Cal EPPC News

Protecting California's Natural Areas
from Wildland Weeds

Vol. 10, No. 3, Fall 2002 Quarterly newsletter of the California Exotic Pest

Jimsonweed (*Datura stramonium*), is a summer annual native to Mexico. It is a problem in California in agricultural crops and disturbed fields. Along with an unpleasant odor, it contains tropane alkaloids that are used medicinally, but can be deadly toxic. [From the upcoming 2003 *Weeds of California* calendar. Photo by Joe DiTomaso.]

Inside:

California
Exotic Pest Plant
Council

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A California 501(c)3 nonprofit organization

Our Mission

CalEPPC works to protect California's natural areas from wildland weeds through research, restoration, and education.

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Fall 2002 - Volume 10, Number 3

Editor: Doug Johnson, dwjohnson@caleppc.org

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From the Director's Desk

sym-pō'-si-ŭm

n. 1) In ancient Greece, a drinking together, usually following the banquet proper, with music, singing, and conversation; hence, a banquet or social gathering at which there is free interchange of ideas. 2. A conference at which a particular subject is discussed and opinions gathered; also, a collection or opinions on a subject; esp., such a collection published by a periodical.

Though there are no exceptional drinking plans (of which I'm aware, at least), there does promise to be an informative interchange of ideas at the **2002 Cal-EPPC Symposium**, October 11-13 in Sacramento. It's the year's best opportunity to meet with other restoration scientists, land managers and concerned citizens to discuss the assessment and treatment of invasive plant invasions. The theme of the symposium is the "Costs and Consequences of Invasive Plants," and the line-up of presenters is looking great. If you have not received a program and registration materials, you can find them on our website at www.caleppc.org.

We have an excellent slate of candidates for the **Board of Directors election**. Ballots went out to members current as of July 31. If you haven't sent in your ballot, please do so as soon as possible so your vote is counted. The folks you elect will help set strategic direction for Cal-EPPC over the next year!

The last few months have brought new **educational partnerships**. Cal-EPPC provided a mini-grant to Lorrae Fuentes for a southern California K-12 teacher training that included a trip to see invasive species projects on the Channel Islands. At the request of the Santa Barbara Botanic Garden, we are supplying copies of the list of Invasive Plants of Greatest Ecological Concern in California for use in their public classes. And the Aquatic Outreach Institute, which trains Bay Area teachers in environmental education, will be using CalEPPC materials in their training packets.

A big **thank you** to those that recently renewed their memberships for 2002. Renewal requests for 2003 will come out on their normal schedule later this fall. Cal-EPPC welcomes new members and recognizes contributing and institutional members on page 9.

We are pleased to publish this issue's feature article by Erika Zavaleta (begins page 5). As the article makes clear, ecological restorationist need to look at invasive species eradication in a whole-ecosystem context in order to reduce the potential for undesired consequences. Erika is currently researching factors (including exotic Mediterranean annuals) affecting the regeneration of valley and blue oaks.

See you at the Symposium!

Doug Johnson

Wildland Weed NewsNewsNewsNewsNews

A City of ***San Diego ordinance*** seeking to ban certain invasive exotic plants has been recommended for approval by a city council committee. The ordinance would ban the sale, distribution and cultivation of pampas grass, giant reed, Cape ivy and tamarisk. The city's Park & Rec. Dept. is already involved in removing plants targeted in the ordinance. [TheSanDiegoChannel.com, 6/1202]

California State Representative Dave Cogdill (Modesto) authored ACR 218, declaring the second week of July each year as ***Harmful, Nonnative Weeds Awareness Week***.

"Not every [environmental] problem of consequence comes with a Bhopal-style wake-up call. Global warming and species extinction are examples of potential catastrophes that are hiding in plain sight…"

New York Times, Aug. 20, 2002, p. D4 [From a special section "Managing Planet Earth," which devotes an entire page to restoration ecology and invasive species, and maps 25 biological hot spots worldwide, including the California floristic province.]

Emily Roberson, Conservation Program Director for the California Native Plant Society, presented the ***Native Plant Preservation Campaign*** to the international Convention on Biological Diversity in April. The convention's Committee of Parties adopted principles on invasive plants, including guidelines for prevention, eradication and control. More at www.cnps.org/npcc.htm.

