



E. George Robison; PhD, PE, P.Eng., D.WRE

Age 59, married with three children

Contact information:

Current Position: Deputy Director, Truckee River Flood Management Authority

Education:

- Ph. D. Oregon State University, Corvallis, Oregon; Civil and Forest Engineering Departments (Dual Degree) Water Resource Engineering and Forest Hydrology, Completed March 1998; GPA 3.9/4.0
- M.S. Oregon State University, Forest Engineering Dept. – Forest Hydrology, December 1987 (GPA 3.8/4.0)
- B.S. University Nevada Reno, Range, Wildlife, and Forestry Dept. Range Wildlife and Forestry, (Emphasis in Forestry) June 1983 (GPA 3.87/4.0)
- Reno High School, 1979. High School Diploma. Graduated with High Distinction. (GPA 3.75/4.0)

Statement of Interests:

My overall interests and expertise are in hydrology and hydraulic engineering, especially in working with streams, spillways, canals, channel crossings, and stream channel conveyance and restoration. I also have expertise in design of dams, especially earthen dams and various types of spillways and energy dissipation systems. I work in both analysis, design as well as construction supervision. At this point in my career I am often a supervisor, mentor or advisor in these roles. I both use and supervise the use of hydrologic and hydraulic models such as HEC-HMS, HEC-RAS, FLO-2D, River Flow 2D. I have conducted and managed modeling studies for hydraulic design, flood control, channel restoration, instream flow needs, spillway and culvert sizing, and other applications. I have worked in government, academics and the private sectors. This broad range of expertise gives me a unique perspective regarding the execution and management of engineering projects from differing expectations and needs. I have worked on very small headwater stream systems all the way to large main stem rivers, such as the Columbia and Sacramento Rivers. I have over 30 years of experience in Hydrology and Hydraulics as listed below. I also have experience supervising and leading highly technical multidisciplinary teams on complex/consequential projects as well as leading state government programs in Oregon such as the Dam Safety Program.

Experience Pertaining to Water Resource Engineering and Hydrology:

Truckee River Flood Management Authority: Deputy Director:

May, 2019 to Present: Jay Aldean Executive Director, Supervisor

From May until end of August my role was Deputy Director and I shadowed Director Aldean and was assigned the Regional Hydrologic Model, the Physical Map Revision projects and also worked alongside Eric Scheetz regarding the Vista Narrows 65% Design. As time went on I was given more and more responsibility regarding key decisions such as how to proceed with the USACE Sacramento District, how to proceed on projects such as Vista Narrows and the Physical Map Revision Project. In September, Director Aldean essentially retired mostly taking Vacation and Comp time, and I have taken over his duties and responsibilities for the last 2 months. This includes setting the agenda for Board and other meetings, setting overall direction in consultation with the Board and supervising employees.

McMillen Jacobs and Associates Senior Project Manager: Hydrology and Hydraulic Engineering:

June 2010 to Present – In August 2016 I started an office in Sparks Nevada. Supervisor: Marissa Emmons, Vice President: 1401 Shoreline Drive, Boise Idaho, 83702. Phone 208-842-4214 (email: Marissaemmons@mcmjac.com)

Manage and lead civil, hydrologic and hydraulic engineering projects and resource studies. Projects have involved hydrologic and hydraulic modeling and or analysis and the formulation of design plans at various stages of development. As part of duties, I have also hired and managed civil engineering staff. Clients include small private irrigators and HOA's, utilities, and state and federal government. Examples of projects include, but are not limited to:

- **United States Army Corps of Engineers (USACE) Sacramento District:** Lead Hydraulic Engineer for Napa Dry Bypass design. Involved modeling hydraulics for bank and bed linings and flood wall analysis for a bypass for the Napa River in downtown Napa. Also, redesigned an energy control structure to better fisheries concerns. We later modified design to change part of the bypass into an amphitheater using baffle blocks as chairs and tables. \$15 million total project cost. Construction completed in completed in 2015.
- **City of Boise Idaho,** Lead Hydraulics Engineer for Ester Simplot Park Project near downtown Boise Idaho. Evaluate, review, and then adapt 1D and 2D hydraulics models for the Boise River for use in analysis of white-water structures and river bank regrading on flood levels and erosion and other impacts. Adapt models for various flow levels to design coffer dams and other construction features. Project work totals near 10 million dollars. Phase I done; Phase II under construction.
- **South Feather Water and Power Authority:** FERC Part 12 inspection 5 dams. Project manager for 5-year inspection and Potential Failure Mode Review and reporting as well as special spillway assessments for 3 of the dams. (Inspection in 2017 with Spillway work still occurring.)
- **Nevada Water Resource Department:** Project Manager and Engineer. Design for miscellaneous repairs and assessments for South Fork Dam near Elko, Nevada. Includes intake repairs, assessments, and repair recommendations for upstream gage as well as recommendations regarding seepage issues at dam.
- **United States Army Corps of Engineers (USACE) Sacramento District:** Evaluation of grade control structure on Sacramento River - Glen Colusa Irrigation District for Sacramento District Army Corps of Engineers. Involved three-dimensional velocity characterization of grade control riffle as well as scour hole formation and options for repair Project Manager for both in house and sub-consultants. Total Contract Value \$165,000 (Completed Fall 2013)
- **United States Army Corp of Engineers Walla Walla District:** Columbia River Treaty. Project Manager and Senior Hydraulic Engineer for several task orders to conduct 8 HEC-RAS flood inundation models encompassing over 500 river miles on the Columbia, Snake, and Clearwater Rivers in Washington and Idaho. Additionally, hydrologic assessments in Upper

Snake River Basin for treaty studies regarding the Columbia River treaty. Total value of task orders approximately \$400,000. (Completed early 2012)

- **United States Army Corp of Engineers Walla Walla District:** Project Manager: Hydrologic Modeling improvements to HEC-HMS for the Boise River basin upstream from Lucky Peak Dam for USACE. Created a continuous hydrologic model with improved rain on snow components that also had forecasting capabilities. We also created a gridded HEC-HMS model. Total Value approximately \$90,000. (Completed Spring, 2011)
- **United States Army Corp of Engineers (USACE); San Francisco District:** Project Manager: Dam break inundation analysis for Warm Springs Dam (Lake Sonoma near Sonoma, California). Project consisted of both a dam break inundation and hydrology study for Lake Sonoma. (300-foot-tall dam) from Warm Springs Creek to the Pacific Ocean (45 stream miles). Total project approximately \$250,000. (Completed early 2011)
- **United States Army Corp of Engineers Walla Walla District:** Project Manager: Modeling water temperature on the Snake and Clearwater Rivers using the CE-QUAL-W2 model. Total Contract value \$125,000. (Completed Spring 2011)
- **United States Army Corp of Engineers Walla Walla District:** Project Manager: Dam break inundation analysis for Lucky Peak Dam. Work included a dam break inundation model using HEC-RAS for Boise and Snake River between Lucky Peak (320-foot-tall dam) and Brownlee Dam. Total project approximately \$110,000. (Completed November 2011)
- **Pacific Properties Kenolio Apartments CLOMR, Maui, Hawaii:** Project Manager. McMillen Jacobs provided HEC-RAS modeling and GIS map work and prepared a CLOMAR for the proposed Kenolio Apartments in Maui. The apartments abut a stream and parts of the project have the potential to affect the conveyance of the stream and thus change flood levels. The analysis compared flood inundation from 100-year event with the finished project vs. existing conditions to show if there was any impact to flooding levels. (~\$40,000 CLOMR completed)

Additionally, I engage in pursuits and marketing. I have won several projects over the years, including Sutherlin, Fish Hawk, OWRD, Big Willow Ranch listed above as along with several smaller projects not listed. I also attended and participated in ASDSO meetings and was a member of the Truckee River Flood Control Project Needs Committee from fall of 2017 to spring of 2019.

Oregon Water Resources Department: Dam Safety Coordinator/Engineer

January 2008 – June 2010; Salem, Oregon.

Barry Norris* State Engineer. Supervisor: 725 Summer Street NE, Suite A, Salem, OR 97301;

*Barry Norris has retired please see information on how to contact him in personal references.

