



# WESTERN CHAPTER NEWS

## INTERNATIONAL EROSION CONTROL ASSOCIATION

*Serving Erosion Control Professionals in Arizona, California, Nevada and Hawaii*

Volume 15, Issue 1  
**WINTER 2011**

## President's Message: "2010...A Good Year."

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### New Chapter Web Site!

We've redesigned [WCIECA.org](http://www.wcieca.org) with a new content management system to help make updates more timely and to allow for future expansion such as online voting, workshop registration, guest columns, member interaction and more!

Check it out today at:  
[www.wcieca.org](http://www.wcieca.org)

I spoke to a lot of Western Chapter members throughout the year and, on the whole, our members are still excited about being involved in our industry and gratified to be making a living conserving and rehabilitating soil resources. Despite a subdued economy, most folks still have their jobs and still look to the IECA and the Western Chapter to provide training and enhance networking and business opportunities. In 2010, I believe, the Western Chapter delivered industry leadership, fostered economic resilience, and maintained relevance to our members.

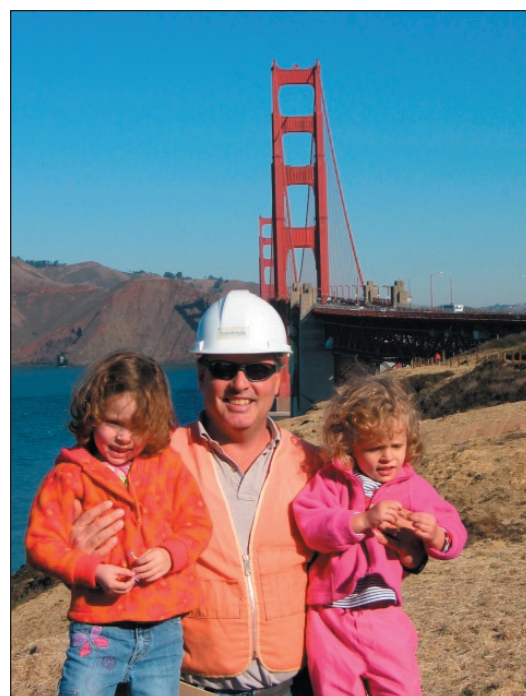
### INDUSTRY LEADERSHIP

Just as watersheds equally make and are made by the land, our members both responded to and set industry trends. In particular, several Directors and members have taken on the development of technical specifications further clarifying the term "bio-degradable" for erosion control products in order to provide testing and certification guidelines to our member States. We are also re-visiting long-accepted industry products, such as the use of malachite green as a dye in hydraulic applications, to evaluate if there are hitherto unknown impacts of such products and, if so, develop a dialogue with manufacturers about feasible alternatives.

I wish to thank our Board and our members-at-large who continue to help us keep our finger on the pulse of what's happening in our industry.

### ECONOMIC RESILIENCE

Despite gloomy economic forecasts, "The sky did not fall, Chicken Little!" I am not a trained economist, but it seems evident to me that there are several compelling factors that increase our industry's economic resilience. First, our erosion control industry is rooted in multiple economic sectors: raw materials, research and development, manufacturing and distribution, wholesale and retail sales, environmental compliance, engineering and design, consulting and contracting, and training and certification, to name a few. Secondly, our industry requires professionals and practitioners from diverse disciplines includ-



ing earth sciences, biological sciences, planning, engineering, manufacturing, marketing, and education in addition to administrative, clerical, financial, and professional services staff common to all industries. Lastly, there is an abundance of applications including construction, stormwater, mining, energy, forestry, agriculture, ecological restoration, and so on. Hence, our industry is not a house of cards but a thriving interdependent network that buffers against, and adjusts to, downturns in any one sector, discipline, or application.