The California Native Grass Association gave a ***workshop for CalTrans*** on April 24. Called "Roadside Revegetation Using Native Grassland Species," the workshop toured Yolo and Solano County sites to learn about using native grasses to reduce total life cycle cost, improve roadside appearance, enhance environmental quality, reduce fire potential, and reduce chemical applications. <www.cnga.org>

Cal-EPPC joined other groups in signing a letter to President Bush, his advisors, and key members of Congress and the Cabinet expressing concern about the environmental implications of moving invasive species-related functions of the USDA's Animal and Plant Health Inspection Service (APHIS) and the Coast Guard to the newly proposed ***Department of Homeland Security***. The letter was supported by environmental and scientific groups, spearheaded by the American Lands Alliance, the International Center forTechnology Assessment, and the Union of Concerned Scientists.

A two-day ***Invasive Plant School*** was held in San Diego on June 18/19, 2002. The workshop was designed to satisfy continuing education requirements for pesticide licenses while focusing on topics especially relevant to people working to combat invasive plants. Participants received 12 hours of CE credit by studying weed biology and ecology, weed management, control of arundo and saltcedar, herbicide basics, specific information on herbicides used on invasive plants, and laws and regulations regarding pesticide use and working in sensitive habitats. Due to the success of the workshop, another will be held Sept. 25/26 in San Diego. For info, contact Carl E. Bell at cebell@ucdavis.edu.

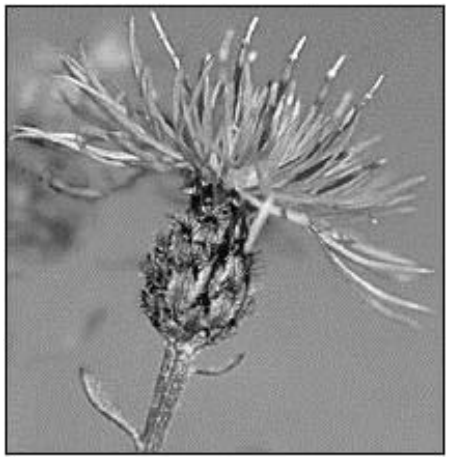
Craig Dremann of the Reveg Edge published an article entitled ***"Releasing the Native Seedbank: An Innovative Approach to Restoring a Coastal California Ecosystem"*** in the June 2002 issue of *Ecological Restoration*. The article describes the conversion of 74 acres in Santa Cruz County from 95% exotic invasives to 85% local natives without herbicides, burning, tilling, seeding or grazing. The conversion involved extensive planting of natives propagated from seed collected on-site. The article can be found at <www.ecologicalrestoration.info/202.html>

University of Washington's Center for Urban Horticulture planted 19 packets of ***wildflower seed mixes*** marketed in the Pacific Northwest, finding that each contained anywhere from three to thirteen invasive species, and eight had seeds for plants considered noxious weeds in at least one state or Canadian province. (04/19/02, Seattle Post-Intelligencer)

The USDA Agricultural Research Service offers the first scientific evidence that ***vinegar may be a potent weedkiller***, one that is inexpensive and environmentally safe--perfect for organic farmers. The researchers found that 5- and 10-percent concentrations killed weeds (common lamb's-quarters, giant foxtail, velvetleaf, smooth pigweed and Canada thistle) during their first two weeks of life. Older plants required higher concentrations. Spot spraying of cornfields with 20 percent vinegar killed 80 to 100 percent of weeds without harming the corn.

The ***Mid-Atlantic Exotic Pest Plant Council*** held their annual meeting in West Virginia August 7/8. Topics included the effects of invasives on TNC preserves in the Allegheny Highlands, spotlighted *Iris pseudacorus*. More info at: www.se-eppc.org/states/maeppcam.html

Colorado State University scientists have



isolated a phytotoxin secreted by the roots of spotted knapweed which may have applications as a ***natural herbicide***. More info at <www.agnews.colostate.edu>

Water agencies have amassed nearly $25 million to root out ***Arundo donax*** stalks clogging waterways in southern California (LA Times, July 21, 2002, www.latimes.com/la-mecane21jul21.story).

