

ERE MESSENGER

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Caltrans Tests Vegetation Control Program

Caltrans Press Release

What's Caltrans doing to maintain your state high way roadsides on the north coast? "Still trying to do more with less", says District Division Chief for Caltrans Maintenance and Operations, Marty Van Zandt.

The Caltrans Roadside Vegetation Control Program on the north coast's highways has the twin goals of reducing vegetation control and chemical use while minimizing the risk to the travelling public and Caltrans workers. Consistent with an Environmental Impact Report completed in 1992, the Department utilizes an Integrated Vegetation Management (IVM) approach to vegetation control.

"We simply try to use the right tool for the job and develop as many new, environmentally friendly and low risk tools as we can find" says Van Zandt. Methods employed and considered in this year's plan for north coast roadsides include:

- Mechanical and Manual: Approximately 4,450 acres are maintained with these methods. Special programs, California Conservation Corps crewmembers, and inmate crews are utilized whenever safely possible for manual vegetation control. Brush

trimmers are employed extensively to control heavy vegetation along roadsides.

- Cultural: Vegetation control is increased through the use of mulch around safety devices, e.g., guardrails, signs, and delineators; landscape plantings and other areas where feasible. The goal is to increase the volume of mulch each year. This is accomplished by identifying local waste generators, contacting these potential resources, and generating more mulch with state forces.

- Biological: Biological control methods for Yellow Starthistle, Gorse, Tansy Ragwort and Broom species and other noxious weeds are being employed at various locations throughout the northwestern corner of the state by the California Department of Agriculture. These include a number of beneficial bugs that invade only the undesirable weeds and kill them.

- Vegetation-related Research: The District Landscape Architect has selected various areas of highway for testing low-growing, low-maintenance grass species as well as native grasses and wildflowers. If successful, in addition to reducing mechanical treatment, this will also lead to

meeting the unfulfilled control need left with the cessation of chemical control in many areas. The projects include erosion control utilizing native bunchgrasses, low-growing fescues, and native wildflowers. The completed projects are in the process of being monitored and surveyed for results and future applications.

- Chemical (approved herbicides and adjuvants): 250 acres will be maintained by these methods but only in those areas of Lake and Humboldt

• continued on page 6

In This Issue

Caltrans Tests Vegetation Control Program	1
Caltrans Press Release	
Alumni Profile	2
Message from the President	3
The Domenigoni Valley: Where Paleontology Meets Water Resources	3
Matt Kennedy	
Calendar	3
Misdirected E-Mail	3
All About Al	4
Katie Bowman & Joanne Chan	
The 10 Best Things to Say If You Get Caught Sleeping in Class	4
A "Real Good" Experience	5
Monica Martin	
S.H.I.T.	6
William Daniel Cross	

Alumni Profile

Nancy Atkinson
B.S. ERE 1997
Kennedy/Jenks Consultants
Ventura, California

Here's a brief recap of the highlights of my career since leaving HSU in May 1997:

It's been nearly two years since I sweated out the review of my Senior Project. It seems like a much longer time than two years, more like ten. I've moved a couple of times, worked full-time since October 1997, and gotten used to not doing homework. I am still grateful for my job, and not disillusioned about anything, except for "low-fat" food.

I started working at Kennedy/Jenks (K/J) Consultants in Las Vegas, Nevada in early October 1997, after a summer of traveling back and forth from Arcata to Vegas, interviewing my little heart out with project managers and regional managers and receptionists in the very many (30+) engineering firms in Las Vegas. I got lucky at K/J. I had visited a wetlands project in the near by town of Boulder City, and used a picture of the facility on the face of a postcard to solicit an interview with K/J. I swear, its all in the timing! I walked into the K/J office a few days after someone left.

For the first year, I reviewed drainage studies for the City of Henderson, Nevada. I learned how

to get information from a drawing, and how to write pleasant, but effective review letters. I was reviewing hydrology and hydraulics information prepared by first and second year engineers, most of whom were civil engineers with no background in those two disciplines. Can I make a recommendation? Hone your writing skills.

I have been working at K/J in Ventura, California, since September 1998. I am very glad to get back to the Pacific Coast. Currently, I am working on a planning project. I have investigated existing conditions at a brackish-water and salt-water wetlands area near Ormond Beach, City of Oxnard, California. I am planning the development of a new wetlands area that will utilize reclaimed water and reject water from membrane treatment facilities in Ventura County. I am also the project coordinator for the construction of a potable water reservoir serving the City of San Buenaventura.

