WESTERN CHAPTER
International Erosion Control Association

Western Chapter News

SERVING EROSION CONTROL PROFESSIONALS IN ARIZONA, CALIFORNIA, NEVADA AND HAWAII

Volume 14, Issue 1 **Spring 2010**

In this Issue...

"Native Revegetation" at Lake Tahoe, CA

On October 26, 2009, under a crystal clear frigid blue sky, 65 enterprising souls gathered by the waters of Lake Tahoe at Kings Beach, CA to debate the merits and shortcomings of conventional native revegetation seeding practices when conducted on "drastically disturbed soils in harsh environments". Sponsored by the WC-IECA, this 2-day **"Native Revegetation: The Sustainable Erosion Control BMP"** technology transfer workshop was both (a) an educational technology sequel to what had come before in Woodland, CA (in December 2008) and in San Diego (in June 2008), as well as (b) an initial round-table critical assessment of our industry's shortcomings with regard to revegetation project implementation.

Educational Technology Transfer

To keep us on track with state-of-the-art technologies, a high-powered panel of academics had been assembled: Mir Seyedbagheri Ph.D., University of Idaho, presenting on the *Effects of Humic Substances on Soil and Plant Metabolism*; Brent Hallock Ph.D., Cal Poly-San Luis Obispo, presenting on findings from revegetation research conducted on behalf of Caltrans over the past 8 years; Mark Paschke Ph.D., Colorado State University, promoting the broader focus of re-establishing a functioning soil community in entirety; and new to the academic team of technology facilitators, Michael Allen Ph.D., University of California-Riverside, provided us with his insights on the *Functionality of Inoculating with Generic/Site Specific Mycorrhizae Inoculum*, and then went on to dazzle us with his team's current research into filming mycorrhizae fungi in situ.

Unlike a more conventional gathering of scientists being treated to a series of case studies followed by question & answer sessions, the Kings Beach interactive format was designed to first lay down a foundation of soil and plant science, followed immediately by panel discussion where attendees had the opportunity to both [a] seek clarification of what had been presented; and [b] challenge

The cobalt-blue waters of Lake Tahoe form the backdrop to an outdoor demonstration of comparative natural mulch treatments for soil stabiilization. Photo by Cyndi Brinkhurst

the conventional wisdom with reference to their own in-field experience.

Workshop Day 1

It soon became clear that the most glaring omission in many revegetation designs is a widespread failure to address the critical challenge of restoring a functioning soil community. Conventional seeding practices instead persist with implementing "band-aid" soil surface treatment BMPs that merely address short-lived erosion control objectives.

Yet once a consensus is reached over the objective to restore a functioning soil community, the means with which to accomplish this objective varied widely. Proponents of utilizing compost on their revegetation projects have met with mixed results. We learned that while compost qualifies as "organic matter", it is definitely not stable soil

See **NATIVE REVEGETATION**, on **page 4**

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President's Message

On behalf of your Western Chapter Board of Directors, I wish all WCIECA members a happy new year! There are a couple of additional Federal and State regulatory requirements affecting our industry this year that will challenge us to do and learn more! Your Western Chapter, in step with the IECA, will continue to increase our preparedness to adapt to changes in our industry and increase our collective impact. Moreover, we will continue to implement new approaches to reach out to and benefit our members in 2010.

A New Board

Your 9-member, all-volunteer Board's "New Year" really began in late July 2009 following the annual Board of Directors election. Western Chapter IECA members voted to re-seat incumbent Directors Peter McRae and me for another 3-year term. Also elected by members was new Director Pat Higgins, fulfilling a need for better Board representation from Arizona. In addition to his Board responsibilities, Pat chairs the Intra-Chapter Committee facilitating activities in Arizona, Nevada, and Hawaii. There are four new ambassadors in Arizona to help Pat with this mission. Welcome aboard, Pat and ambassadors!

The terms of the other six Board Directors are still active. The Board wishes to thank outgoing Director, Mike Alberson, for his dedication and hard work on the Board and in our industry at large.

At our first Board meeting on August 5, 2009 we reshuffled Board positions and committee chairs according to the skills, interests, and capabilities of the Directors. Per our bylaws, Board members are voted in by the general membership and then officers are appointed internally. After three years as your Vice-President, I ended up as your new President: an office that I accepted at the beckoning of past President Peter McRae. Peter did such a remarkable job as your Western Chapter President that the Board breathed a collective sigh of relief to see him re-elected to the Board and we quickly appointed him to chair the Chapter Communications Committee and assist on the Education Committee. Please see the WCIECA website to see a full listing of the Board members, committee chairs, and ambassadors at www.wcieca.org/members .

The Outlook Ahead

The outlook for your Western Chapter in 2010 is very strong indeed. There are a couple of trends worth mentioning. First, our roughly 600 Western Chapter members are a more diverse group than ever before. While maintaining our strong manufacturer and contractor base, the WCIECA increasingly represents erosion and sediment control researchers, educators, consultants, designers, and a wide variety of practitioners from the private, public, and non-profit sectors.

Secondly, many years of IECA/WCIEA government relations work, behind-the-scenes advocacy, and person-by-person education are paying off. In part to our long-term presence and persistent guiding hand, there has been a steady rise in the standards in our industry. This is particularly relevant this year as the new California Construction General Permit adopted on September 2, 2009 raises Qualified SWPPP Developer (QSD) requirements to those individuals with a minimum of 5+ years experience and specific education/licensure (P.E., R.E., P.H., C.E.H, and equivalents) and Qualified SWPPP Practitioner (QSP) requirements to those individuals with a minimum of 5+ years experience and certifications (e.g., CPESC, CPSWQ, CESSWI, CISEC). While the QSD requirements are overly stringent in my opinion, both the IECA and WCIECA have long been and will continue to be committed to facilitating or providing the training required to pass certification exams for QSP's and meet continuing education credit requirements for both QSDs and QSPs.