Cal EPPC Project Updates

Weed List revision

The weed list committee, which includes representatives from Arizona and Nevada, has completed a draft of the new ranking protocol for internal review. This protocol will ensure that the basis for weed rankings is consistent, well-documented, and "transparent." The next step, after redrafting the protocol based on reviewers' feedback, will be to identify the full set of plants that should be evaluated using the protocol. This will result in a new list of *Invasive Plants of Greatest Ecological Concern in California* in 2003. The protocol design aims to make ongoing updates simpler. It is standardized so that other states can use the system as well. For more information, or to make sure a new weed gets evaluated, contact committee chair Peter Warner by email at pwarn@parks.ca.gov or by post at State Parks Northern Service Center, One Capitol Mall, Suite 500, Sacramento CA 95814. [Thanks to the Center for Invasive Plant Management in Bozeman, MT for their grant in support of this effort.]

International Broom Initiative

While research on French broom biological agents continues at facilities in Montpelier, France, the California team has organized support for funding in the US Department of Agriculture budget to study the biocontrols at their quarantine lab here in Albany. (The lab is already engaged in other wildland weed work: Dr. Joe Balciunas is researching agents to control Cape ivy, in conjunction with South African researchers; and Dr. Lincoln Smith is conducting research on additional controls for Yellow starthistle.) Agencies such as the Regional Council of Rural Counties, the Fort Bragg Fire Protection Authority, and eight county agricultural offices have sent letters of endorsement to Rep. Sam Farr (Monterey) and Sen. Dianne Feinstein. Rep. Farr and Sen. Feinstein sit on Agricultural Appropriations Sub-committees in the House and Senate, respectively, and will work to include the line item for the research in the budget. Frank Wallace of Sacramento has been gathering endorsements and following the process in Washington.

Landscaping Alternatives Project

A kickoff meeting and workshop were held at the U.C. Berkeley Botanical Garden in Berkeley on June 7 to discuss the problem of ornamental plants that escape to become wildland invasives. Participants at this meeting included wildland weed specialists, native habitat advocates, land managers, and horticultural experts from the botanic gardens, with representatives from organizations such as UC Extension, The Nature Conservancy, the National Park Service, Cal-EPPC, the California Native Plant Society, and Ketzel Levine, the gardening correspondent from National Public Radio. (The next meeting will be coordinated with representatives from cooperative nurseries.)

The attendees selected a target group of ten plants that are (1) available in nurseries, (2) have realized or potential impacts in natural areas, and (3) are not already regulated by the California Department of Food & Agriculture. Then, based on horticultural attributes of each of the targeted invasive plants (hardiness, habitat, growth habit, care requirements, flowering time, color, foliage type, and the plant's roles in landscape design) the group identified a list of plants as potential alternatives. The next step will be to meet with nursery representatives for their input. The project's initial product will be brochures for nurseries encouraging landscaping alternatives to invasive plants. For more information, contact project coordinator Alison Stanton:

Legislative Update...

State

AB 2534 (Pavley) "Clean Beaches"

This bill contains a provision that could provide funding for invasive plant control in coastal watersheds, including *Caluerpa taxifolia* eradication through the Southern California Caulerpa Action Team (SCCAT). The bill has passed the Assembly and is now in the Senate Agriculture and Water Resources Committee. Full text of the bill is available online at: www.assembly.ca.gov/acs/acsframeset2text.htm.

ACR 218 (Cogdill) "Harmful, Non-Native Weeds Awareness Week"

ACR 218 has passed, setting aside the second week of July for programs advancing awareness of invasive plants.

Federal

S 198 (Craig, ID and Daschle, SD) and **HR 1462** (Hefley, CO) The Harmful Nonnative Weed Control Act

This bill would provide major funding for local weed projects nationwide. Currently being heard by the Senate Committee on Energy and Natural Resources and the House Committee on Agriculture.

US Senators Pete Domenici (NM) and Wayne Allard (CO) have drafted a bill that would set aside $10 million for the Army Corps of Engineers to research and implement **tamarisk removal** along waterways in the West.

