



International Erosion
Control Association

Western Chapter News

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

Volume 12, Issue 1

Winter 2008

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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 Robert Patterson, WCIECA communications director at robert.patterson@pulte.com and we'll publish them in the next issue of *Western Chapter News*!

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.



EarthSavers Products representative Andrew McGann and WCIECA Board Member Craig Benson demonstrating the fine points of straw wattle installation.



Field demonstrations at McDaniel Slough in Arcata, CA.

Construction Site Stormwater Management Workshop a Success

The Western Chapter of the International Erosion Control Association co-sponsored the Construction Site Stormwater Management Workshop on November 2, 2007 in Eureka, CA. The day long workshop for construction site workers included morning and afternoon sessions and a barbecued lunch hosted by the WCIECA.

The morning session began with an opening address by a Humboldt Bay Harbor, Recreation, and Conservation District Commission member, followed by the "ABCs of BMPs" presented by WCIECA's vice-president Craig Benson, a presentation on BMPs for roadway and driveway construction, and a panel discussion between local city and county staff on "Local Ordinance Compliance".

In the afternoon, attendees had the choice of either attending a "Construction Site Stormwa-

ter Manager Training" presented by WCIECA member Robert Patterson, or participating in a field trip, lead by Craig Benson and Andrew McGann, where they learned 'hands-on' select BMP installation methods.

The workshop was a success, with 91 attendees and a lot of positive feedback including the following response "I'm very grateful for your continued work in educating local practitioners (like myself) on topics such as construction site stormwater management. Thanks!"

The North Coast Stormwater Coalition was very pleased with the outcome of this event and hopes to follow-up with more education/outreach to the construction industry in the future. ☁



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President's Message

Change Is In The Air, and It's Not Just the Warming Temperatures As We Head Into Spring Season!

We're coming off two successful "Partners for Excellence" award years: 2006 where Western Chapter was awarded "Top Chapter" status by winning the Rick Granard Award of Distinction; and 2007 where we again "over achieved" along with a mob of fellow "over achieving" Chapters and settled for the Membership Development/Services Award of Achievement. That means that as a Chapter we excelled at being our region's resource for people who share a common concern for the prevention and control of erosion. We connected, educated and developed our erosion and sediment control community extremely well. In both years, we attained a better than perfect score!

Where to go from here? Answer: Transcend our 2006/2007 performances by performing "above and beyond" the Rick Granard Award scoring box, while simultaneously seeking out avenues to help our sister Chapters attain their goals.

The success of the Western Chapter-IECA is attributable to the combined vitality of its members and to the vision and management capabilities of its volunteer leaders. Being the largest Chapter – 845 members at last count – provides you with access to 844 professionals with varied expertise and energy to make things happen for your business. It also provides the financial muscle to make things happen for Chapter activities. Yet the real secret to our success is the individuals who temporarily put aside their careers and pitch in to engage in activities such as organizing training sessions or regional conferences in far-flung locales. Such activities, where even moderate success is rewarded with a high satisfaction buzz, are invariably a refreshingly far cry from what we do on a daily basis. If variety is the spice of life, community involvement is the soul or heartbeat of life, and the maxim that "one reaps largely what one puts into a common cause benefiting all" is proven over and over again. Above all, we have fun interacting and working together.

We intend to again benefit from successfully blending amateur enthusiasm at the Chapter Board level with the assistance of our part-time Administrative "powerhouse" in the form of Janice Bridge and incoming Suzanne Ullensvang. The realization last year of what had been a long-time goal of prior Boards proved to be even more beneficial than initially dreamed about. Board members will continue to work as hard as before, but the presence of Janice has both freed up Board members to design training courses, contribute articles to media publications and take on speaking engagements in conjunction with other organizations, as well as provide a more professional polish to the way we stage our workshops and regional conferences.

What's in it for you?

"Steering Course Adjustment #1": the Board wishes to boost our "EDUCATIONAL OUT-REACH" efforts to further enrich our members. The idea is to have more workshops and training sessions in more far-flung locations than ever before. This time last year we were decompressing from the adrenaline rush that comes with successfully staging our first Chapter conference in Hawaii – the Ahupua'a Conference – on the beach in Honolulu. IECA's EC'07 Environmental Connections followed soon after in our Chapter



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Calendar of Events

February 2008

February 18–21 (Orlando, FL) IECA's *Environmental Connection 2008*, Coronado Springs Resort, Orlando, FL. For more information, visit www.ieca.org.