Water issues, especially in Southern California, are fraught with politics. Before a facility can be planned, designed and built, the lead agency needs to have many people nodding their heads in agreement to the concept. Design is important, but politics will have its way. Some more advise? Learn how to work with all sorts of people.

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ERE Changes

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Message from the President

Hello Everyone

I just wanted to add a quick word on how stoked I was about the successes of ERESA last semester, and I want to thank everyone involved in its achievements. As most of you know the Humboldt State "Waste Water Warriors" took 1st Place in the Environmental Engineering Waste Water Treatment Competition at the University of Reno, Nevada last April, beating UCLA and UNR, and winning the privilege of hosting the competition next Spring. Congratulations to Marc Leisenring, James Van Bonn, Eric Lim, Rick Macala, Dave Wastenberg, myself, and everyone else involved. It was an awesome project and a great learning experience for all involved. Hosting the competition next year will also be an terrific opportunity for more ERE students, regardless of class level, to become involved in designing a new apparatus and organizing the event. The Waste Water Treatment Competition could be our chance to show all those "big name" schools that we've got our own secrete supply of wup-ass.

I would also like to encourage folks to get involved in some of the other activities and events sponsored ERESA, especially those cosponsored by SWE. Participating is a lot of fun, and doesn't take all that much time out of your schedule. Events, like the rafting trip and beach party last semester, are totally cool and easy to organize if people are just willing to do so. There are even community service projects for those with giving hearts (ahhhh). So come on out, get involved, and have fun doing it! Thanks to those already involved in ERESA, including the entire Coffee Table crowd (yerba mate rocks!). Without you there would be no club. Peace and good luck this semester!

Matt Kennedy, ERESA President

The Domenigoni Valley:

Where Paleontology Meets Water Resources

by
Matt Kennedy

The Domenigoni Valley in southern California was once a lush watercourse where warm-blooded creatures came to drink, hunt, and roam. That was before the end of the last Ice Age more than 10,000 years ago. Today it is an arid basin, and home to many desert dwelling creatures, including the threatened gnatcatcher songbird and the endangered Stephens' kangaroo rat. It is also the final resting-place of the most recent and largest assemblage of fossils dating to the late Pleistocene Epoch (the "Ice Age") known anywhere in the Inland Empire, prompting its nickname, the "Valley of the Mastodons". In a matter of months, however, the Domenigoni Valley will be a very large lake, the result of the biggest project ever undertaken by the Metropolitan Water District of Southern California (MWD).

Soon what were once open desert, crop and cattle land will be the largest freshwater reservoir in Southern California.

The valley, named for the Domenigoni family who has owned and farmed the land for over a century, covers approximately 5,000 acres and is the site of one of the largest earthmoving projects currently underway in the United States. The MWD initiated the Eastside Res-

ervoir Project in 1991 to provide additional water supplies for drought protection and to meet the peak summer needs of Southern Californians. It will also provide water security in case of a cataclysmic earthquake along the San Andreas Fault. But, in June of 1993 during the relocation of a canal that spans the valley, the discovery of the first fossil bones ever known from the Domenigoni Valley came to light, shocking both the MWD and local paleontologists.

The first fossil fragments unearthed were those of an extinct mammoth. But this discovery was just the beginning. Since that time nearly 2,000 fossils in good condition have been recovered from more than 300 localities at the Eastside Reservoir Project site. Findings also include pictographs (rock paintings), petroglyphs (rock carvings), and numerous other Native

American artifacts. The collection of fossils is similar in many ways to the trove at the famous La Brea "tar pits" in Los Angeles, except this discovery is grander in scale. Fossils recovered include the Giant Harlan's ground sloth, Dire wolf, and Columbian mammoth, as well as many species of extinct bison, horse, camel, and lion. The most common animal identified at the site is the American mastodon

• continued on page 7

CALENDAR

AUGUST

Welcome Picnic
Fall Tutoring Program Begins

SEPTEMBER

Monthly Speaker Program Begins
Field Trip to be Announced

OCTOBER

ASCE One-On-One Dinner

NOVEMBER

Thanksgiving Dinner & Follies
Election of New ERESA Officers

DECEMBER

Happy Holidays!

