No: 93-81. Accessed 2 November 2012 from: http://ptairwatchers.org/pdfs/health/spraysonmanagedforests%20l993.pdf
- Reeves, Gordon H., Fred H. Everest, and James R. Sedell. 1993. Diversity of Juvenile Anadromous Salmonid Assemblages in Coastal Oregon Basins with Different Levels of Timber Harvest. Transactions of the American Fisheries Society 122:309-317.
- Reid, L.M. and E.T. Keppeler. 2012. Landslides after clearcut logging in a coast redwood forest. In: Coast Redwood Forests in a Changing California. Proceedings of the Redwood Science Symposium held June 21-23, Santa Cruz, CA. Accesssed 7 November 2012 from: http://ucanr.org/filevault/temp/3D04DF3F-AD67-5506-769C1F2B53DBB077-27123.docx

Reid, L.M. and J. Lewis. 2011. Evaluating Cumulative Effects of Logging and Potential Climate

Change on Dry-Season Flow in a Coast Redwood Forest. In: The Fourth Interagency Conference on Research in the Watersheds, 26-30 September, Fairbanks, AK. Accessed 7 November 2012 from: http://www.fs.fed.us/psw/publications/reid/psw\_2011\_reid001.pdf

Reid, Leslie M. 1999. Letter to Assemblyman Fred Keeley regarding cumulative watershed impacts.

- Reid, Leslie M. 2010. Understanding and evaluating cumulative watershed impacts. USDA Forest Service RMRS-GTR-231. 277-298.
- Rhodes, Jonathan and Michael Purser. 1998. Thinning for Increased Water Yield in the Sierra Nevada: Free Lunch or Pie in the Sky? Prepared for the Pacific Rivers Council, Albany, CA. 35 pp.
- Richter, A. and S.A. Kolmes. 2005. Maximum Temperature Limits for Chinook, Coho, and Chum Salmon, and Steelhead Trout in the Pacific Northwest. Reviews in Fisheries Science 13: 23-49. Accessed 9 November 2012 from: ftp://aerl03.aerl.ubc.ca/n.taylor/Sockeye/Sockeye/s29.pdf
- Sedell, J., M. Sharpe, D. Dravnieks Apple, M. Copenhagen, M. Furniss. 2000. Water and The Forest Service. USDA Forest Service. FS-660. 26pp. Accessed 16 August 2012 from: http://www.fs.fed.us/publications/policy-analysis/water.pdf
- Sheil, Douglas and Daniel Murdiyarso. 2009. How forests attract rain: an examination of a new hypothesis. Bioscience 59.4: 341+.
- Sierra Nevada Conservancy. 2011. Strategic Plan. Accessed 16 August 2012 from:http://www.sierranevada.ca.gov/about-us/snc-brochure/snc-brochure/aboutus/docs/StratPlan2011.pdf
- State of California, The Resources Agency, Department of Water Resources. 2002. Preparing for California's Next Drought. Sacramento, CA, 25 p.

Survey shows lack of snow in Sierra Nevada, Sacramento Bee, 1/4/12

- Suttle, K.B., M.E. Power, J.M. Levine and C. McNeely. 2004. How fine sediment in riverbeds impairs growth and survival of juvenile salmonids. Ecological Applications 14: 969-974. Accessed 23 August 2012 from: http://www.stopclearcuttingcalifornia.org/bca/research/HOW%20FINE %20SEDIMENT%20IN%20RIVERBEDS %20IMPAIRS%20GROWTH%20AND %20SURVIVAL%20OF%20JUVENILE%20SALMONIDS.pdf
- Suttle, Kenwyn B., Mary E. Power, Jonathan M. Levine, Camille McNeely. 2004. How Fine Sediment in Riverbeds Impairs Growth and Survival of Juvenile Salmonids. Ecological Applications, Vol. 14, No. 4 pp. 969-974.
- Terraqua Inc., 2004. Battle Creek Watershed Assessment, prepared for the Battle Creek Watershed Conservancy, 78 pp.
- The National Academies. 2008. Hydrologic Effects of a Changing Forest Landscape: Report in brief. www.nap.edu

Thompson, L.C., Escobar, M.I., Mosser, C.M., Purkey, D.R., Yates, D., Moyle, P.B. 2011. Water

management adaptations to prevent loss of spring-run Chinook salmon in California under climate change. J. Water Resour. Plann. Manage., 10.1061/(ASCE)WR.1943-5452.0000194 (Aug. 31, 2011). Available online at: http://ascelibrary.org/wro/resource/3/jwrmxx/140