### ASSOCIATION RELEVANCE

While our association has seen a drop in membership, (particularly from government sector members whose agencies may not be reimbursing membership dues as in the past), we are, nonetheless, still a strong & populous professional association. I believe it is largely because we are a chartered chapter of the IECA: an association with a clear and relevant identity that provides outstanding benefits to its members. As a chap-

ter we continue to reflect and magnify the IECA's mission in ways unique to the Western Region. That is, we provide opportunities for training, networking, consultation and enterprise among our members. We also provide an identifying name, website, and a responsive, elected Board to promulgate our association activities and chapter goals. For our steady pursuit of those goals in 2010, the Western Chapter garnered Most Improved Chapter Award in the IECA's Partner's for Excellence program! And we're not done improving...

## 2011...NEW YEAR'S RESOLUTIONS

We cannot afford to rest on our laurels in 2011. I have a couple of WCIECA items to add to my usual personal New Year's list of resolutions: you know...eat better, exercise more, don't be a jerk, etc. Please join me and consider adding a few WCIECA resolutions to your list this year.

- ☑ Up your participation by attending a Chapter training/event
- ☑ Participate on one of our Chapter committees
- ☑ Recruit a new member to join the WCIECA
- ☑ Find a deserving upper division University student for our WCIECA Scholarship
- ☑ Submit an article, case study, or editorial for our quarterly newsletter
- ☑ Don't forget about EC11 in Orlando this month!

On behalf of your Western Chapter Board of Directors, I wish all WCIECA members a happy new year!

Your President,

*Craig Benson*  
Craig Benson



**Craig Benson**  
WCIECA President  
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Redwood Community  
Action Agency  
(707) 269-2002

## Deserving Students Wanted!

### Western Chapter Announces Scholarship Available

Please let students, your alma mater, alumni association, and academic contacts know that your association, the WCIECA, is offering academic scholarships. For 2011-12 we have available two tuition-only scholarships in the amount of \$2,500 per academic year for junior, senior, or graduate school level students with a demonstrated interest in pursuing a career in the erosion and sediment control profession AND who are enrolled in a related degree-program at an accredited 4-year college or university. Since erosion and sediment control is a cross-disciplinary field, a wide variety of degree-programs will be considered, e.g., engineering, hydrology, soils, geology, forestry, environmental studies, range management, watershed, ecology, natural resources planning, etc. Students must be enrolled in institutions within the four-state area of the WCIECA, i.e., CA, AZ, NV, or HI.

Interested students may download applications from the Western Chapter IECA website [www.wcieca.org](http://www.wcieca.org) or contact Cyndi Brinkhurst at [westernchapter@gmail.com](mailto:westernchapter@gmail.com). Applicants must submit a 500-word essay, three letters of recommendation, and post-secondary academic transcripts (unofficial transcripts okay) along with the application. Applications are due on June 1 of each year preceeding the Fall academic year to which the scholarship will be used. Awardees will be notified by July 1.

Help us get the word out about this exciting opportunity! ☘

## Professional Listings

**Marvin E. Davis & Associates, Inc.** focuses on the challenging issues of the Tahoe Basin and Northern Nevada/California terrain. Our professionals provide a diverse and solid background in geotechnical engineering; specialized engineering design; erosion control services; construction and forensic inspection services and materials testing; and, regulatory and compliance issues to enable project approval. Phone 775-853-9100 or visit us at [www.mdageotechnical.com](http://www.mdageotechnical.com)

**JL StormWater Consultants, Inc.** is a State Certified SBE/DBE/WBE/UDBE Company. [www.jlstormwater.com](http://www.jlstormwater.com). Jane Ledford, Principal [jane@jlstormwater.com](mailto:jane@jlstormwater.com) or 619.922.6511. Services include: Environmental Permit Preparation, Processing and Compliance; SWPPP Preparation and Processing; SWPPP Implementation; SWPPP Inspections; SWPPP Training including the newly adopted Construction Storm Water Permit; Construction Monitoring; Biological Resources Monitoring; Cultural Resources Monitoring; Coordination with Native American Monitors; English-Spanish Translation of Worker Education Materials.

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# V CICES Panama City

## The Panama Canal Field Trip

The fifth CICES (Congreso Iberoamericano de Control de Erosion y Sedimentos), or the 5th Iberoamerican Conference on the Control of Erosion and Sediment took place at the Hotel El Panama, Panama City October 13-16. The day following the conference, I joined a group of about 60 professionals who received a behind-the-scenes tour of the new lock construction at Gatún, along the Atlantic coast. We gathered for an extremely informative PowerPoint presentation by Engineer Jose Reyes who outlined the numerous aspects of design and construction, as well as described the complex teams implementing and overseeing this extraordinary project. Currently the largest construction project in the Western hemisphere, the completed mega-project will allow for passage of larger ships.