Craig Benson, *WCIECA President*
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There has been an increase in the Western Chapter budget over the last several years, since IECA membership and regional chapter membership registration were combined. As a result we have been able to host training workshops at reduced rates for members, offer two University scholarships, increase support to our sister Ibero-American chapter, among other activities. Your Board is acutely aware of our responsibility to implement conservative stewardship of our member-generated budget and we will continue in 2010 to utilize and grow it to meet all facets of the WCIECA's mission. Finally, we will endeavor to do this work with professionalism, commitment, and a spirit of fun representative of our members.

New Approaches

Over the last two years the Western Chapter put into practice a new strategy to benefit our members, including doing more local/regional outreach, recruiting local members as outreach partners, and offering more diverse training. We moved away from putting on a single high-end regional conference per year in favor of boosting outreach in multiple far-flung locations by staging small, localized training sessions and mini-workshops with assistance from local member ambassadors. So far this has been very effective in regions around California. If we haven't made it to your neighborhood yet, it is because we need YOU our members to partner with us, especially in Nevada, Arizona, and Hawaii, to put together workshops that address your local needs and issues. It is my goal that our members will be able to clearly identify something specific that the Chapter did that directly benefited them beyond the general member benefits.

Challenge to Members

After nearly 15 years of involvement in the IECA, it is clear to me that member benefits increase proportionally with participation. Like most things in life, the more you get involved, the more you get out of it.

I ask a lot of members why they joined the IECA and what they see as the benefits. The overwhelming response is that members most value the education and training, followed by the networking and increased exposure. However, member responses lead me to believe that many of the members only access what I would call

the first "entry level" tier of participation and benefits, while the more robust second and a third tier benefits often go unclaimed by Chapter members.

Tier 1 Participation/Benefits: These are members who go to the annual conference when it is conveniently in their region and typically attend only the third and fourth day activities. These members attend a couple of short technical sessions, take in the trade show, collect product information, and meet a couple of interesting people. After the conference they receive the Erosion Control Journal and the Chapter newsletter, but have little additional contact with the IECA and Western Chapter nor the potential clients or future partners they met at the conference.

Tier 2 Participation/Benefits: These members attend all four days of the annual conference to get more targeted training from the long-courses and often attend the field trips. They come home with conference proceedings and other technical materials. These members probably actively network and use conference to get exposure, meet potential clients, and learn what's going on around the region. Tier 2 members probably attend the Western Chapter Board meeting at the annual conference to get to know Board but have minimum involvement in Chapter planning or management beyond this. These members also receive select publications, read newsletters, and probably use Membership Directory to contact other members. They occasionally utilize the IECA and Chapter websites to get more information on what's going on around their region, to visit job postings in the career center, access technical resources, and so on.

Tier 3 Participation/Benefits: These folks have figured out how much more than meets the eye occurs at the annual conference. Such members often come the day before or stay the day after to attend supplemental receptions and select committee meetings. Such members really key into the networking benefit of membership to learn about emerging trends in the industry, develop new leads and clients, learn about interesting research and innovative application of products, etc. They use the IECA website to access multiple resources, including proceedings from past conferences, technical papers, on-line training, and the members only portal.

These members benefit beyond the annual conference by attending Chapter events. They use both the IECA and Chapter to increase their company or personal exposure via advertising, blogs, etc. At this level of full participation, members may help plan or present at an IECA and/or Chapter event. They become an ambassador, participate on a Chapter committee or working group, and may even run for a Western Chapter or IECA office.

The good news is that there is little to no monetary cost to increase your level of participation and membership benefits. All it requires is that you invest a little more time in your association as a way to increase your impact in your industry. All are welcome!

Personal Story

I know that I am not alone in maintaining a life cresting mere inches below flood stage. In addition, I live on the rural North Coast of California were many of my contemporaries are somewhat "isolationist" in culture. It is popular to say that we live "behind the redwood curtain" and lament that little of the State or Nation's fiscal resources reach us nor their regulations affect us out in the "sticks and stumps". It is almost counter-cultural to reach beyond our provincial status and it takes something pretty special to get us to do it. For me, the IECA is one of those special things: it is one of my lifelines to the outside world. I feel that it is a privilege to be a member of such a well-run professional association that is actually effecting some good in our world by addressing real problems with practical solutions.

After several years of involvement in the IECA, I became more interested in serving at the Chapter level, and in turn to act as a local ambassador. Because of my involvement, I've received technical assistance and modest monetary support from the Western Chapter to put on a local stormwater BMP workshop. Through this workshop IECA/WCIECA got a lot of exposure and I was able to help my community in a substantive way.

This workshop also raised my status and exposure in my community where it most counts to me. Also through my involvement with our Ibero-american Sister Chapter, I was invited to present at their bi-annual conference in Belo Horizonte, Brazil. These are just two examples of life/career-enhancing experiences that would not have happened had I not delved deeper into and decided to get more involved in the IECA and Western Chapter. I want to see other members begin to benefit as much as I have.

I invite each individual member to ratchet up your participation in the IECA and Chapter offerings in order to obtain this higher level of benefit. Membership is what you make it. Come on in, the water's fine and, because of good BMPs, clearer too!