February 25–27 (Long Beach, CA) CWEA *Annual P3S Conference and Exhibition*. Contact www.cwea.org.

February 27–28 (Los Angeles, CA) *Landscape Industry Show*. For more information visit www.clca.us/lis

March 2008

March 5–6 (Fort Collins, CO) The 18th Annual *High Altitude Revegetation Workshop*. For more information, visit www.hightitudereveg.org or contact Carl Mackey 970-484-4999 or carl.mackey@wgint.com

March 10–13 (San Diego, CA) 18th Annual *AEHS Meeting and West Coast Conference*. Mission Valley Marriott, San Diego, CA. For more information visit www.aehs.com. Brenna Lockwood 413-549-5170 or brenna@aehs.com

March 11–15 (Las Vegas, NV) *CONEXPO-CON/AGG*. For more information visit www.conexpoconagg.com

March 14 (Burlingame, CA) CASQA Meeting, featuring Caltrans Research and the CA Construction Storm Water Permit. Visit www.casqa.org

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April 2008

TBD (San Diego, CA) *Western Chapter IECA Seminar/Debate: "Native Revegetation: What Works"*, including ECOTECH Training Workshop (Tentative). Contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

April 16 (San Diego, CA) *Western Chapter Board of Directors Meeting*. Contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

April 3–May 2 (San Mateo, CA) *StormCon Regional Workshop*. Visit www.stormcon.com or contact Steve Di Giorgi 805-682-1300 x129 or stevedg@forester.net

May 2008

TBD (Modesto, CA) *CA-SWCS Annual Conference*. Visit www.swcs.org

May 8–9 (Phoenix, AZ) *Western Chapter IECA Training Workshop: "Native Revegetation : What Works"* (Tentative). Contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

May 9 (Ontario, CA) *CASQA Meeting, featuring Storm Water Pollutants Source Control*. Visit www.casqa.org

May 22–23 (Las Vegas, NV) *Western Chapter IECA Training Workshop*: (Tentative). Contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

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region at Reno, NV. What began as a proposal voiced at the EC'07 Chapter meeting in Reno, became the Fairfield Suisun training workshop by August 22. There were approximately 100 participants, sufficient booths to raise \$2,000, and tri-tip sales following the EarthSaver-sponsored barbeque to raise monies for the Scholarship Fund.

This past November and December, the Chapter joined with two entities in hosting training conferences. For the November event, the Chapter partnered with the North Coast Stormwater Coalition in Eureka, CA, to stage the 1-day Construction Site Stormwater Management Workshop. The day-long workshop for construction site workers included morning and afternoon sessions and a barbecued lunch hosted by the WC-IECA. Board members Craig Benson and Robert Patterson led the effort with both auditorium presentations and a "hands on" field trip session covering select BMP installation methods. Andrew McGann traveled up from San Diego, CA to assist with the field demonstrations.

For the December 4-5 event, WC-IECA experimented by playing a "passive" co-sponsorship role in staging the Land Development West conference presented by ZweigWhite at the up-scale Hotel del Coronado located across the Bay from downtown San Diego, CA. Current WC-IECA President Peter McRae manned the Chapter's trade show booth while board member Mike Alberson gave a well-received presentation on Advanced Treatment and Erosion Prevention. In addition, long-time Chapter member Mike Harding delivered the Special Luncheon Address on post-fire mitigation erosion control efforts currently underway on the many recent Southern California fires.

We hope to continue with these grass roots "joint venture" educational efforts throughout the far reaches of our Chapter regions as 2008 progresses, relying to a large extent upon our growing team of "ambassadors" for direction as to educational content. Ask, and you will receive. Size of gathering is not as important as enthusiasm to learn. We hope to accomplish this "educational outreach" undertaking in tandem with "Steering Course Adjustment #2": the Board wishes to boost our "INVOLVEMENT OUTREACH" efforts to further enrich our members. That is, we hope to challenge YOU to become involved in Chapter activities by bringing the action to you. This may be accomplished initially via the educational outreach efforts coming to your distant town. It may also be accomplished by local informal gatherings, being initiated by YOU. For example, discussion over a beer on any Thursday evening as to a) what educational topics you may wish to have addressed at your upcoming regional training seminar, or b) inquiring whether one should stop off in New Zealand for a week when flying Down Under to attend an Australasian Chapter conference.