The Panama Canal Authority (PCA) is independent of the government and is responsible for oversight of this project. As per Article 316 of the Political Constitution of the Republic of Panama – Title XIV “The Panama Canal Authority, in coordination with other government agencies, as established by the Law, shall be responsible for the administration, maintenance, use and conservation of the water resources of the Panama Canal watershed, which include the waters of the lakes and their tributary streams.” This watershed comprises 3,396 square kilometers.



New lock construction site at Gatún showing cessation of activity whenever it rains as a BMP to minimize erosion control.

There are three major components to the new construction:

1. Construction of two **lock complexes**—one on the Atlantic side and another on the Pacific side—each with three chambers, which include three water-saving basins;
2. Excavation of new access channels to the new locks and the widening of existing navigational channels; and,
3. Deepening of the navigation channels and the elevation of **Gatún Lake**'s maximum operating level.



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Several publications are produced for broad distribution every month featuring not just project progress, but also interviews with various participants such as university engineers and their students, and discoveries made during construction. One issue of the PCA's journal featured a story about the original Camino Real (the overland route used by the Conquistadores), while another featured an interview with the Chilean writer Hernán Rivera Letelier.



Group photo of conference attendees who enjoyed a behind-the-scenes tour of the new lock construction at Gatún. Far left standing: Jose Reyes, Engineer with Panama Canal Authority. Front row kneeling: Paul Gonzalez, VP Iberoamerican Chapter (3rd from left); Nicky and Lupe Araujo, President of Iberoamerican Chapter & Conference organizer (5th + 6th from left); Julie Etra, IECA Board Member & VP of International Development (3rd from right); Jesus Cardozo, immediate past-President of Iberoamerican Chapter (standing behind 5th from right kneeling).

Four levels of environmental inspectors (the Panama Canal Authority, contractor, bank, Zurich insurance) ensure environmental compliance. Water quality monitoring features the investigation, response and mitigation of hydrocarbons spills, proactive prevention through training (hydrocarbon spills), collection of used oil, and treatment of water contaminated with oil.

Chemical parameters monitored include conductivity, biochemical oxygen demand, temperature, nitrates, dissolved oxygen, fecal coliform, pH, turbidity, alkalinity, chlorides, sulfates, total dissolved solids, calcium, magnesium, total suspended solids, potassium, and sodium phosphate. ☼

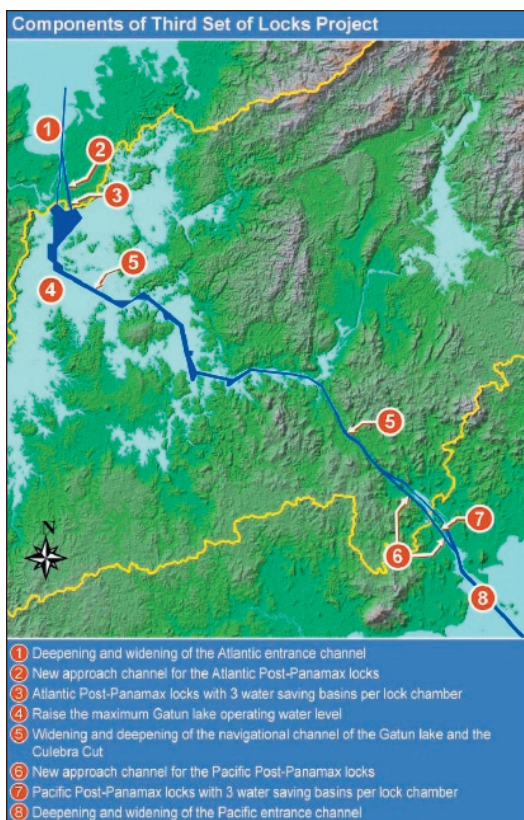


Figure 1. New Lock Construction Project Components.  
Diagram courtesy Panama Canal Authority.