Your President,

Craig Benson

We Need Your E-mail Address!

The WCIECA uses email to contact members concerning Chapter news, coming events and newsletter publication. Please make sure we have your current email address, or make sure you check the web site regularly for information on Chapter events and news. You can update your contact information at www.ieca.org and we will update our Western Chapter records.

Call for Articles

Do you have a technical article, regulatory update or event announcement you'd like to share with your fellow members? Forward them to Cyndi Brinkhurst, WCIECA Administrative Assistant at westernchapter@gmail.com and we'll publish them in the next issue of *Western Chapter News*!

NATIVE REVEGETATION, continued from **page 1**

humus, that complex of organic compounds broken down over a 50 year to 250 year period of time under largely anaerobic conditions. It is this *stable soil humus*, accounting for 35% by weight of organic matter in the soil, that is the prime foundation building block for sustainable plant growth.

Stable soil humus contains humic acids, fulvic acids fractions, and disassociated aggregates of humin fragments. Soils with high humus levels (still a miniscule part of the soil profile at 1% on "3% OM" soils) require very little nutrients to produce abundant plant growth; enjoy improved aeration and water penetration in heavy soils; benefit from enhanced moisture-holding capacity in light-textured soils; enjoy increased cation exchange capacity (CEC); are protected by buffering to prevent an abrupt change in soil pH; and facilitate the access by plants to nutrients such as nitrogen, phosphorus, and sulfur.

Compost or "Recent Organic Matter" (ROM)-derived compounds (neoformation), on the other hand, are byproducts of a short-term humification process. Their benefit lies in their ability to enhance soil quality over time with multiple, long-term application of *minimal* quantities (for practical purposes in arid environments, the application of amounts of compost in excess of 2,000 lbs per acre tilled into the soil will overwhelm most soil systems) per application. If the process of plant material breaking down takes place in an oxygenated environment (on the soil surface) then the organic residues produced by this breakdown are lost into the atmosphere as carbon dioxide. This transition process can take anywhere from 4 to 6 months, and up to several years. Where the process of plant material breaking down takes place in an anaerobic environment, however, the creation of stable soil humus over a 50-to-250 year time frame (referenced above) results.

With regard to the long-awaited resolution of the question "Are mycorrhizal fungi inoculants beneficial, bogus, or misunderstood?": Professor Allen assured us that the practice of utilizing commercially-available mycorrhizal inoculants in tandem with plantings was valid. However, in practice much still needed to be accomplished to take advantage of this technology. For example, inoculum that was "dead upon arrival" was obviously about as beneficial as seed DOA in advancing the objectives of a revegetation project. For live soil organisms, both active and passive dispersal systems were discussed along with recommendations as to how we can promote biological dispersal vectors in our efforts to attain soil community restoration.

Workshop Day 2

Side-stepping a cold front/blizzard that had threatened to prematurely bring the workshop to a close after Day 1, we began Day 2 in brilliant sunshine with Timothy Flynn, Ph.D. presenting on *Deployment of Photosynthetic Nitrogen-Fixing Biofertilizers: a potential revegetation and erosion control BMP?* Alternatively referred to as "pond scum", the technology is here to restore soil fertility, water retention, and reduce erosion without relying on the presence of vascular plants (and the water to sustain them!). We learned how it is now possible to exploit photosynthetic microorganisms (cyanobacteria) to convert solar energy to stored chemical energy, and fix atmospheric nitrogen (N_2) into usable ammonia (NH_3). The fixed nitrogen is ultimately incorporated into proteins and nucleic acids, biopolymers essential to life.

The approach for restoring soil fertility involves isolating cyanobacteria that are native to the disturbed area, mass-producing the microorganisms, and applying the mixed culture to the disturbed soil. This process establishes a self-perpetuating, living, green-manure that becomes active as and when hydrated. Once established, the restored self-sufficient microbial communities ("Biological Soil Crusts" or "BSC") creates a substrate suitable for the survival of vascular plants. In the interim, however, the BSC substrate acts as an excellent soil stabilization BMP, and one that is not vulnerable to drought conditions.

Professional Listings

Dr. Timothy Flynn of Primordial Solutions Inc. enumerating the benefits of "pond scum" in a desert environment: soil stabilization and nitrogen fixing.

Monica Finn (Caltrans) addressing field trials installed to evaluate tilling and soil nutrients for enhancing erosion control on Truckee Bypass/SR 267.

Prof. Brent Hallock's "hands-on" demonstration of erosion control mulch treatments on the beach at North Tahoe Event Center.

Ramifications of this Technology Transfer Scientific Reality:

- ☑ The driving force behind utilizing compost on revegetation projects is as much political, as it has been less-than-stellar science. However, once one realizes that the re-establishment of *stable humus* in the soil (as an enlightened goal for revegetation success) should not be confused with the insertion of ROM into the soil, one can understand why current compost-heavy seeding practices have struggled to perform as anything other than a "pillowing interface" between rainfall and the soil surface. Especially in arid environments, inundating our revegetation flats and slopes with heavy compost treatments simply overwhelms the soil ecology of these sites. This holds true even with so-called "quality compost"; when one blunders into the realm of utilizing compost ingredients that contain heavy metal-contaminated waste sludge and/or high salt steer manures, plant failure is inevitable.