Feature

Viewing invasive species removal in a whole-ecosystem context

Erika S. Zavaleta, Richard J. Hobbs & Harold A. Mooney

[adapted with permission from their article of the same name in TRENDS in Ecology & Evolution, 16(8):454-459, August 2001.]

How do we know whether a non-native plant is likely to invade a particular area? Can we tell when an invasive has stopped spreading-or where it will someday stop -based on geographic factors? Such questions intrigue researcher Scott Steinmaus of Cal Poly San Luis Obispo. Here he describes tools he is developing tools to find answers.

As a graduate student, I learned to question assumptions. Michael Barbour taught us to challenge the assumption that we could ever really know the "native" condition of California. Marcel Rejm nek taught me to ask, "Is your invasives problem truly growing over time, or does it just look that way because you are doing a better job of measuring it?" These questions underlie my development of models for evaluating the potential for plant invasions.

Prediction is key

Few would disagree with the philosophy that "prevention is the best cure." Predicting where a plant species might become invasive is a key component of prevention programs.

One technique for making predictions uses empirical models that are based on observations without necessarily understanding the mechanism. These predictions are usually accurate only under a narrow range of conditions within which the observations were made.

A more robust technique for making predictions uses a mechanistic understanding of how and why invasion is successful for a given species. Biological characteristics alone are often not enough to predict invasion in a particular location because they do not consider the other two components to a successful invasion: site characteristics and the form of disturbance. This is where models become useful.

We look at three components of invasion:

(1) species characteristics-biological factors make a species invasive, consider native weaknesses as well;

(2) site characteristics-ecotones, complexity, isolation, and environmental factors; and

(3) disturbance-any diversion from the native condition that facilitates invasion.

Species characteristics

Biological characteristics of an exotic species have been used to predict invasiveness. Two systems of criteria appear least prone to error: Reichard's risk assessment system for woody plants in North America, and the Australian weed risk assessment system for all plants (White and Schwartz 1998). The two systems use essentially the same criteria:

(1) a history of invasive behavior elsewhere;

(2) closeness of biological relationship to another species that is invasive;

(3) climatic/ecological similarityof introduction area to original home range;

(4) aggressive traits such as allelopathic chemical release or extremely competitive;

(5) biological attributes such as vegetative reproduction, vine-like growth habit, short juvenile period, habitat generalist, easy germination/establishment patterns.

Site characteristics

Cronk and Fuller (1995) provide general hypotheses that explain common plant invasions. These may be used to develop characteristics of sites that lend themselves to invasion. Susceptibility can be based on:

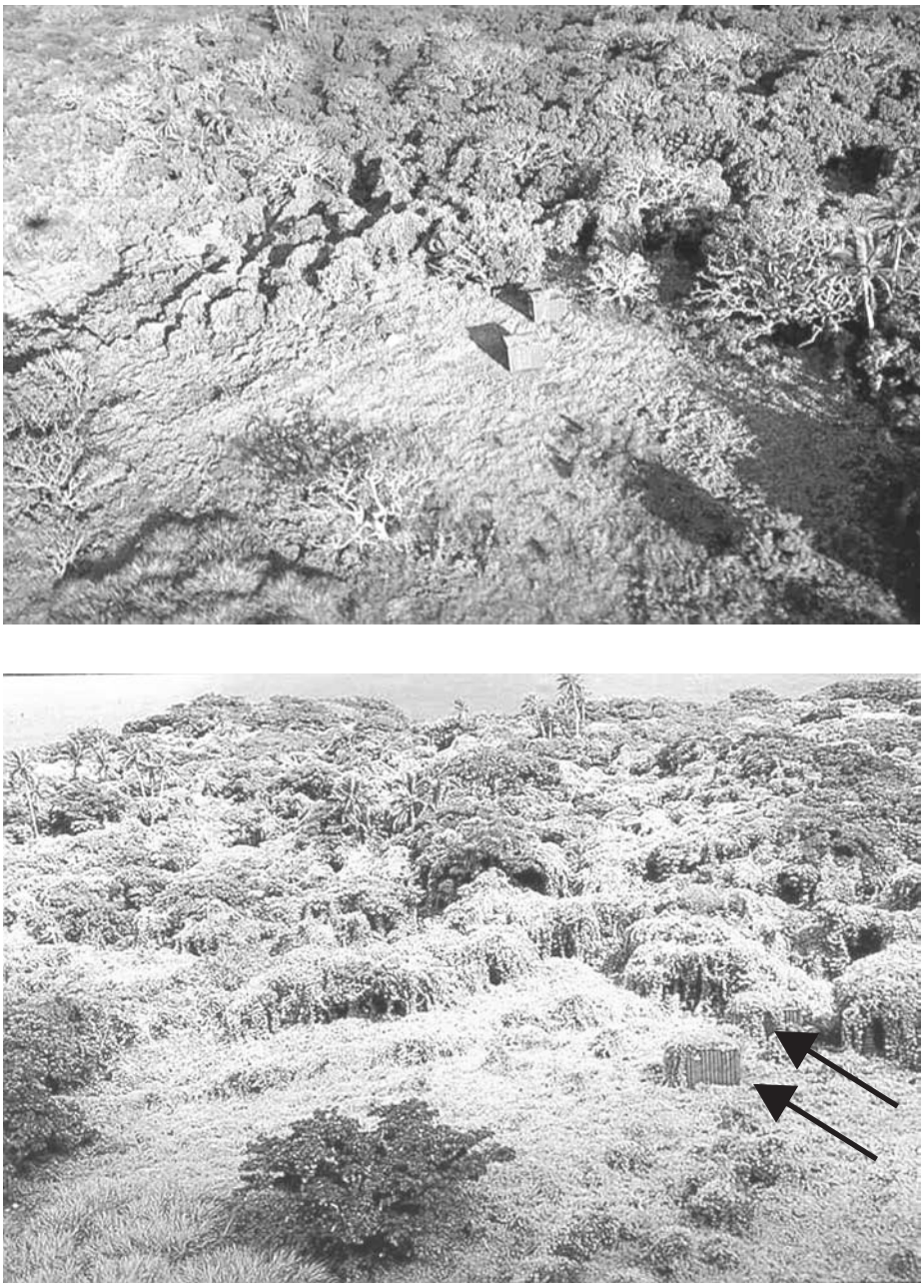
continued next page...

Whole-system context...

(1) an absence of predators; (2) poorly adapted natives with low reproductive vigor; (3) low biodiversity on site; and (4) empty ecological niches.

Disturbance
Some invasives are aggressive enough to establish an infestation in an intact native habitat. Most, however, are opportunistic and favor the opening afforded by some type of anthropogenic disturbance. These can be: (1) chemical changes such as fertilizer, sewage, and nitrogen deposition; (2) physical disturbance such as erosion, bare ground, roads and construction; (3) biological disturbance such as removal of niche plants; and (4) hydrologic disturbance such as irrigation and groundwater pumping.

The modeler's job
Explaining and predicting invasion is a multidimensional process involving many variables. In developing a model it is important to identify, quantify, and incorporate the most significant mechanistic variables. Including too many variables can lead to unreliable predictions because of problems associated with error propagation and dependencies among the variables. Thus, the modeler's job is to find the optimal set of variables that give the most useful predictions.



Before and after

An adverse effect of eradication. The photos show a camp site on Sarian Island, Commonwealth of the Northern Mariana Islands, before (top) and after (bottom) successful eradication of feral goats *Capra hircus* and pigs *Sus scrofa* in 1998 explosively released a previously undetected exotic vine *Operculina ventricosa*. Arrows in the bottom photo indicate the roofs of the two buildings visible in the top photo. Photo by Curt Kessler, Zoology Unlimited.

Discriminant analysis is one statistical method that we can use to classify a species as invasive or noninvasive based on its characteristics. For example, working with Pinus species, Rejm nek (1995) determined which biological characteristics contributed most significantly to a discriminant func-

tion and thus were the best predictors for invasive behavior in pines: (1) small mean seed size with a short chilling requirement; (2) minium juvenile period; (3) short interval between production of large seed crops; and (4) maximum opportunity for dispersal by vertebrates. Similar lists of most significant characteristics can be developed for other species.