## Advertise with WCIECA New Lower Rates for 2011

Did you know that a one-year ad insertion in Western Chapter News also includes placement in the [WCIECA.org](http://WCIECA.org) Products & Services Directory and rotation of your banner ad throughout the Chapter's [WCIECA.org](http://WCIECA.org) web site?

Rates are now just \$200.00/yr for full color ads and \$100.00/yr for Professional Listings. Custom ad design starts at just \$50.00.

### Reserve Your Ad Space Today!

Contact Cyndi Brinkhurst at (530) 272-2407 or [westernchapter@gmail.com](mailto:westernchapter@gmail.com) to reserve.



# Combating Soil Erosion on Easter Island

**Keynote Presentation by WCIECA Member Pablo Garcia-Chevesich at VCISES Conference in Panama City, October 2010**

Dear Western Chapter and SOIL Fund committee members,

I would like to sincerely thank you for supporting my participation at VCISES in Panama City.

Thanks to your financial support, I had the honor to give one of the four key note presentations at the conference, where more than 200 professionals and IECA members from 16 countries attended. I spoke about our land reclamation project on Easter Island, beginning with a brief history of the island, from the first settlements through the disappearance of the ancient forests and their consequences on soil erosion and land productivity, leading to the collapse of an entire civilization. The site and species selection, followed by the experimental design and selected methods, were presented followed by a discussion regarding the relevance of this project to the local tribes and humanity in general and how this small project is the base for the acquisition of more funds. The presentation ended with acknowledgment of the Western Chapter of IECA and the SOIL Fund as well as several universities and volunteers who donated time and resources to the project, giving us the opportunity to change the history of the island's land use.



Access the accompanying PowerPoint document for Pablo Garcia-Chevesich's keynote presentation at [WCIECA.org](http://WCIECA.org)

As a scientist, I am used to giving public speeches and presentations to an unfamiliar audience in both English and Spanish languages. However, this one was by far one of the best I have ever given. I was able to keep the focus and interest of a large group during the entire presentation. Also, I got excellent questions from the public at the conclusion of the presentation, as well as during the remainder of the conference. People simply approached me over and over telling me how interesting the project was and how much they enjoyed the presentation.

Throughout the 4-day conference, I had the opportunity to meet presenters from several countries, as well as representatives from private companies. As a professor, this is an excellent opportunity to develop both teaching and research opportunities. Among the presentations that I attended, I particularly liked the ones dealing with bio-engineering technologies and watershed management in general, such as those given by A. Dal Farra (Argentina), A. Martinez (Mexico), G. Mathews (Peru), M. Hermellin (Colombia), R. Madriz (Costa Rica), and A. Lister (Canada). I was also a mediator on a session during the conference. Furthermore, I finally met the leading committee of the Iberoamerican Chapter. We exchanged ideas and planned for the future. I am now on the Iberoamerican Chapter's leading committee and I am hoping to host the next CICES in Chile, with the hope that you all can make it.

In addition to the above, I publically announced the donation of 50% of the profits from my "Procesos y control de la erosión" textbook to the Iberoamerican Chapter of the IECA. As you probably know, I am about to publish such textbook in the English language as well and I intend to donate the same percentage to the Western Chapter of the IECA. This is my way to thank the IECA for giving me the chance to help the people of Easter Island.

Sincerely yours,

Pablo Garcia-Chevesich, Ph. D., [pablog@email.arizona.edu](mailto:pablog@email.arizona.edu)  
Tucson, AZ



# Countering Inconvenient Truths in Revegetation

The challenge presented to the 53 attendees assembled by the pristine frigid waters of Lake Tahoe was simple: “What to do about the findings of the AECOM/CA Tahoe Conservancy-commissioned *Revegetation Guidance Document* study published in July 2010?” [www.tahoecons.ca.gov/programs/soil/prg\\_soil.html](http://www.tahoecons.ca.gov/programs/soil/prg_soil.html)

Three years in the making and studying 26 native revegetation projects implemented in the Tahoe Basin over the past 5 - 20 years, the research data indicated:

1. Frequent failure of container plants; recommendation to go with seed.
2. Irrigation is counter-productive to sustainable native plant growth over the long-term for both container plants and for plants grown from seed.
3. Compost + irrigation is a “sure fire” recipe for inviting weed competition on to your revegetation project.
4. Plant cover is greatest on less dense soils. Yet, shrub cover is less (not more) on less dense soils; grasses and annuals predominate on less dense soils. Extra-deep ripping did not generate plant growth dividends. Save your money.
5. Most disturbingly, as projects aged, plant cover dwindled. Over time, even those projects that initially displayed healthy plant growth saw that plant growth cover fade.



New member John Coburn outlining BMPs for homeowner-implemented erosion control and creation of fire-defensible space in forested neighborhoods.

This “cold shower” of harsh reality data was served up by AECOM’s John Hunter, Ph.D. on Opening Day of the **“Native Revegetation: What Works” Technology Transfer Workshop** hosted by Western Chapter-IECA on November 8, 2010. By then all rose-tinted glasses had been stowed, the casualty of snow and sleet the day before that had descended upon the cheerful vanguard of attendees who showed up for the Field Tour hosted by John Coburn (University of Nevada Cooperative Extension), Julie Etra (Western Botanical Services), Kym Kelley (Kelley Erosion Control) and John Hunter (AECOM).



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That frigid Sunday we froze our butts off, but we also saw some cool community outreach exhibits demonstrating BMPs for homeowner-implemented erosion control and the creation of fire-defensible space in forested neighborhoods. We also toured the successful Snow Creek Stream and Wetland Restoration cooperative project, and later witnessed the failure-in-progress of a late-season lakefront erosion control project that was in the throes of being prematurely stressed by winter storms arriving 1 month ahead of schedule. You know what they say: “one learns more from one’s failures, than from one’s successes.”

“Kicking off” the workshop the next day in the warmth of the Event Center kindly donated by Curtis Aaron of North Tahoe Public Utility District, our numbers had swelled as the above-referenced challenge was issued. It soon became clear that the real value of attending these Technology Transfer Workshops is in “being there” ...

- ☑ to hear the pearls of academic wisdom extracted from state-of-the-art research being conducted both here in the U.S. and abroad;
- ☑ to having our perceived field objectives being tweaked towards objectives we previously were unaware of;
- ☑ Best of all, to hear and engage in the debates amongst attendees as to potential solutions to shortcomings of conventional seeding practices in response to challenges we have all faced at one time or another in the field. One simply never knows where one’s salvation is going to come from. And that fellow’s argument brought up a question I didn’t know existed ... let alone could answer.

## “Take Home” Messages:

It’s clear from hosting four (4) Technology Transfer Workshops addressing this Native Revegetation challenge that the key to re-establishing sustainable native plant growth in drastically disturbed soils lies in successfully re-establishing a functioning soil community in the disturbed soils that form our seed bed. That most of us are tasked with accomplishing this feat in a harsh environment only compounds the challenge. The fact that conventional seeding practices by and large conveniently ignore this reality is astounding.

The attendees acknowledged that the recommendations of the AECOM study were never represented as being the definitive word on addressing revegetation challenges. It does, however, constitute



Native turf species at North Lake Tahoe Demonstration Garden at Sierra Nevada College, Incline Village, NV.



Technology Transfer Workshop presenters: John Hunter, Ph.D. (AECOM); Timothy Flynn, Ph.D. (Primordial Solutions, Inc.) and Julie Etra, IECA Board member and VP International Development (Western Botanical Services, Inc.).



Academic Panel volunteers: Professors Mark Paschke (Colorado State University), Wally Miller (University of Nevada-Reno) and Mir Seyedbagheri (University of Idaho).

Photos by Cyndi Brinkhurst



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yet another “wake up” call that conventional seeding practices are falling short on achieving “sustainable” plant establishment. It is a living document inviting continued debate. For example: the demise of container plants may be premature. The debate that ensued recognized that if greater efforts had been made to re-establish a functioning soil community on those of the 26 study projects that utilized container plants, greater survival rates may well have resulted. In addition, the utilization of “tall pot” technology may also have resulted in greater transplant success. Similarly, we might anticipate increased survival rates of container plants if funds were available to provide interim transitional weed abatement to the transplants.