- ☑ If we are to transfer our yard-waste depositories from landfills to revegetation slopes and roadside rights-of-way, we need to develop technologies that will minimize (if not eradicate) the counter-productive influences on soil and plant metabolism of placing substantial amounts of compost on to our seedbed soil. It may well be that by supplementing the application of multi-ton per acre loads of compost (ROM)-derived compounds with simultaneous applications of humic-rich organic acids, we can accommodate this mandate to divert yard-waste away from our landfills. Stay tuned.

- ☑ Alternate emerging technologies that deliver immediate soil stabilization benefits, while simultaneously setting the stage for successful revegetation as soils are biologically rehabilitated, also merit closer scrutiny. For example, the "*Growing Soil*" technologies have been bringing in successful native revegetation projects on a consistent basis for over 14 years. By emulating the successful "soil first" methodologies of the Federal Highway Administration, adoption of such technologies would revolutionize the current 2-step "erosion control + landscaping" protocols utilized by the likes of Caltrans on post-highway construction projects, resulting in million dollar cost savings and water savings. Other technologies such as the direct transfer of live topsoil might also be aggressively pursued in the interests of making the most of every scarce funding dollar available for stabilizing drastically disturbed soils via "native plant establishment, the sustainable erosion control BMP".

Shortcomings of Project Implementation:

We broached this daunting topic mid-morning Day 2 with a panel discussion organized by Julie Etra, CPESC and Principal of consultant Western Botannical Services Inc. Julie was joined on the panel by Claudia Chambers (Kelley Erosion Control, contractor), John Zanzi (EDAW/ AECOM, design consultant), Ed Kleiner (Comstock Seed, supplier) and Greg Balzer (Landscape Architect with Caltrans). The starting point for this panel discussion was an acknowledgement that at the IECA Nashville Conference in 1997 a consensus had been reached at the Contractor Forum that the agency "low bid" mandate inevitably resulted in the most expensive revegetation projects imaginable. Why? Answer: repeated funding of widespread seeding project failures. The reasons for this counter-intuitive reasoning was twofold:

- ☑ Weak contract specification writing; followed by
- ☑ Weak to non-existent supervision of project implementation.

Against these two shortcomings of contract design and implementation is ranged the marketplace reality confronting bidding contractors: "All contractors have a duty to exploit the specifications as written to his/her competitive advantage".

At stake is the comprehensive implementation of a 1st class design for a 1st class revegetation performance (in effect, "playing God") being played out in the face of Nature that is intolerant of weak links.

Equally at stake is the mandate to maintain a level playing field for all bidding contractors in the presence of a "low bid" contract bidding environment. Most are nothing of the sort, and it is small wonder that the *entire* 8-member contractor panel of established seeding contractors at the Nashville '97 conference session avoided participating in "low bid" agency-style contract bids.

Putting aside for the moment the issue of "colorful characters" who *evade* (illegal) the contract specifications versus merely *exploit* (legal, and duty-bound) such contract specifications, we were entertained with a wealth of evidence to the effect that our specification writing capabilities are seriously in need of improvement. This is an enormous topic and one that is worthy of a dedicated workshop unto itself.

Additional topics we touched upon (and debated):

- ☑ Who should bear the liability for a successful seeding performance where the seeding contractor is merely implementing the client's/design consultant's revegetation design? The seeding contractor? Really? The prime contractor? The land owner? The consultant/designer?
- ☑ Specification language that better maintains the much-sought-after level playing field for bidding contractors; that shields the landowner client from last-minute requests for seed and/or soil amendment substitutions; that protects the landowner client from defacto re-design of seeding projects by contractors.
- ☑ Problems of seed availability.
- ☑ Pitfalls/shortcomings of entrusting the supervision of native seeding project implementation to "revegetation-challenged" project engineers.

Field Trip Prior to the Workshop

Prior to the commencement of the Technology Transfer Workshop, a field trip was scheduled for the afternoon of Sunday October 25. Two sites were chosen: First, the Third Creek Restoration Project, a small tributary running through Incline Village on the north-eastern Nevada State shore of Lake Tahoe (see write-up). The second, a series of Caltrans highway construction roadside vegetation sites stretching from the Truckee Bypass (H-80 and SR 267) to cut slopes on Brockway Summit portion of SR 267.

Grateful thanks to both Julie Etra and Monica Finn (Caltrans) for hosting.

2009 Academic Scholarship Recipients

In August 2009 the Western Chapter-IECA sent out congratulatory letters to two students chosen by the Education/Scholarship Committee to be recipients of the Chapter's inaugural tuition scholarships in the amount of $2,500 per student. Applicants had to be junior, senior, or graduate school level students with a demonstrated interest in pursuing a career in the erosion and sediment control profession and had to be enrolled in a related degree program at an accredited 4-year college or university that was within the fourstate area of the WC-IECA. Since erosion and sediment control is a cross-disciplinary field, a wide variety of degree programs were eligible for consideration, e.g., engineering, hydrology, soils, geology, forestry, environmental studies, range management, watershed, ecology, natural resources planning, etc.

Angie Quintana-Jones

David Rios

Our first scholarship recipient, **Angie Quintana-Jones** hails from California Polytechnic State University, San Luis Obispo, where she is pursuing a masters degree in Agriculture with an emphasis in Soil Science. As a soil conservationist intern at the NRCS, Angela has had the opportunity to work with private farm and ranch owners who wish to use more sustainable practices on their land. Through her graduate studies in advanced erosion control and plans to become a Certified Professional Soil Erosion Control Specialist, Angela hopes to continue this interaction with farmers, ranchers and wildland managers to minimize negative impacts of their land-use management activities. Professor Brent Hallock is very kindly mentoring Angela on behalf of the WC-IECA.