Reviewed and approved construction plans for new dams, inspected existing dams for structural and other defects, and evaluated them for maintenance needs. These activities require knowledge of civil engineering, hydrology, hydraulics, and geotechnical analysis to evaluate the veracity of plans and specifications. Regulatory action, which requires knowledge of Oregon law and administrative code, was also part of my job description. This job also involved classifying dams based on the downstream hazard they can create if they failed. This hazard review involved the use of hydraulic and models such as HEC-RAS and HEC-HMS and other hydraulic and hydrologic calculations. I maintained a database of existing dams under state regulatory jurisdiction. This position also served as the Oregon Representative to the American Society of Dam Safety Officials. Specific accomplishments include:

- Stewarded the first revision of dam safety rules since 1994 focusing on dam hazard rating methods and inundation studies.

- Managed the entire program and budget for dam safety and set up a Dam Safety Fee Program for approximately 900 state and private dams throughout Oregon. This program produced nearly 100% compliance rate with minimal controversy.
- Managed the National Dam Safety Program federal FEMA grant. This program included a grant program to support inundation mapping and other activities to create emergency action plans, a spillway capacity study, and other activities.
- Chaired the Ecological Flow Technical Advisory Committee. This committee is comprised of experts from academia, government, and private consultants regarding instream flow requirements when proposing water storage projects under Oregon HB 3369. This included treatment of channel maintenance and flushing flow requirements.
- Represented the Department for Association of Western State Engineers Meetings in Montana and Idaho in 2008 and 2009.

Consulting:

July 1999 – June 2010 (President Watersheds Northwest from January 2002 – End 2006; Temporary Employee MFG-Tetra-Tech Summer 2003 – Fall 2005).

As a consultant I worked on projects mostly involving fish passage at road crossings, water quality and stream riparian assessments, and research projects. I also taught a class on three separate occasions for Oregon State University as a temporary employee. I consulted full time from 1999 – 2002. Most of the time these jobs were done on weekends and vacation time, while working other jobs. I started an S-Corporation in 2002 to handle some of the task orders and grants I won in a more professional manner.

- **Ministry of Environment and Ministry of Forestry:** Fish passage consulting British Columbia; 2001, 2004-2007, and 2009-2010. I wrote a policy white paper on fish passage for road stream crossings policy for the Council of Forest Industries in BC, participated in a pilot design and installation project for two installations, conducted workshops on fish passage design, and a workshop on fish passage monitoring. In 2004-2005 I taught more workshops on fish passage monitoring/design. Was co-principal investigator on a fish passage effectiveness monitoring project. Clients have included several forest industry entities, the Ministry of Forests, and the Ministry of Environment.
- **Oregon Department of Forestry:** Oregon State Lands Aquatic HCP Rationale and Effectiveness Analysis: Evaluated the rationale behind and the effectiveness of various aquatic and riparian strategies, and the best management practices associated with them. Draft submittal of an aquatic HCP by Oregon Department of Forestry to Federal Agencies. This project was conducted in cooperation with MFG Tetra Tech. (Completed in 2003)
- **Clackamas River Basin Council:** Fish Passage Assessment and Prioritization: Watersheds Northwest (my company), along with sub-contractors, conducted an assessment and prioritization of human caused barriers (exclusively road stream crossings) to fish passage and potential improvements in the Clear and Foster Creek basin near Portland Oregon. (Completed in spring 2003.)
- **Oregon Headwater Research Cooperative Project:** Project lead and manager: Led the assessment of channel conditions at the end of fish use on small headwater streams in western Oregon. Watersheds Northwest and subcontractors evaluated land use effects and baseline conditions for dozens of small headwater stream channels at the end of fish use throughout Western Oregon. This project was also partially conducted under the HSU Foundation. (Completed in 2006.)

- **Oregon State University:** Watershed processes class – Spring 2000, 2001, 2007. I developed and fully taught the senior/graduate level watershed processes class for the Forest Engineering Department. (Forest Engineering and Resource Management Department, Oregon State University, Corvallis, Oregon 97333; Phone: 541-737-4952)
- **Oregon Watershed Enhancement Board and Oregon State University:** Fish Passage Training workshops: Spring 2000; throughout Oregon. I was the key instructor in several workshops. I taught fish passage theory and design for closed and open bottom culverts along with decision making between options, including bridges. In total, more than 500 people attended these seminars.
- **Other projects:** Wrote a draft guidebook on fish passage at road crossings for Oregon State University Extension, conducted reviews for the American Fisheries society on technical documents, and taught a training session on the role of sediment in affecting fish populations.