Misdirected E-Mail

It is wise to remember how easily this wonderful e-mail technology can be misused, sometimes unintentionally, with serious consequences. Consider the case of the Illinois man who left the snow-filled streets of Chicago for a vacation in Florida. His wife was on a business trip and was planning to meet him there the next day.

When he reached his hotel, he decided to send his wife a quick e-mail. Unable to find the scrap of paper on which he had written her e-mail address, he did his best to type it in from memory. Unfortunately, he missed one letter, and his note was directed instead to an elderly preacher's wife, whose husband had passed away only the day before. When the grieving widow checked her e-mail, she took one look at the monitor, let out a piercing scream, and fell to the floor in a dead faint. At the sound, her family rushed into the room and saw this note on the screen:

Dearest Wife,
Just got checked in. Everything prepared for your arrival tomorrow.

P.S. Sure is hot down here!

All About Al

by
Katie Bowman & Joanne Chan

We all know Al Burrows, especially if you didn't pass statics the first time. We recently interviewed Al to learn a little more about his career, the events that lead him to HSU, and his decision to instruct part-time. Al grew up in Treherne (a small town of about 500 people) in Manitoba, Canada. In Al's small hometown everybody knew his business. For instance, when Al missed school one of the local, little, old ladies would say, "Aldey, you missed school today." When Al was 18 and hanging out at the local pool hall with his "buddies," he met a local war hero who became an engineer after World War II. At this time Al didn't even know what an engineer was (they didn't exist in Treherne), but after two hours of discussion, he was convinced that he would be an engineer.

Like many of us, Al found that the first two years of college were difficult due to a lack of motivation. Al mentioned, "By today's standards I probably would have been kicked out." But after a summer working as a surveyor, Al saw the light. He performed well his last two years of school, and continued to achieve his masters and Ph.D. degrees in civil engineering.

After receiving his bachelor degree Al began work as a bridge engineer. He hired scuba divers to inspect bridges underwater, but it soon became apparent that the divers were not suited to assess the condition of the bridges. Al decided that he would learn to dive, and inspect bridges himself. At that time Al was the only diving bridge engineer. He has inspected bridges in all of the major rivers in the United States and Canada. During the 1960's when he first began diving professionally, laws didn't exist stating that bridges must be inspected underwater. As an engineer, Al tried to convince bridge owners that it was important for bridges to be frequently inspected

underwater. Bridge safety wasn't brought to the forefront until tragic incidences began occurring due to underwater bridge deficiencies. One incident that prompted new legislation for bridge inspection was the collapse of the Silver Bridge on the Ohio River. An estimated 25 people died when the bridge collapsed during a major storm in the middle of the night. As one of the few diving engineers, Al's abilities put him in high demand. He continues to inspect bridges during the summer.

While working toward his Ph.D. at the University of Washington, Al applied for a temporary position at Humboldt State University. At that time the Humboldt engineering program was strictly civil although the program was in transition to become environmental engineering with only four faculty members and fifty students. HSU loved Al so much that he became a full time faculty member and in 1973 he became Chairman of the department. One of Al's most memorable semesters was when he taught Dynamics. Lucky for Al, Brad Finney was there to help him out not as a colleague but as a student. Poor Al, Dynamics was so traumatic he decided to stick with teaching statics and occasionally courses such as Strength of Materials, Soil Mechanics, Hydrology, and Coastal and River Engineering. After almost three decades at HSU Al has decided to retire and teach part-time and focus his attention on recruiting new students and making curriculum changes to meet ABET standards. Al is reluctantly moving into retirement, not wanting to move away from the career that he loves. We asked Al if he had any other hobbies and if he is looking forward to retirement. His reply was, "No, that's my problem, I have no other hobbies, and I don't like golf." ERESA

The 10 Best Things to Say if You Get Caught Sleeping in Class

10) "They told me at the blood bank this might happen."

9) "This was just a 15 minute power-nap like they raved about in that time management course you sent me to."

8) "Whew! Guess I left the top off the White-Out. You got here just in time!"

7) "I wasn't sleeping! I was meditating on the mission statement and envisioning a new paradigm."

6) "I was testing my keyboard for drool resistance."

5) "I was doing a highly specific Yoga exercise to relieve work-related stress. Are you discriminatory toward people who practice Yoga?"

4) "Why did you interrupt me? I had almost figured out our biggest problem!"