Our second scholarship recipient is **David Rios**, a graduate student pursuing a masters degree in natural resources and environmental science at the University of Nevada Reno. With an undergraduate degree in biology from Sacramento State and field work experience as a hydrologic technician in South Lake Tahoe, David's current research is focused on gathering data to develop a rainfall-runoff model (EPA Stormwater Management Model) to better understand and estimate annual pollutant loading to Lake Tahoe in an effort to preserve water clarity for which the lake is famous. In addition, David is examining the effects of using a mycorrhizal innoculum on native and non-native plant establishment on constructed basins, a popular BMP for capturing stormwater runoff. David's professional mentor in this endeavor is Julie Etra, principal of Western Botanical Services, Reno.

Any WC-IECA member interested in learning more about the research work currently underway by either Angela or David is encouraged to contact them via their professional mentors at bhallock@calpoly.edu and etra.julie@gmail.com.

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New Trends Expected from Erosion Control Product Suppliers

As the saying goes, "the only constant is change". Manufacturers and distributors of erosion and sediment control products are responding to a sluggish economy, increased market share competition, and commoditization of materials and products through downsizing, consolidation, innovation, localization, and risk reduction. Regardless of the economic downturn, there are more raw material providers, manufacturers, and distributors than ever before. Key personnel from downsized companies are not re-tooling into other professions, but are rejoining the fray with entrepreneurial vigor. In order to overcome reduced profit margins from, and simultaneously capitalize on, the glut of off-shore materials, both established manufacturers and start-up manufacturers are constantly upgrading old products, adapting them for new uses, branding innovative niche products, and selling them more directly to customers.

Trends among distributors include: providing products from more than one manufacturer (Ssshhh…don't ask, don't tell), utilizing more substitute products to provide competitive quotes, and providing value-added local services such as consultation. Further, in order to reduce risk distributors are keeping on-hand inventories low.

By the same token, consumers of erosion and sediment control products are becoming more field savvy, able to discern between the relative performance of competing products, demanding of quick delivery, and fiscally tighter.

There is close interdependence between the manufacturing, distribution, consulting, and contractor sub-sectors in the Western Chapter. Part the long-term success of the IECA as a professional association is the fact that it is rooted in this reality. Our membership has wide representation from all sectors and we talk to each other, a lot. Below are some of the trends that will affect us and will keep us talking in 2010:

Material Quality issues

Manufacturer/Supplier-branded goods versus generic goods create a fundamental struggle in the market place where branded goods command premium prices for premium performance, while generic goods appeal to cost-conscious customers. The trade off between price and performance becomes particularly apparent when economic conditions are sluggish and customer brand loyalty tends to waver. Inevitably, less savvy customers will be unable to resist the siren call of the cheaper "or equal" substitute products. Certainly, while more seasoned customers will scour the marketplace for value-based solutions, they know well the adage: "No one ever regretted buying quality" especially when one is dealing with Nature.

Supplier Consolidation

Buyouts between both manufacturers and distributors are causing territory boundaries between distributors to become blurred, resulting in more competition for the same customer base.

Such consolidation invariably opens the door to new suppliers and their distributors to enter markets that were previously off-limits, forcing the pre-existing suppliers to seek an ever-greater number of distributors and resellers to maintain their original sales volume for that region.

Chris A. Marr, CPESC
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Supplier Location

Suppliers may increase efforts to be sourced closer to the manufacturing plant to mitigate fluctuations in transportation cost of shipping product to the distributor and distribution points.

New and Existing Relationships

Existing relationships with suppliers, distributors, and customers will be extremely important in 2010 due to higher anxiety in an economic downturn. Failure of individual projects can have a ripple effect causing shortages, stock outs, and lost sales.

Key Regional Differences

Product specialization will increase in 2010 versus mass production to secure profitable margins higher up the supply chain moving away from the commodity profit margins. Niche marketing will be on the rise to meet the specific needs of the customer offering higher margins and resistance to profit erosion due to increased competition.

Inventory

Reduced finished goods inventory will be available and immediate response time to orders will lengthen. This will require small distributorships and customers to plan ahead to reduce project delays. Manufacturer inventory costs will increase correspondingly due to longer residence time of products in the warehouse.

Summary

All industries and organizations adjust the way they conduct business in response to economic and market trends. The slower the economic recovery, the more important it becomes to innovate, drive the market internally, and focus on long term goals. Communication, network building, and technical knowledge are important at all times in any market. IECA and the Western Chapter provide the opportunity and time to stay technologically current and build these relationships through conferences (EC10 Dallas), workshops (Re-vegetation Tahoe), and various regional and national committee activities.

The silver lining of the current economic downturn is that it provides us with the commodity of time to build collaborative relationships between manufacturers, distributors, and customers and innovate like mad to proactively usher in our own recovery.

Upcoming Events

March 2010

March 11-12 (Phoenix, AZ) *Erosion Control Coordinator Training*. This comprehensive 16-hour training class objective is to give the participant a knowledge base on storm water pollution, regulations and best management practices (BMPs). The course will include potential storm water pollution sources and effects associated with construction activity.

The ADOT guidance manual for Erosion Pollution and Control will be used along with course handouts. Certificates will be issued at the end of the class. These certificates along with your experience must be submitted to ADOT and approved in order to be listed as the Erosion Control Coordinator on the project.

See http://www.azagc.com/pdf/2010/2010-ERCC-16hr-Schedule.pdf for more information and registration.