To facilitate this effort, we are in the process of launching our Ambassador Outreach program: individuals prepared to volunteer their time to become lightning rods for ideas, to be a sounding board and to coordinate member activities, and to provide feedback on what is being done well and on what is lacking. This will effectively increase the "one-on-one" communication of ideas in an effort to enhance the Board's effectiveness at responding to the somewhat elusive question: What activities do our members most want to see being staged by the Chapter?

Last, Western Chapter has committees up the wazoo: any member can become active in communications, staging our conferences/workshops, education outreach, interaction with similar-interest organizations, membership, contractor liaison, and now international outreach. Simply let us know of your willingness to lend a hand by calling Intra-Chapter Activities Chair Mike Broadwater at (951) 788-6028; Cell: (714) 749-0070.

As to educational content, we continue to be tasked by the seemingly-endless demand for training on the "A,B,C's of erosion control/storm water basics". Obviously, we can accommodate this demand at whatever level you request. In addition, "Steering Course Adjustment #3" is aimed at inserting "GREATER VARIETY" into our curriculum.

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For starters, I would like to see our Chapter taking a shot at launching our members into the 21st Century with regard to native plant revegetation technologies that have a ghost of a chance at being successful in the varying harsh environments encountered throughout our Chapter's diverse regions. Project implementation – "from specifications to bond release" – is another topic that could use some brainstorming discussion. You probably have dozens more topics you would like to see discussed. Please tell us what they are.

Mixing up the content of our educational sessions might also be complemented by the insertion of a more challenging interactive format for presenting our training workshops. Interest has been expressed to transcend the current "technical presentation + questions" format with technical programs that consist of "technical presentations + forum debate" for the purpose of enhancing in-depth understanding. Nothing like a little debate to challenge the industry myths/truths that permeate our culture.

And with all this newfound Chapter power comes new responsibilities. There is the responsibility to assist fledgling Chapters both within the United States and offshore to meet their goals. To date we have adopted the Iberoamerican Chapter as our Sister Chapter, financing International Development chair Julie Etra's attendance to their 2006 conference in Argentina where she delivered a technical paper in her newly-learned Spanish language, and gearing up to possibly expand on this sponsorship this coming year. Yet Chapters in Australia/New Zealand, Bangladesh, India, China, and Europe could all benefit from what Western Chapter has to offer, just as we benefit from interaction with them.

Change is obviously in the air with the arrival of Russ Adsit, our new Executive Director at the helm of IECA. Our fellow Western Chapter members volunteering their time on the IECA Board of Directors have been working tirelessly over the past few months to expedite a smooth transition, as well as to address opportunities for change. They may well need a helping hand. All in all, exciting times. As we welcome Mary Larsen, Chris Marr and Robert Patterson to our Western Chapter Board, it is with much appreciation that we farewell Alan Joaquin, Sandy Mathews and Gene Steuben rotating off the Board. They may run, but they cannot hide, for we invariably call upon past Board members for assistance on future projects. Note that Sandy Mathews, a past-President of our Chapter and whose inexhaustible passion for the welfare of IECA and implementation skills are every volunteer organization's dream come true, has already demonstrated her willingness to up the ante of her volunteer service by offering herself as a candidate for the IECA Board. Please make the effort to vote next time those elections come around.

Looking forward to meeting as many of you as possible over the coming year. ☺

Professional Listings

Western Botanical Services, Julie Etra, Owner. 775-849-3223, 775-849-3303. WBS provides consulting services for design of erosion control, wetlands and riparian areas as well as botanical surveys and wetland delineations. Construction management services are also available.

CPESC/CPSWQ/CESSWI Exams and Exam Reviews

NOTE: To sit in any of the certification exams you must have approval from CPESC, Inc., or CESSWI, LLC. Approval is gained through the application process available at www.cpesc.org.