Instream Flow Specialist Oregon Department of Fish and Wildlife: May 2006 – January 2008; Supervisor Rick Kepler: Salem Oregon; (Retired: Call Anna Pakenham Stevenson at 503-947-6084 to verify employment. She has no overlap with me so she cannot evaluate performance.)

This position is the Department's expert on flow needs for fish and wildlife and to provide the Department with the expertise to identify flow needs for fish and wildlife and their habitat. The primary duty of the Instream Flow Specialist is to evaluate and provide recommendations to staff, local, state and federal agencies, and the public on the impacts of water use to fish and wildlife needs. Activities included review of water right applications, transfers, and extensions for impacts on fish and wildlife and their habitat, the calculation of in-stream flow needs for in-stream water right applications, reviewing of flow studies used to justify certain flows for the benefit of fish and wildlife, identifying needs for flow restoration, and develop and defend in-stream flow protections and in-stream water right adjudications. This job required me to be proficient and competent using one and two dimensional streamflow modeling programs such as PHABSIM and River2D.

Specific Activities:

- Provided testimony for Klamath River re-licensing regarding instream flow levels and input of information for the FERC and Settlement process,
- created agency guidelines for how to determine quantitatively channel maintenance and other elevated flow needs for streams when reviewing storage water right applications,
- participated in two instream flow studies (I was the lead on the Donner and Blitzen River in Eastern Oregon),
- reviewed numerous hydrologic, geomorphic and fish use reports for three hydro re-licensing projects.

Assistant Professor Wildland Hydrology and Watershed Management: Humboldt State University Arcata, CA

Fall 2002 – May 2006; Continued as Adjunct Professor May 2006- May 2011.

Supervisor: Ken Fulgham (now retired); Former Department Chair (707-834-1945; fulghamk@humboldt.edu)

As an assistant professor, my responsibilities included teaching/developing courses in water law, watershed management, hydrology, and watershed analysis, and developed a research program in

watershed management. In addition, I was in charge of the Department's curriculum committee and was the Associate Director for the Institute of Forestry and Watershed Management in 2002-2003.

Specific classes taught include:

- Watershed Management: (Three lectures and one lab per week; taught once) Junior level introductory course for non-forestry and non-watershed majors on watershed management, basic hydrology, and water quality. This class was designed as non-math intensive.
- Wildland Hydrology and Watershed Management I: (Three lectures and one lab per week; taught four times) Junior level introductory range and forest watershed class on hydrologic cycle and water quality taught to forestry, engineering, fisheries, or natural resource students. This course had a significant quantitative component.
- Wildland Hydrology and Watershed Management II: (Three lectures and one lab per week; taught four times) Senior/Graduate level intermediate class on wildland hydrology that focused on quantification, modeling, and monitoring of aspects of the hydrologic cycle and stream water quality.
- Watershed Analysis: (Two lectures and one lab per week; taught once) Graduate level class on how to conduct watershed analysis. Lab work included obtaining data and completing components of a watershed analysis for an actual watershed with mixed land uses.
- Water Rights and Water Law: (Three lectures per week; taught four times) Graduate level class encompassing water allocation law integrated with water quality law with a focus on contrasting California vs. Oregon Water Law.
- Forest Hydrology Seminar: (One lecture per week; taught twice) This was a senior level review of literatures on key topics. Topics included a seminar on subsurface flow paths such as macropore flow and piston flow.
- Forest Management: (Two lectures and one lab per week; taught once) Junior level overview of forestry for non-forestry majors that have a background in science or natural resources.
- Forest Measurements: (Three lectures and one lab per week; taught once) Sophomore level class that focused mostly on surveying techniques such as using levels, GPS and total stations. The course also introduced forest mensuration techniques.

I was the major professor for 12 graduate student committees at the Masters level (the CSU University system does not allow for PhD students). I managed grants and was the supervisor for several graduate students along with undergraduates and graduate assistants.