How one goes about successfully re-establishing a functioning soil community is tougher than curing the ailments of the human body. At least with a sickly patient one can usually be told where the pain is located. But with the generous volunteer efforts over the past three years of professors Mir Seyedbagheri (University of Idaho), Mark Paschke (Colorado State University), Wally Miller (University of Nevada), Michael Allen (University of California, Riverside) and Brent Hallock (Cal Poly, San Luis Obispo), it is fair to say that we have made big strides in elevating our understanding of what challenges we should be thinking about addressing, and how we might go about meeting those challenges.

Much of the success of these Technology Transfer Workshops depends upon the knowledge and experience of those professionals who attend, and upon their willingness to engage in debating the merits of often-conflicting BMPs for revegetation challenges where conventional seeding practices have long demonstrated a track record of disappointment. By and large, we have been successful at challenging those conventional practices that have never had a ghost of a chance of being successful, while retaining the conventional wisdom of those practices drawn from years of scientific research and success in the field. And by appropriately inserting into our current seeding designs the newer sciences that are demonstrating promise.

## What's Next?

Just as with “Erosion Control 101” workshops, the appetite for improving our understanding of how to better re-establish sustainable native plant growth on drastically disturbed soils is ongoing. What began as an idea to lift our IECA members’ credentials for revegetation excellence (by taking the debate format for peer review of conventional revegetation practices on the road throughout our Western Chapter regions), changed en route from Southern CA to Northern CA to Nevada. Instead of repeating the Workshop content, each successive Workshop took on the character of a *sequel* by popular demand, with many attendees following the tour and building on their knowledge garnered at each successive gathering.

We have the option to continue with this “Native Revegetation: What Works” topic throughout all our geographic regions (“Arizona + Hawaii, here we come”), adjusting the technical content to address the challenges of re-establishing sustainable native plant growth specific to those diverse ecosystems within our Chapter boundaries. Or we can address issues of “project implementation shortcomings”, versus “revegetation technologies” that has been our focus to date.

It has also been suggested that we might consider mounting a revegetation Technology Transfer Workshop specifically catering to both State and Federal agencies given the fact that (a) their expenditure of taxpayer funds currently accounts for the lion’s share of funds being expended in an industry in recession; and (b) their contract specifications for revegetation projects could do with an overhaul to better reflect state-of-the-art technologies. It would be interesting to hear back from our Chapter members who hail from the Federal and State agencies whether such an effort by the Chapter would be welcomed.

Thanks to all those parties who have participated to date. It’s been an exciting and intellectually stimulating ride. 🌱



# Training Courses, Exam Reviews and Exam Dates

## Trainings Offered by CISEC

For one and one-half day construction site inspector training modules on sediment and erosion control. Visit [www.cisecinc.org/id22.html](http://www.cisecinc.org/id22.html)

## Trainings Offered by EnviroCert

EnviroCert International provides oversight and direction for the CPESC, CESSWI, CPSWQ, CMS4S certification programs. Phone: (828) 655-1600 Email: [david@envirocertintl.org](mailto:david@envirocertintl.org). See [www.envirocertintl.org](http://www.envirocertintl.org)

The 2009-0009-DWQ Construction General Permit (CGP) requires that Qualified SWPPP Developers (QSDs) and Qualified SWPPP Practitioners (QSPs) attend a State Water Board Sponsored Training Course by September 2, 2011. In accordance with these requirements, the State Water Board has approved of CASQA's QSD/QSP training course and a schedule of these courses is being provided by CASQA's approved Trainers of Record. The State and Regional Water Boards will offer and proctor the QSD/QSP exams.

## Trainings Offered by CASQA-qualified Trainers of Record

California Construction General Permit QSD and QSP Training Courses provided by CASQA-qualified CGP Trainers of Record (CGP-ToR). This training must be completed by professionals developing SWPPPs (QSDs) or professionals implementing SWPPPs (QSPs) under the CA construction general permit by September 2, 2011. Click on the following link for a calendar of the planned QSD/QSP trainings being offered in CA.