Buckaroo Bonzai tackles gorse

My graduate students have taken to calling our approach to model development the "Buckaroo Bonzai" method because we incorporate combinations of eclectic elements, depending on what is most useful. We use biology of the invasive species, a climatic matching model, and ordination methods to incorporate environmental characteristics of currently infested sites.

Our overall goal is to design a system with sufficient flexibility that one can assess the risk of invasion for any weed in any location in California. To start, though, we needed one good question to test such a system. We decided to analyze the likelihood that gorse (Ulex europaea L.) would be an aggressive invader in San Luis Obispo County. The county's WMA was trying to decide whether to plan for an imminent invasion from Monterey County to the north, and we thought maybe we could help.

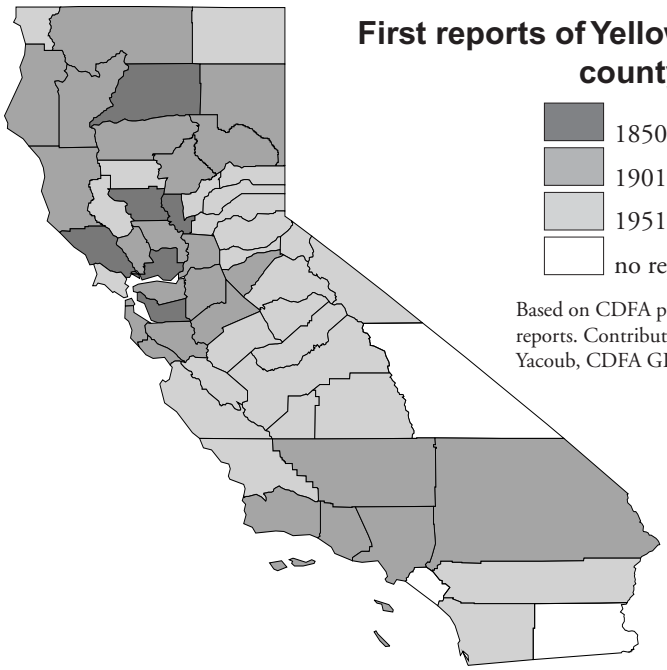
Climate modeling

Many factors can potentially explain a successful plant invasion, but if the climate at a given location is not conducive for growth then it is highly unlikely that a successful invasion will ever occur. So climate is the primary characteristic we use in assessing a site's vulnerability to invasion by a particular plant.

Our literature searches provided us with the native and current invasive distribution range for gorse. Gorse is native to Europe, centering on Ireland, and has been invasive in cool, moist areas including tropical latitudes at high elevations (New Zealand, southeast Australia, Hawaii, Yucatan highlands, as well as the Pacific coast of the US).

For the initial stage of our model development, we focused on the distribution of the species in its native region. We assume that the species has

Current Cartography



Based on CDFA pest damage reports. Contributed by Rosie Yacoub, CDFA GIS Analyst

Weed Watch

Rene Simon, Placer County Agricultural Inspector, reports scarlet wisteria *Sesbania punicea* along Miner's Ravine in Roseville. The invasive plant has been found in riparian corridors in Shasta, Sacramento, Nevada, and Fresno counties, according to Steve Schoenig of the California Department of Agriculture's Integrated Pest Control Branch. Report sightings to Steve at sschoenig@cdfa.ca.gov.

Photo by Gil Nelson, from the University of South Florida's Plant Atlas, www.plantatlas.usf.edu

Readings & Resources

A GLOBAL RESOURCE

A Global Compendium of Weeds

by R.P. (Rod) Randall

Au$165.00 Hardcover, 944pp
2002 RG and FJ Richardson Publishing
www.weedinfo.com.au/bk_main2c.html

Until now, the most comprehensive coverage of the world's weed flora was produced in 1979 by Holm *et al* . (*A Geographic Atlas of World Weeds*) and listed 6,400 species. In this compendium, Rod Randall has compiled a list of almost 21,000 entries comprising over 18,000 weedy taxa and 2,500 alternate name records. The information presented is specifically designed to give a weed risk assessor, or anyone interested in the weed potential of a plant, a condensed report of the status of a species with avenues for finding more information through the extensive reference listing.