Based on my performance in research, teaching and service, I was awarded tenure after only four years. The tenure file as well as the letter offering tenure from the Humboldt State University President from May of 2006 can be provided by request.

Oregon Department of Forestry – Lead Forest Hydrologist:

December 1994 – July 1999.

Supervisor Ted Lorensen, Salem Oregon. Ted has retired. Please see Keith Mills in Personal References below. Keith was a peer at the Oregon Department of Forestry and can verify employment and performance. He is currently State Engineer for the Oregon Water Resources Department.

My responsibilities were to be the agencies lead technical person regarding water issues that impacted the agency and its policies, especially regarding regulations on state and private forest lands. Under this large domain of responsibility several key activities were conducted. These responsibilities included:

- Landslide Study: 1996-1999. After a major storm event in 1996, ODF undertook a study of landslides and channel impacts due to the storms. We (a team of six scientists along with support staff) conducted the largest ground-based study of landslides and their stream channel impacts up until that time. I took a lead role in the project and was the lead author of the final report. This report had paid peer review by a team of 4 scientists from University of California, Berkley and Oregon State University. Please note: this was a large study with a budget of approximately \$250,000 from 1996-98.
- Fish passage guidelines: 1995-1999. Beginning in 1995 I developed agency guidance regarding fish passage at forest road crossings. The guidance was updated several times and led to a major training workshop being developed in 1999. Over 700 people attended these trainings from all over the state. I was the organizer and primary lecturer in these two-day advanced trainings. The overall feedback was positive. I also was the agency expert on fish passage. I evaluated and advised stakeholder about fish passage on hundreds of crossings in Oregon. I worked with Oregon Fish and Wildlife Department and other state and federal agencies to complete a memorandum of understanding to gain acceptance of these guidelines by other agencies for state and private forest land applications.
- Support for Oregon Plan for Salmon and Watersheds: 1997-1999. In response to several species' listings by the National Marine Fisheries Service Oregon, the state developed a large comprehensive plan to restore fish populations. I took a lead role in developing the physical habitat portion of the plan. I also developed several internal fact papers on the hydrologic and water quality effects of forest practices and the effectiveness of forest practice rules. I also took an early lead role in developing restoration project guidelines. Furthermore, I worked with the Oregon Department of Environmental Quality and EPA to develop and complete a memorandum of understanding to agree on how forest practice rules and clean water act provisions would interact. The goal was to prevent redundant enforcement actions on state and private forest land.
- Riparian rule development and guidance: 1994-1999. I was involved with and the lead author in creating a guide to placing large woody debris in streams for provisions in the 1994 forest practice rules. I was also an advisor in developing protocols for riparian rule effectiveness monitoring and was the lead author on a stream water temperature study regarding riparian rules. I was involved as an advisor for practical implementation of the rules and in determining penalties during enforcement actions. Finally, I was used as an expert witness and wrote draft fact papers for the committee working on new water protection rules in Oregon.
- Other projects: 1994-1999. I worked on a project to classify streams, based on the stream size, for forest practices regulations on largely un-gaged sites. I was involved in TMDL analysis by sitting on the Technical Advisory committee for the Tualatin basin TMDL for phosphorus. This committee was one of the first non-point source TMDLs in the Country. In my role as water issues coordinator, I also evaluated proposed water related legislation for its impacts on forest practice rules in Oregon. Furthermore, I took an active role in advising the development of the Watershed Assessment Manual used by watershed councils in Oregon.

Oregon State University Civil Engineering and Forest Engineering Departments, GRA (Ph.D. Work):

January 1992- November 1994; Corvallis Oregon. Major Professor: Robert L. Beschta (please see contact information in References)

I worked closely with the US EPA (Environmental Monitoring and Assessment Program: EMAP) on setting up protocols for monitoring stream physical habitat for small wadable streams throughout the United States. The work involved researching and testing approaches for measuring physical habitat in Oregon as a pre-pilot for large extensive studies that now involve thousands of streams. In developing

protocols, the research looked at the precision and accuracy of various measures using innovative statistics. The research also involved attempting to find linkages between watershed/riparian processes and stream morphology and linking morphology to biological responses. The population sample included streams under forest, range, agricultural and urban land use. It included evaluating everything from watershed characteristics to relative abundance of vertebrate species using multiple pass sampling. I supervised one of the two crews and was the developer of the habitat measurements taken.