July 26 (Tuscon, AZ)

CPESC Exam Review
CESSWI Exam Review

July 27 (Tuscon, AZ)

CPESC Exam
CESSWI Exam

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June 2008

June 22–25 (Denver, CO) *ASTM Soil & Rock June 2008 Committee Week*. For more information visit www.astm.org

July 2008

July 16 (Conference Call) *Western Chapter Board of Directors Meeting*. For more information, contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

July 26–30 (Tucson, AZ) *SWCS Annual Conference*. Visit www.swcs.org

August 2008

August 3–7 (Orlando, FL) *StormCon, the North American Surface Water Quality Conference & Exposition*. For more information visit www.stormcon.com. Steve Di Giorgi 805-682-1300 x129 or stevedg@forester.net

August 13–16 (Santa Rosa, CA) *SERCAL Society for Ecological Restoration California Chapter Annual Conference "Restoration's Bigger Picture"*. For more information visit www.sercal.org or contact Susan Clark 661-634-9228 or smclark@lightspeed.net

September 2008

September 21–24 (Oakland, CA) *CASQA Annual Conference*. Visit www.casqa.org

October 2008

October 2–4 (CSU Chico, CA) *California Invasive Plant Council (Cal-IPC) 2008 Symposia*. Visit www.cal-ipc.org or contact info@cal-ipc.org, 510-217-3500.

October 16 (Conference Call) *Western Chapter Board of Directors Meeting*. For more information, contact Tony Pitts at 530-662-7700 or tony@earth-savers.com

November 2008

November 19–22 (Kona, HI) *CLCA Annual Convention*. For more information visit www.clca.us

SR 188 – Resort Road to Devore Wash: The Final Link to the Lake

The Project

In 1993 the Arizona Department of Transportation completed an Environmental Assessment (EA) to improve and expand SR 188 from the city of Globe to Roosevelt Lake, a distance of about 30 miles. Roosevelt Lake is a major recreational resource in Arizona on the Tonto National Forest, expanded to 22 miles long with the raising of the Theodore Roosevelt Dam in 1996.

Between 1995 and 2002, portions of the SR 188 corridor were improved, leaving the biggest challenge, “going up and over the Summit,” until last. Following a comprehensive and intensive design effort, construction began on the Resort Road to Devore Wash segment in September 2003.

The project consisted of a new state highway alignment extending more than 7 1/2 miles over rugged terrain, with 6 new bridges, 70 pipes and box culverts, a pipe-arch animal crossing, transplanting of 1500 saguaros, ocotillos, and barrel cacti, and 1.8 million yards of soil and rock excavation at the cost of about \$30 million. The project also called for the abandonment and total reclamation of the Old SR 188 to the Forest Service requirement to “Leave No Footprint.”

Approach to Erosion and Sediment Control

Sediment and erosion control plans included a wide range of BMPs as well as permanent erosion control measures for the new SR 188 and the reclaimed Old SR188, with the FS as an active partner with ADOT. The costs of administering and implementing SWPP and related erosion control measures during construction totaled about \$2 million.

Project-specific challenges encountered during the 3-year construction period included severe rains with over 20 inches in 3 months in an area averaging 8 inches annually, in mountainous terrain. Many BMP “field adjustments” resulted in new BMPs, adopted by ADOT for use on future projects. These include:



Patrick J. Higgins, RLA
patrick.higgins@hdrinc.com

HDR Engineering Inc.
(602) 522-4336



Topsoil contains many roots and native seed species.

“J-drains” (down drains, named for their shape)

J-drains intercept surface flow from the compacted roadway subgrade and convey runoff to the riprap settling basins at the toes of slopes. They were used from initial construction through aggregate subbase placement.

Crown ditches

Placed at the tops of cut slopes to intercept overland flows in roadway soil cuts, hidden crown ditches were constructed several feet beyond the top of cut and slope-rounding zone in native soils to reduce the visual effect of the crown ditch. These crown ditches also revegetated more quickly and sprouted more woody plant species, than adjacent slope-rounding areas, because of root wads and seeds in the soil. Slopes of crown ditches were held at 5 percent or less, and sediment logs were added.

Topsoil salvage, stockpiling, and reuse on slopes

These simple steps improved the revegetation of the high-way slopes. Brush and vegetation were also collected, stockpiled, and distributed on cut and fill slopes.

Progressive seeding

Seeding in stages provided for continuous erosion control during construction and early establishment of long-term erosion control.

Upstream check dams

Installed on Forest Service land, these dams reduced the velocity and redirected surface flow to protect recently disturbed areas.