March 24-25 (Pasadena, CA) *CISEC Training Modules and Certification Examination*. For additional information, contact:
CISEC, Inc.
Phone: 720-235-2783
Email: cisec_inc@yahoo.com

April 2010

April 21-22 (Phoenix, AZ) *Erosion Control Coordinator Training*. See March 11-12 date above for details on this event.

May 2010

May 19-20 (Phoenix, AZ) *Erosion Control Coordinator Training*. See March 11-12 date above for details on this event.

June 2010

June 16-17 (Phoenix, AZ) *Erosion Control Coordinator Training*. See March 11-12 date above for details on this event.

Storm Water Credential Programs

The revised California Construction General Permit has outlined two levels of certification within the Storm Water Compliance industry. The two distinctly different categories they have outlined are: Storm Water Inspectors (practitioners) and Storm Water Designers. The distinct delineation is that inspectors should not attempt to be SWPPP designers. In effort to help our membership base better understand the various credential programs available, we have provided the following brief summary:

Storm Water Inspector Programs (Qualified for Inspection only)

Certified Erosion Sediment Storm Water Inspector (CESSWI)

Organization: CESSWI, LLC, a program of EnviroCert, International, Inc. EnviroCert is the umbrella organization of CESSWI, CPESC, and CPSWQ

Requirements: Three (3) Years experience overseeing land disturbing activities governed by the EPA and the Clean Water Act, Two (2) Years experience with a qualified degree. Documentation of completed Storm Water courses. Professional Experience Profile for each job. Three (3) Professional References. Pass Exam with a score of 70% or higher

Cost: $135 Application Fee IECA or SWCS members / $165 non-members. $60 Exam Fee. Review Workshop fees vary $165 to $265 (1 day).

For more information visit www.cesswi.org

Program: *Certified Inspector Sediment and Erosion Control* (CISEC)

Organization: CISEC, Inc.

Requirements: Two (2) Years Storm Water Inspector experience. Documentation of completed Storm Water courses. Three (3) Professional References. Pass Exam with a score of 75% or higher.

Cost: $130 Application Fee / $250 Workshop (1 and 1/2 day) optional

For more information visit www.cisecinc.org

Storm Water Designer Programs (Qualifies to Design and Inspect)

Program: Certified Professional Erosion and Sediment Control (CPESC)

Organization: CPESC, LLC, a program of EnviroCert, International, Inc.

Requirements: Seven (7) years professional experience. Three (3) years professional experience with a qualified Bachelor Degree. Professional Experience Profile for each job. Four (4) reference letters. Pass Exam with a score of 70% or better (4 hours max). CPESC-IT (IT= "In training" and is also available on case by case basis)

For more information visit www.cpesc.org

Program: Certified Professional Storm Water Quality (CPSWQ)

Organization: CPSWQ, LLC, a program of EnvrioCert, International, Inc.

Requirements: Six (6) years storm water quality professional level experience with a qualified Bachelors Degree. Four (4) years storm water quality professional level experience with a qualified Graduate Degree. Two (2) years storm water quality professional level experience with a qualified PhD degree. Or Attain a CPESC credential, once approved to test for CPSWQ, pass the cross-over exam.

Cost: Visit www.cpswq.org for more information.

Robert Patterson, CPESC, *WCIECA Director*
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Discovering New Frontiers at EC10

I'm just back from EC10 and want to congratulate the IECA Conference Planning Committee, IECA staff, and host South Central Chapter for putting together an exciting, Texas-sized 41st Annual Environmental Connection conference. The Anatole Hilton set in the Dallas' Market Center provided a state-of-the-art conference and trade show facility for EC10. While attendance was down to around 1,569 registrants compared to 1,855 participants at EC09 in Reno, the conference still provided the wide variety of full-day training courses, short sessions, field trips, certification exams, special events, networking opportunities, and trade exposition that make the IECA's annual conferences so worthwhile.

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I've been coming to IECA conferences for the last 15 years and, contrary to my expectation of being served a large helping of "same-old, same-old", I've walked away with a better understanding of regulatory changes, as well as a couple of new knowledge "nuggets" mined from technical sessions that I can't wait to try out. And, as always, I come back with a replenished quiver of business cards, contacts, and potential opportunities.

Behind the scenes at EC10, the IECA Board of Directors convened, multiple IECA committees met, and individual Chapters gathered to adopt strategies and take actions to increase the benefits of our members at the international, regional, and chapter levels. The Western Chapter represents between 15 to 20% of the total IECA membership. Only three member of the Western Chapter Board of Directors were able to attend EC10, but between us we were able to represent our chapter at six IECA committee meetings, our annual Chapter meeting, and at our sister chapter (Ibero-American) meeting.

Also of immense value to me, were the multiple conversations I engaged in (or eavesdropped on) in the Sediment Basin networking area. I was able to touch base with some of the 48 Western Chapter members who attended EC10 and got input on how to better serve our members. Featured entertainment in the Sediment Basin included a resurrection of industry-themed songs from The Sons of the Hydroseeders with Mike Harding, Jimmy Eanes, and Phil Handley playing "Don't Silt Fence Me In" and other favorites to the delight of the audience.

Aside from the general impressions above, I want to share what I think are some of the most important conference highlights and decisions taken by the Board and committees.

Committee Actions

Western Chapter Board members and ambassadors attended the FAST, SOIL, Chapter Advisory Committee, Membership Committee, International Development Committee, and Government Relations Committee. Western Chapter members Mike Chase, Sandy Mathews, and Julie Etra who are IECA Board members attended the other committee meetings.