Oregon Water Resources Department, Surface Water Hydrologist:

Salem, Oregon. Sept. 1989 - January 1992. Supervisor Fred Listner has retired please use Barry Norris from references to get information about my performance and to verify employment.

I was in charge of determining stream flows and surface water availability (stream flows minus water use and in-stream water rights) for the state of Oregon. This was known as the water availability program. It consisted in indirect supervision of three Natural Resource Specialists in three regions as well as supervising and budgeting for help in Salem developing the models and results. In determining these statistics, I developed and adapted several methods of frequency analysis and record extension. I also developed empirical regression models to get stream flows at un-gaged sites for about 2/3 of Oregon State. Additionally, I oversaw developing a statewide miscellaneous stream flow measurements program and helped set up stream flow monitoring sites at nearly 100 locations. As the only surface water hydrologist at OWRD, I was also the agency's expert on all surface water hydrological engineering matters and interacted on several interagency advisory committees. I also worked with the Oregon Department of Fish and Wildlife on refining methods and policy for determining in-stream water right flow levels.

Oregon State University Forest Engineering Department, Faculty Research Assistant:

August 1987- September 1989; Corvallis Oregon. Supervisor Robert L. Beschta (please see contact information in References)

As a faculty research assistant, I assisted with several graduate students helping them set up field protocols as well as advising them on data analysis. I helped set up a study on stream morphology and logging/grazing effects in eastern Oregon. I also set up and assisted in a study on stream morphology and human disturbance in Arizona, Idaho, and Nevada. Additionally, I helped set up a study to monitor ground water levels and stream flows for a small stream in the Oregon Coast Range. I researched how to determine which trees to leave in buffer strips based on their predicted future impact on streams. I also substitute taught for the watershed processes class in the College of Forestry several different times. Furthermore, I assisted in conducting data analysis of ground water data for the Camp Creek riparian exclosure located in Eastern Oregon. I was involved with the evaluation of "fish habitat improvement structures" and their effects on stream morphology. I gave two workshop sessions on this subject in 1989 and 1990 for the American Fisheries Society.

Oregon State University, Forest Engineering GRA (M.S. Work):

June 1985 - August 1987.

My research was an evaluation of large woody debris and its effects on channel morphology. From this research several papers were published (see publication list below).

Nevada Division of Forestry Assistant Nursery Manager and Inmate Crew Foreman:

May 1983 – June 1985.

This position started off as the Assistant Manager of a Nevada Division of Forestry Tree Nursery north of Las Vegas followed by a year as an Inmate Crew Foreman in Carson City. My job was to train and manage a crew of inmates to conduct basic nursery and forestry work which included seed germination, plant growth maintenance, wildfire suppression, timber stand improvement, and general forestry related labor.

Awards and Honors, Professional Affiliations, and Special Training

- Licensed Professional Engineer (all currently active) (PE):
 1. Nevada #024038; 2. California #86142; 3. Oregon #81447; 4. Alaska #13535PE; 5. Hawaii #16153; 6. Missouri # PE-2014-035815; 7. Montana #28653; 8. New Mexico # 22607; 9. New York #099368-1; 9. North Dakota #PE-748; and 10. Pennsylvania #PE084211;
- Licensed Engineer (P.Eng.; Active) British Columbia # 175016
- NCEES record (for Civil Engineering)
- Diplomat: D.WRE, American Academy of Water Resources Engineers (2010 to Present)
- National Deans List and Phi Kappa Phi 1983
- Outstanding Senior in Forestry and in College of Agriculture (for Natural Resources Student - Departmental) 1983: University of Nevada, Reno
- Have received numerous fellowships and scholarships over the years, including the Dorothy D. Hoener Fellowship from the College of Forestry, spring 1993.
- Appointed Governors Representative to the Truckee River Flood Control Project Needs Committee from fall of 2017 to spring of 2019.
- Oregon State Representative for American Society of Dam Safety Officials (2008-10). Received technical trainings (2008-10) on Earthquake Engineering (3 days), Slope Stability (3 days), Emergency Action Planning (2.5 days), Conduits-Gates-Valves (2.5 days), and Soil Mechanics (3 days).
- U.S. Bureau of Reclamation: Safety Evaluation of Existing Dams (SEED) (May 2008; 4 Days).
- Federal Emergency Management Agency Training on HEC-HMS (4 days) and HEC-RAS (4 days) in reference to dam break analysis and spillway sizing (January and May 2009; GIS based HEC-RAS course in May 2010).
- Training on using PHABSIM at Utah State University (May 2006; 4 days) and training on using two-Dimensional Hydrodynamic model at an American Fisheries Society Training in San Francisco (September 2007; 2 days).
- Watershed Analysis Training Washington Department of Natural Resources Formerly Certified Level II Watershed Analyst for the Hydrology, Riparian, Sediment, and Channel Modules as well as Level I certified in several others (February 1996).
- USGS Training on Streamflow statistics and modeling at National training Center in Denver, Colorado (Spring 1990; week training).