Reclaimed water

Water from the Globe STP was used for dust control and roadway construction.

Aggressive SWPP monitoring and oversight

A dedicated contractor SWPP team (under a force account) installed and maintained erosion control BMPs, conducted weekly SWPP reviews, and developed monsoon action plans (July to September). A full-time landscape architect and an ADOT inspector collaborated on the SWPP items with a full-time CPESC candidate as contractor.

Temporary sediment basins

These simple construction steps were installed with overflow pipes and riprap spillways to protect the sites.

Rock check dams

Installing these dams in roadside ditches reduced erosion, runoff velocity, and undercutting in ditches.

Contractor use areas (CUAs)

Four temporary use areas were established for the plant nursery, staging, materials storage, etc., identified in the plans. A reclamation plan for each CUA

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was developed and implemented before project close out. Reclamation plans included grading, erosion control measures, seeding, and fencing.

Cut slopes

Extensive slopes (over 50 feet in height) were mini-benched to reduce erosion and stabilize the slope.

Rain gauge stations

Four such stations were installed to monitor the variable rainfall rates over the length of the project. Daily weather forecasts were monitored and a weekend SWPP on-call team was established for erosion control maintenance. Individual SWPP plans were developed for each bridge site and contractor use area.

Lessons Learned

- ☑ An aggressive and comprehensive sediment and erosion control program must be applied on highway construction projects to ensure that measures are implemented during construction. The plans and specifications should serve as a guide, but it is important to be flexible and innovative.
- ☑ Contractor operations and schedules affect the implementation of SWPP measures. The biggest-pay items—such as rock and soil excavation, structures, and paving—always drive the project, unless the project is strictly an erosion control project.

To ensure implementation of erosion control BMPs there must be a way to pay for them. In addition to pay items, a force account helps ensure that BMPs are installed when needed.

- ☑ BMPs are usually installed by sub-contractors. If this is the case, it is important to get the erosion control subcontractor to buy into the prime's schedule and vice versa.
- ☑ There is a time between when temporary BMPs may have to be removed but before permanent erosion control can be installed. This leaves the project vulnerable to unchecked erosion and sediment problems. On this large-scale highway contract, we experienced this condition. We experienced some surface erosion but also spawned a solution for upcoming projects.

While the large fill slopes were being constructed, BMPs were added at each stage and maintained throughout. Temporary sediment basins, with over-flow pipes, earth containment berms and J-drains were constructed and maintained and functioned properly.



Riprap check dams reduce off site water flow velocity and protect resources.

However, after the fill slopes were brought up to grade, the basins, berms, and drains were in the way. They had to be removed to place the aggregate base and paving, leaving the slopes unprotected. Several intensive rains (2+ inches in 2 hours) hit the hard surfaces and eroded deep rills into the newly seeded fill slopes. All of the sediment was captured in downslope sediment basins at the pipe outlets, but repairs had to be made. Following these events, the slopes were repaired and reseeded.

A revised slope design was developed to be used in critical locations that should correct the problem of intermediate (between BMP and permanent controls) erosion control deficiencies. The solution consisted of widening the selected fill slope by 10 feet, to allow space to maintain an erosion control berm and J-drain while the aggregate and pavement were being installed. Concrete embankment curbs and down drains were installed after the guardrail was installed. Construction costs were minimized because widened slopes were planned during original construction phasing.

Several additional long-term benefits were also realized:

- ☑ The guardrail posts were more stable.
- ☑ Maintenance personnel were able to more easily gain access to the slope and the guardrail.
- ☑ Maintenance personnel and equipment were kept out of the roadway traffic.
- ☑ Slope erosion was minimized and seeding was more effective.

Phase 2 – Reclamation of the Old Alignment

The SR 188 Resort Road to Devore Wash Project was actually two projects in one contract. After the new SR 188 was open to traffic the work of milling, reclaiming, regrading, and vegetating began.

Preactivity meetings were held to review potential problems inherent in reclaiming the old road.

The grading plans and specifications, developed by Wheat Scharf Associates for ADOT, provided the guidance necessary to set the slope limits and begin the reclamation.

Many of the BMPs that were effective on the highway construction project were also used on the reclamation phase. And, because the width of right-of-way was restricted and access to the site was limited, new challenges were presented. ☁