- Timmer, K.L. 2003. Troubled Water of the Sierra. Sierra Nevada Alliance. Accessed 29 October 2012 from: http://www.sierranevadaalliance.org/publications/TroubledWatersReport.pdf
- Tussing, S.P., and Ward, M.B., 2008. Battle Creek Stream Condition Monitoring: 2006 Data Analysis Report. Terraqua Inc., prepared for the Battle Creek Watershed Conservancy and the California State Water Resources Control Board, 26 p.
- Viessman, Warren, Jr., and Gary L. Lewis. 2003. Introduction to Hydrology. Pearson Education, Inc., New Jersey.
- Weidner, Emily and Al Todd. 2011. From the Forest to the Faucet. USDA Forest Service. 34 pp.
- Welsh, H.H., Jr. 2011. Frogs, Fish and Forestry: An Integrated Watershed Network Paradigm Conserves Biodiversity and Ecological Services. Diversity 3: 503-530. Accessed on 20 August 2012 from: http://www.fs.fed.us/psw/publications/welsh/psw\_2011\_welsh002.pdf
- Welsh, H.H., Jr., T.D. Roelofs and C.A. Frissell. 2000. Chapter 6: Aquatic Ecosystems of the Redwood Region. In: Noss, R.F., Ed. The Redwood Forest: History, Ecology and Conservation of the Coast Redwoods. Island Press, Washington, D.C. Accessed 20 August 2012 from: http://www.fs.fed.us/psw/publications/welsh/welsh12.pdf
- Welsh, Hartwell H., Jr. and Garth R. Hodgson. 2009. Stream amphibians as metrics of critical biological thresholds in the Pacific Northwest, U.S.A.: a response to Kroll et al. Freshwater Biology 54, 2374–2382 doi:10.1111/j.1365-2427.2009.02273.x
- Whitton, K.S., J.M. Newton and M.R. Brown. 2007. Juvenile salmonid monitoring in Battle Creek, California, October 2002 through September 2003. USFWS Report. U.S. Fish and Wildlife Service, Red Bluff, Fish and Wildlife Office, Red Bluff, California. Accessed 9 November 2012 from: http://www.fws.gov/redbluff/PDF/Battle%20Creek%20Juvenile%20Salmonid %20Monitoring%2002-03.pdf
- Wilkinson, R. 2002. Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change for California: The California Regional Assessment. A Report of the California Regional Assessment Group.http://www.ncgia.ucsb.edu/pubs/CA\_Report.pdf
- Wilshire, Howard G., Jane E. Nielson, Richard W. Hazlett. 2008. The American West at Risk. Oxford University Press, New York.
- Wilson, M.F., S.M. Gende and B.H. Marston. 1998. Fishes and the Forest: Expanding perspectives on fish-wildlife interactions. Bioscience 48(6). Accessed 23 August 2012 from: http://www.fish.washington.edu/people/naiman/contemporary/papers/willson.pdf
- Yoshimaya, R.M., E.R. Gerstung, F.W. Fisher and P.B. Moyle. 1996. Historical and Present Distribution of Chinook Salmon in the Central Valley of California. In: Sierra Nevada Ecosystem Project: Final Report to Congress, vol. III, Assessments and scientific basis for

management options. Davis: University of California, Centers for Water and Wildlife Resources. Accessed 23 August 2012 from: <u>http://www.sierraforestlegacy.org/Resources/Conservation/SierraNevadaWildlife/Chinook/CH-Yoshiyama-etal1996.pdf</u>

## Some expert opinions on Clearcutting and Water

## From Frederick Euphrat's PhD dissertaion on the Mokelumne River

Cumulative Impact Assessment and Mitigation for the Middle Fork of the Mokelumne River, Calaveras County, California. A dissertation submitted in partial satisfaction for the degree of Doctor of Philosophy in Wildland Resource Science in the Graduate Division of the University of California at Berkeley, 1992.

Bates and Henry conducted a 15-year study "on the effects of clearcutting in Colorado snow-zone watersheds. Their results were similar to many other studies, from the Paulini brothers [in 1607] to the present—cutting increases peak flows and increases sedimentation [in] watersheds." (14)

"Harr et al. found that...clearcutting increased storm runoff in coastal Oregon watersheds." (56)

"[Study of harvest method and amount of bare ground] suggests that, per unit of ground, the potential for stream channel effects from surface soil erosion is greater on clearcuts." (100)

"Bare ground is a potential source area for stream sedimentation, because machine-operated ground creates surfaces of relatively lower permeability over which overland flow is more likely to carry sediment." (69)

"Significant differences were found between the clearcut and selectively harvested sites... indicative of probable source areas for sediment transport." (70)

"Data show that runoff from large storms in the Mokelumne watershed has significantly increased over the period 1930-1980, the period in which these basins experienced timber harvesting and roadbuilding activities. Because the effect does not appear to be flattening over time, the change in runoff characteristics may well be tied to timber harvesting as well as road densities. Timber harvesting affects runoff by its reduction of vegetation cover and subsequent impacts on the snow pack. It may be fair to say that more recent timber harvesting, affecting annually and cumulatively greater and greater areas, combined with roads, skid trails, and tree removal, is creating progressively greater runoffs from large storms, with the largest storms displaying the greatest increase of runoff." (57) From East Bay Municipal Utility District's "Protecting the Mokelumne River: A District's Response to the Proposed Divestiture of PG&E's Mokelumne River Project"

Available through the East Bay Municipal Utility District website

"...Poor timberland management and maintenance practices could send sediments and nutrients to the lower river, harming water quality and fish." (2)

From the Foster Wheeler report prepared for SPI:

Foster Wheeler Environmental Corporation. Watershed Assessment Upper Mokelumne River, Volume I —Watershed Assessment; Prepared for Sierra Pacific Industries. August 2000

"A study that compared the effects of timber harvest practices on peak flows in two Sierra Nevada watersheds, showed an increase in peak flows following a forest canopy reduction of 58 percent.... The author also concluded that an increase in exposed snowpack allowed for greater heat transfer into the snowpack contributing to increased peak flows (Marvin 1996)." (65)

"The use of the clearcut silvicultural method would likely result in greater water runoff from individual timber harvest units..., there is some potential for increased sediment delivery from some units either to roads or across WLPZs [water protection zones].

"Though the Upper Mokelumne watershed is considered to be relatively stable, there is some potential for localized increases in mass wasting when the clearcut silvicultural treatment is used in areas of steepest slopes." (111)