Personal References:

1. Barry Norris: Formerly State Engineer Oregon Water Resources Department. Barry was my supervisor when I was the Dam Safety Engineer for the State of Oregon and was on a committee that reviewed my work when I developed the Water Availability Models for the State of Oregon in the early 1990's. I have known Barry for 29 years and consider him a mentor. Ph. 503-364-0484. Address: 521 Inverness Drive, SE Salem, OR 97306-9349
2. Keith Mills: State Engineer, Oregon Water Resources Department. 725 Summer St. NE, Suite A. Salem, OR 97301. Phone: (503) 986-0840. Fax: (503) 986-0902. Cell: (541)706-0849. Keith and I worked together at ODF (and can confirm employment there) and Keith replaced me as Dam Safety Engineer at OWRD and then became the State Engineer. I have known Keith for 30 years.
3. Dr. Robert L. Beschta: Emeritus Professor Forest Ecosystems and Society Department. Oregon State University. 97331. Phone. 541-737-2004. email: Robert.Beschta@oregonstate.edu. Dr. Beschta was formerly a Professor in Forest Engineering (Hydrology) and my Major Professor for my Masters and PhD and supervised me for a while in 1987-1989 while I was a faculty research assistant. I have known Bob for 34 years.

Publications:

Thesis and Dissertation Titles

- Reach scale sampling metrics and longitudinal pattern adjustments of small streams. (Oregon State University, Ph.D. Dissertation, 1998, 254 p.)
- Large Woody Debris and Channel Morphology of Undisturbed Streams in Southeast Alaska (Oregon State University, M.S. 1988; 136 p.)

Peer Reviewed Journal Articles:

- Robison, E. G.** and M. Craven. 2009. Room to Spare? A systematic evaluation of spillway sizing for existing high and significant hazard dams in Oregon. *Journal of Dam Safety* Vol. 7 (4) p. 27-33.
- Robison, E.G.** and R.L. Beschta. 1990a. Coarse woody debris and channel morphology interactions for undisturbed streams in Southeast Alaska, U.S.A. *Earth Sur. Proc. and Land*. 15: 149-156.
- Robison, E.G.** and R.L. Beschta. 1990b. Identifying trees in riparian areas that can provide coarse woody debris to streams. *For. Sci.* 36(3):790-801.
- Robison, E.G.** and R.L. Beschta. 1990c. Characteristics of coarse woody debris for several coastal streams of southeast Alaska, USA. *Can. J. of Fish. Aquat. Sci.* 47(9):1684-1693.
- Robison, E.G.** and R.L. Beschta. 1989. Estimating stream cross-sectional area from wetted width and thalweg depth. *Physical Geog.* 10(2): 190-198.

In addition, I have written over 150 technical reports as well as non-peer reviewed reports, conference papers, and technical memos (not listed) and have participated in dozens of lectures and speeches to various bodies including the Oregon Board of Forestry, Fish and Wildlife Commission, and Water Resources Commission as well as Oregon legislative committees. Other venues included keynote, invited, and submitted talks and papers for Dam Safety, hydrology, hydraulics, and water related conferences. I have spoken at venues from a few people to over 300 hundred people in attendance.