[www.casqa.org/TrainingandEducation/ConstructionGeneralPermitTraining/CPGTrainingforQSDandQSP/tabid/208/Default.aspx](http://www.casqa.org/TrainingandEducation/ConstructionGeneralPermitTraining/CPGTrainingforQSDandQSP/tabid/208/Default.aspx)

## Exams Offered by the California Water Boards - CGP Qualified SWPPP Developer (QSD)/ Qualified SWPPP Practitioner (QSP) Exams

The State and Regional Water Boards will offer and proctor the QSD/QSP exams. See the calendars at [www.waterboards.ca.gov/water\\_issues/programs/stormwater/docs/training/1011qsd\\_qsp\\_exam.pdf](http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/training/1011qsd_qsp_exam.pdf). The exams are administered separately from the courses. There are several exams each month, in various parts of the state at the Water Board offices. Contact the Storm Water Help Desk at 1-866-563-3107.

## IECA eLearning Online Webinars

IECA eLearning Online Webinars usually are one hour in length and credit attendees 1 Professional Development Hour. See [ieca.crhosts.com/course/category.php?id=32](http://ieca.crhosts.com/course/category.php?id=32) for more details on the following pre-recorded webinars:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> A Comprehensive Stormwater Compliance and Inspection Training for Construction Sites | <input checked="" type="checkbox"/> Elements of Construction Site Stormwater Management   |
| <input checked="" type="checkbox"/> How to Write and Implement a Storm Water Pollution Prevention Plan                   | <input checked="" type="checkbox"/> Types of Erosion Processes  |
| <input checked="" type="checkbox"/> Ground Control: Stormwater Pollution for Construction Sites                          | <input checked="" type="checkbox"/> Effluent Guidelines-Insights into Compliance with EPA's New Turbidity Standards (Jesse Pritts at EC10). Free of charge. |
| <input checked="" type="checkbox"/> Basics of Revegetation For Erosion and Sediment Control                              | <input checked="" type="checkbox"/> Field Sampling and Analysis for Turbidity   |
| <input checked="" type="checkbox"/> Plan Review, Inspection and Enforcement from a Regulatory Perspective                | <input checked="" type="checkbox"/> How to Write and Implement a SWPPP - Stormwater Pollution Prevention Plan - to meet NPDES Requirements                  |
| <input checked="" type="checkbox"/> Top 10 Misunderstood Elements in Construction Stormwater Compliance                  | <input checked="" type="checkbox"/> Illicit Discharge   |
| <input checked="" type="checkbox"/> Construction Inspection Techniques That Really Work!                                 | <input checked="" type="checkbox"/> Water Harvesting  |

# Upcoming Events

**February 20-23** (Orlando, FL) *Environmental Connection 2011 Annual Conference and Expo of the International Erosion Control Association*. This is the premier educational event for the erosion, sediment control and stormwater industry. Environmental Connection combines intense, full and half day training courses with topic-focused technical sessions and the largest expo of its kind. For more information visit [www.ieca.org](http://www.ieca.org)

**February 24 & March 17** (Phoenix, AZ) Refresher *Erosion Control Coordinator*. Class will be held at AGC office: 1825 W. Adams, Phoenix, 85007. Contact Pattie Smith at 602-252-3926 or [administration@azagc.org](mailto:administration@azagc.org).

**March 22 & April 5** (Phoenix, AZ) 16 Hour *Erosion Control Coordinator*. Class will be held at AGC office: 1825 W. Adams, Phoenix, 85007. Contact Pattie Smith at 602-252-3926 or [administration@azagc.org](mailto:administration@azagc.org).

**May 10-12** (San Diego, CA) *SERCAL'S 18th Annual Conference*. [www.sercal.org/conference.htm](http://www.sercal.org/conference.htm)

**May 22-26** (Palm Springs, CA) *2011 World Environmental and Water Resources Congress*. [content.asce.org/conferences/ewri2011/](http://content.asce.org/conferences/ewri2011/)



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