The most significant action taken at EC10 was taken by the Board of Directors in response to two years of work and recommendations by the International Development Committee. The IECA is contemplating restructuring into two separately headquartered Regions and on its way to living up to its name as a truly international association rather than being a North American association with affiliate chapters

Winding Down/Up at the Sediment Basin
From left, Dr. Timothy Flynn, CO (presented a 1-day technical class on Soil Microbiology), Jack Greening, Jr., CA and Julie Etra, NV, both WC-IECA members and presenters at EC'10.

EC10 Expo Floor
Dan Waldman, Erosion Control Magazine, reaching out to the world on erosion control issues

from abroad. The transitional details are still in the works, but new structure will basically work as follows:

Region I is comprised of the Americas (North, Central, and South America) and Europe and will be administered from Denver, CO.

Region II includes Oceana (the Pacific Islands except Hawaii), Australia, China, Malaysia, India, and Africa and will be administered through Australia.

Members will pay IECA region and chapter dues to the Region that they are in. This means that for us in Region I everything will remain status quo: Region II members, however, will now be administrated through Australia.

In the future, when a given Region II chapter such as India or China achieves a certain level of independent function they may elect to become an autonomous region.

In essence the IECA name is being branded and franchised for dynamic regional implementation. This gives each region the autonomy, efficiency, and local focus they want while maintaining the mission and upholding the standards of the IECA.

There will be a new international IECA Board with representatives from both Region I and Region II. Each region will have their own Board of Directors. For Region 1, our current Board will continue to be in place.

Regions will have their own conferences and there may, in time, be a revolving international conference encompassing both Region 1 and Region II.

Additional Member Benefits

The Western Chapter held its annual membership meeting at EC10. Among the many topics discussed, were three ways the Chapter can increase benefits to our members.

- ☑ **Affordable Advertising**
  A decision was taken to reduce the cost of banner ads and professional listings on the Western chapter website to make advertising your business and services more affordable. First time advertisers can now have a banner ad for one year for $100. A featured professional listing will be only $50 in 2010.

- ☑ **Discounts on Erosion Control Products**
  The Chapter is going to work with IECA to see how many erosion and sediment product manufacturers would offer a standing 10% discount or rebate to IECA members.

- ☑ **Association Health Care**
  The Chapter is also going to explore how IECA could potentially leverage our membership numbers to obtain high quality low cost health insurance.

Sister Chapter News

The Western Chapter continues to foster our relationship with and support our Sister Chapter, the Ibero-American Chapter. The IA Chapter includes all of Latin America as well as Spain and Portugal. The IA Chapter is still in early stages of development but is gaining traction and already has 20 new members from twelve countries and counting. IA Chapter members, including Angel Menendez Ph.D and Gustavo Salerno P.E., CPESC from Argentina as well as Kelvin Reyes M.S. and Julio Alegre Ph.D. from Peru were technical session presenters at EC10. For more information on our Sister Chapter go to the Iberoamerican home on the IECA website www.ieca.org/chapter/iberoamerican/iberoamericanhome.asp.

Sustenance for a Sustained Contributor

From left, Ibero-American Chapter member Gustavo Salerno (winner of Sustained Contributor Award), Buenos Aires; Craig Benson, Western Chapter President, CA; Jorge Fort, Valencia, Spain.

Ibero-American Chapter IECA Conference - The IA Chapter hosts its own conference every other year. In 2006 it was held in Buenos Aires, Argentina and in 2008 it was hosted in Belo Horizonte, Brazil. The next IA conference will be held from April 13-15, 2010 in Panama City, Panama. Western Chapter members with good Spanish skills should consider attending.

Sustained Contributor Award – IA member Gustavo Salerno, P.E.,CPESC garnered one of the IECA's highest honors at EC10. The Sustained Contributor Award gives honorable recognition to an esteemed IECA member who has made outstanding contributions to improve the erosion and sediment control community over a sustained period of time. After the Western Chapter meeting we went to the IA Chapter meeting to sing a rousing chorus of "For He's a Jolly Good Fellow" to Gustavo.

There are many more noteworthy actions taken, events, and learnings to share from EC10. More news will be forthcoming about EC10 through Erosion Control magazine, ESCN TV, and other IECA media. The conference proceedings are also available through the IECA website www.ieca.org.

Innovations in Soil Bioengineering for a Creek Restoration Project in Lake Tahoe, Nevada

Prior to the commencement of last year's Kings Beach "Native Revegetation" Technology Transfer Workshop, a field trip was scheduled for the afternoon of Sunday October 25, intended to bring us face-to-face with the harsh realities of the revegetation challenges we would be wrestling with over the next 48 hours. In addition, the excursion in the fresh winter air was designed to promote a sense of camaraderie amongst attendees that would overcome any potential reticence about speaking one's mind when debating conventional seeding practices. With hindsight, we succeeded on the second objective, but fell short on the first objective as Third Creek proved to be a shining example of "doing things right."

Third Creek is a small tributary to Lake Tahoe running through Incline Village, Nevada. A reach of the creek flows adjacent to a dog and soccer park and consequently sees a lot of public use. Prior to restoration efforts, this heavy human traffic had a severe impact on riparian vegetation causing significant bank erosion, deteriorating stream stability, and numerous barriers to fish passage. The climate of the area is somewhat extreme with a short growing season, often resulting in challenging constraints for restoration projects.