3) "The coffee table isn't open, so I can't get my caffeine..."

2) "Someone must have put decaf in the wrong pot..."

And The #1 Best Thing To Say if You Get Caught Sleeping in class...

1) "...in Jesus' name. Amen."

A "Real Good" Experience

by
Monica Martin

Nick Beaucage, an ERE student at Humboldt State University, recently received a work exchange internship with the company, Real Goods which is located in Hopland, California. Real Goods is a distributor of environmentally sound items such as solar panels, batteries, inverters, solar appliances, hemp products, etc.

The internship with Real Goods required manual labor in exchange for the opportunity to learn about renewable technologies. Digging ditches, installing water lines and building a cobb pump-house were a few of the tasks Nick accomplished. Although, when the temperature reached 110 degrees in the shade, the interns did not accomplish much.

Nick also benefited from free classes Real Goods offered to the interns in exchange for their work. Topics discussed in these classes include solar energy, cobb construction, and strawbail construction. Nick notes that strawbail homes are not to be underestimated. They have been proven to be fire resistant and are built of better

quality than the common house. Strawbail Construction consists of a rock foundation, straw bails stacked like bricks, tied down in bundles and supported by rebar. The finished product is blasted with mud and left unpainted leaving a stucco-like appearance.

All of the Real Goods interns camped on-site, with access to solar showers and solar ovens. They stored their belongings in tents and slept outside. They grew most of their food, which consisted of mainly vegetables. The interns learned to be creative with their meals since they were only paid five dollars a day.

Nick feels his internship with Real Goods was a worthwhile experience. He values the knowledge of renewable technology he gained while working for them. When asked what was the best part of his experience he replied "I received instantaneous gratification driving the electric powered James Dean model Porsche, but in hind sight the classes I took in solar and microhydroelectric technologies were much more beneficial." ERESA



Caltrans

• continued from page 1

and Del Norte Counties where the local governing bodies have not requested chemical control be discontinued.

Even in these areas Caltrans is trying to use the bare minimum needed to get the job done. The "Microphor Roadside Weed Sprayer" was recently tested in this area. It is an automated system that sprays weeds only, not non-plant bare surfaces, resulting in a chemical use reduction in the range of 50% to 80%. Caltrans is purchasing a unit and the unit will be used initially along road-sides in the Central Valley.

Due to the cessation of herbicide use in Mendocino County and most of Humboldt County, the local Caltrans District, in conjunction with its District Roadside Vegetation Management Advisory Committee (DRVMAC), is spearheading the testing, evaluation and research of alternative methods of vegetation control. Examples include:

- The "Polecat", guardrail mower (So far unsuccessful due to major operational failures)
- The "Perfect", rotary mower and flail chopper (Soon to be tested)
- Superheated Weed Steamer (On-going evaluations are occurring at various test sites including Route 101 in the Trinidad area.)
- Corn gluten, a natural byproduct of corn used as a herbicide (On-going evaluations)
- "Weed Ender" is a composite non-toxic, bio-barrier, soon to be utilized around safety devices such as guardrails, signs, delineators and other vital parts of the highway to replace the use of herbicides, or repeat visits using other means. Plans are to install and evaluate this product in Humboldt County along the Redwood National Park Bypass on Route 101 sometime this next summer. It has already been installed under a section of guardrail on a recent storm damage repair job on Highway 101 north of Redcrest in Humboldt County.

- Vinegar, research for use as a herbicide will begin as soon as California registration occurs.

- Low growing native plants along Jughandle State Reserve, Route 1, Mendocino County (Starting Fall 1999)

- Thermal Control: In 1993, these methods were observed closely, and District 1 tested two hot water systems of weed control. Although these methods hold promise, at present they do not seem to be cost effective.

- Structural (Pavement and Barriers): Structural improvements being implemented include placement of sealant materials in roadbed cracks and joints where weeds proliferate, replacement of plant growth with pavement or asphaltic materials in gore points, around specific safety devices, in drainage courses and narrow median areas where mechanical vegetation control means are difficult to use.

Sensitive roadside areas are treated with respect. For instance, Caltrans Landscape Specialist Bob Melendez continues to meet with local Native American tribes to coordinate vegetation control near ceremonial sites so that vegetation control by Caltrans will not adversely affect gathering of medicinal plants and vegetation utilized as part of the basket weaving process. He also tracks the locations of rare, endangered and threatened plant species so that our control efforts avoid impact on them.