ENTRIX, on behalf of the Army Corps of Engineers, Nevada Department of State Lands and Incline Village General Improvement District (IVGID), spearheaded the effort to restore the creek and improve the recreation access in the area. Western Botanical Services Inc. (WBS) was subcontracted by ENTRIX to develop the revegetation and restoration plans which included a landscape berm to screen and protect the creek from over-use by the public. WBS also developed unique soil bioengineering specifications using vegetated coir logs (green logs) for live toe-of-bank stabilization, requiring close coordination among designers, growers, and the contractor(s) to ensure timely and successful production and establishment within a short construction window.

Methodologies Employed:

GREEN LOGS

The design team examined various options for bank stabilization, toe protection, and screening, initially considering use of open-weave coir erosion control blankets with wetland plugs for the inset floodplain and hard armoring with logs, root wads, and rock for toe protection. It was essential to accomplish rapid vegetation establishment since the creek by-pass pipe would only function during construction, with the flows returned to the restored channel by the fall of 2009.

It was agreed to replace some of the hard armoring with 520 feet of the more flexible vegetated coir log. With the help of IVGID, a grower close to the project site (Al Pombo Inc.) was selected and was provided with specifications and wetland plugs. Part of the grower's contract included the delivery of the logs to the project, an approximate 45 minute drive. WBS, in conjunction with Ziegler Engineering out of Healdsburg CA, provided assistance and oversight during the six-week growth period.

Planting began on July 13 with locally grown wetland plugs (Carex nebrascensis and Juncus balticus) planted on one-foot centers through the 12" diameter logs. The green logs were then top-dressed with topsoil produced by Pombo from local materials and seeded with a mix almost identical to what was used elsewhere on the project site. The green logs were irrigated with a duel system by flood irrigating the pond and with drip emitters placed on one-foot centers over the plugs. The plugs initially went through transplanting shock in 95°plus F mid-summer heat but recovered a few weeks later, with newly germinated seedlings also being inserted to complement the recovery.

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Figure 1

Planting coir logs July 13 at Hobart Mills, CA with Ziegler Engineering.

Figure 2

'Green logs' August 31 prior to harvest and transport to Third Creek.

Figure 3
Placement and securing green logs.

Figure 4
Sod harvesting Sierra Valley California, elevation 4,850 feet.

Figure 5
October 14, almost a month following completion and several fall storms.

After a mere six weeks of growth roots had grown through the logs, protruding from the bottom, and were deemed ready for placement along the channel. A creative system of chains and hooks were used to lift the logs for transport on a tractor trailer. Burdick Excavating, the General Engineering Contractor used several pieces of modified equipment to lift and extend the logs over the banks and place in pre-excavated trenches. The logs were irrigated in place until well established, after the release of the creek into the restored channel.

WETLAND SOD

Coincidentally, in the process of selecting a grower, the design team became aware of Al Pombo's ranch in Sierra Valley, California. WBS examined a chunk of sod harvested from the project site to evaluate species composition and suitability as engineering material. Following this initial evaluation WBS conducted a site visit to the ranch in Sierra Valley and determined that large areas of the ranch were dominated by healthy, vigorous, and weed-free wetland vegetation perfectly suited for floodplain restoration. The team agreed to replace the erosion control fabric and wetland plugs with this more suitable and effective material. IVGID again acted as the material supplier, negotiating a price for harvest and delivery to the site. Pombo was able to fabricate a wetland sod cutter that produced relatively uniform 2' X 2', 40 lb. squares. These were transported to the site on palettes, in layers separated by visqueen to ease handing. Prior to sod being delivered, Burdick hand-graded, prepared, and watered the floodplain soils to ensure that correct elevations had been established and to expedite planting. Some minor hand work was required to adjust the grading according to the varying depth of the sod squares. Following placement Pombo's native topsoil was used to seal the edges and fill any voids. No fertilizers were used.

LANDSCAPE BERM

The main purpose of this feature was to screen the restoration project and to serve as a deterrent to pedestrian traffic. It was also designed to provide an aesthetic component to the project and habitat for wildlife, particularly birds. This feature also made use of excess excavation which helped balance the earthwork and save project costs. Native species selected included Woods' rose, serviceberry, Sierra currant, chokecherry, redosier dogwood, and aspen. Some of these species were also planted along the creek. All were planted with slow-release feeder pack fertilizers with mycorrhiza and will receive drip irrigation for a few years until well-established.

CUTTINGS, POLES, TRANSPLANTS, AND MORE

More typical soil bioengineering techniques were used throughout the project, including willow poles and cuttings. Riparian trees (willows and alders) moved during the earthwork were pruned and re-planted as salvaged root wads. Root wads of other trees removed during construction were used in the channel. A stockpile of dead sod on an adjacent IVGID property was cleaned up by removing the plastic reinforcement netting and the remaining topsoil was top-dressed over channel banks, which were then seeded with a mix of native forbs and graminoids and covered with biodegradable blankets.

A Successful Green Project

Although the ENTRIX contract was not approved until January 2009, 1,500 feet of restored new channel was completed on September 18th, three weeks ahead of schedule and a record for Lake Tahoe where, due to complicated regulatory processes, projects can be slow to be permitted, much less built. This truly 'green' project employed local contractors in a recession year. Native wetland plugs, seed, sod, trees and shrubs were provided by local growers and suppliers, reducing the carbon shipping footprint. Importation of material was reduced by recycling stored sod and using rock stockpiled on a lot next to the project area Only the coir logs, manufactured in India, had a long journey.

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