Van Zandt sums the program up this way: "We've learned that the public wants the least possible chemical use on our roadsides. With the help of our advisory committee and others, we are reinventing the control of vegetation on our roadsides. Keeping safety devices visible and reducing fire risk remain among our top priorities. Control of invasive exotics such as Pampas Grass, Scotch/French broom and Gorse, which are crowding out native vegetation at an alarming rate, also continues to be a high priority. We are learning to meet these challenges in better ways for today and our future." ERESA

SPECIAL HIGH INTENSITY TEACHING

by

William Daniel Cross

Memo to all ERE students.

Ⓢ In order to assure the highest levels of quality work and productivity from students, it will be our policy to keep all students well taught through our program of SPECIAL HIGH INTENSITY TEACHING (S.H.I.T.). We are trying to give our students more S.H.I.T. than anyone else.

Ⓢ If you don't think you received your share of S.H.I.T. during the course, please see your instructor. You will be immediately placed at the top of the S.H.I.T. list, and our instructors are especially skilled at seeing that you get all the S.H.I.T. you can handle.

Ⓢ Students who don't take their S.H.I.T. will be placed in DEPARTMENTAL EDUCATIONAL EVALUATION PROGRAMS (D.E.E.P. S.H.I.T.). Those who fail to take D.E.E.P. S.H.I.T. seriously will have to go to EDUCATIONAL ATTITUDE TRAINING (E.A.T. S.H.I.T.). Since our instructors took S.H.I.T. before they graduated, they don't have to do S.H.I.T. anymore, and are all full of S.H.I.T. already.

Ⓢ If you really have your S.H.I.T. together, you may be interested in a job teaching others. We can add your name to our BASIC UNDERSTANDING LECTURE LIST (B.U.L.L. S.H.I.T.).

Ⓢ For students who are intending to pursue a career in management and consultancy, we will refer you to the department of MANAGERIAL OPERATIONAL RESEARCH EDUCATION (M.O.R.E. S.H.I.T.). This course emphasizes how to manage M.O.R.E. S.H.I.T.

Ⓢ If you have further questions, please direct them to our HEAD OF TEACHING, SPECIAL HIGH INTENSITY TRAINING (H.O.T. S.H.I.T.).

Thank you,
BOSS IN GENERAL
SPECIAL HIGH INTENSITY TEACHING
(B.I.G. S.H.I.T.)

Dominigoni

• continued from page 3

indicating that the area was much wetter and more forested than it is today. But current conditions will soon change once the reservoir is completed at the end of this year.

Since its conception the Domenigoni Valley Reservoir is an amazing project. Three earth/rock fill dams will create the lake. The West dam will be 1.7 miles long, 285 feet high and 1,200 feet wide at the base. The East dam will be 2 miles long, 185 feet high and 800 feet wide at the base. The Saddle dam will be 0.5 miles long 130 feet high and 720 feet wide at the base. In all, more than 90 million cubic yards of clay, sand and rock will be required to construct the reservoir, the largest earthfill dam

project in the United States, at a cost of nearly \$2 billion. And since there are no natural water sources in the area capable of filling the 800,000 acre-foot (269 billion gallon) storage capacity, water will be pumped in from the Colorado River Aqueduct, and from (you guessed it) Northern California via the California State Water Project from Lake Silverwood. Once it is completed, the reservoir will nearly double the region's surface storage capacity.

In the end, nearly 5,000 acres of farm and cattle land, and 305 archaeological and paleontological sites will be under water. In addition, the Stephens' kangaroo rat and gnat-catcher songbird will lose crucial habitat. But efforts have been made to help alleviate these losses. Two na-

ture reserves have been established around the reservoir, totaling 12,700 acres. Fossils and Native American artifacts will most likely be put on display at visitor centers and museums nearby as soon as the facilities are built. Residential development will also be booming in the Hemet and surrounding areas with the increased recreational activities accompanied by the lake. Rather than letting the valley eventually become a large residential community, most people are happy with the reservoir, and there were very few objections from environmentalists. Not even the Sierra Club complained. With all the benefits the reservoir will bring to Southern California, most folks agree that a \$2 increase in the monthly water bill is well worth it. ERESA



Aerial View of the partially completed Dominigoni Reservoir

Thanks for Making It Possible...

Winzler & Kelly

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