WEEDS ON FILM

Brooms: Managing Invasive Alien Shrubs

by Leif Joslyn

$25.00 45 min
2002 Xenobiota Xposures
<www.xenob.com>

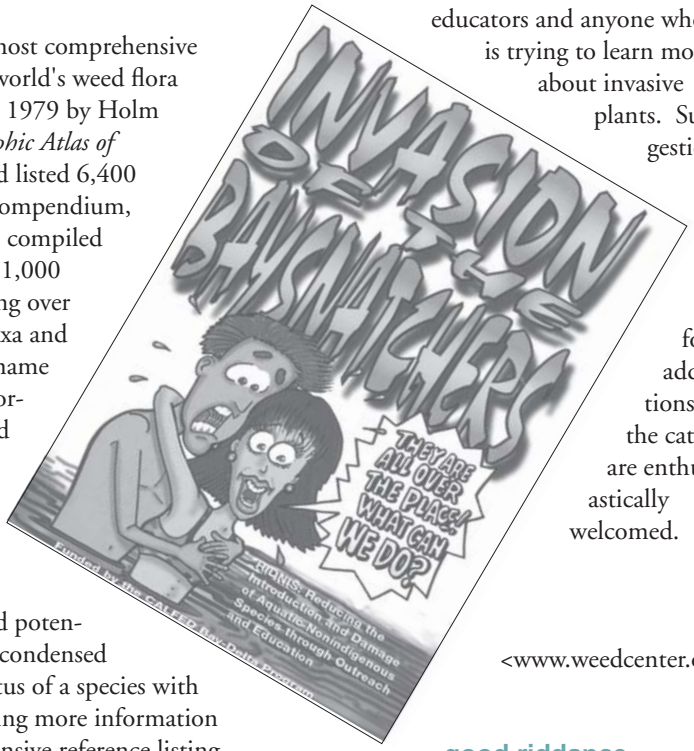
Congratulations to videographer Leif Joslyn on a job very well done. Well-paced, with appealing footage and informative text, this video held my interest throughout. It manages the neat trick of making broom beautiful and menacing at the same time. With the exception of a few minor typos in scientific names, details are clear and accurate, and the many experts consulted give a solid background on the biology and control of one of our worst weeds. I recommend it to anyone.

review by Jake Sigg

A LONG LIST

The Center for Invasive Plant Management has published an ***on-line catalog of educational weed materials*** in the West. With 1,200 entries, including videos, brochures, slide sets, curricula, books, etc. this resource will be useful for educators and anyone who is trying to learn more about invasive plants. Suggestions for additions to the catalog are enthusiastically welcomed.

<www.weedcenter.org>



good riddance

Insion of the Baysnatchers

8-panel brochure

The RIDNIS (Reducing the Introduction and Damage of Aquatic Nonindigenous Species) program has published a colorful and informative brochure on aquatic invaders. <www.ridnis.ucdavis.edu>

TOASTED SHOULDERS

Evaluation of Infrared Treatments for Managing Roadsice Vegetations

by Rob Edgar, Oregon DOT

This report presents information on the effective treatment of roadside vegetation with infrared treatments. [Thanks to Paul Caron of CalTrans] <www.odot.state.or.us/tddresearch/infrared_veg.pdf>

GET LINKED

The National Wildlife Refuge Association's new webpage has extensivve links and descriptions for invasive species programs. <www.refugenet.org> (look under "Refuge Issues")

TAKE OLIVE THEM

History, Biology, Ecology, Suppression, and Revegetation of Russian-Olive Sites (*Elaeagnus angustifolia*, L.)

The National Resource Conservation Service Plant Materials Technical Note No. MT-43 15pp
<http://usgssrv1.usgs.nau.edu/swepic/factsheets/Russian_olive.pdf>

Russian-olive is very invasive in wet-saline environments and certain riparian environments. This paper provides extensive background on the history, reproduction, and treatment of Russian olive.

Russian olive [Photo from Noble Foundation Plant Image Gallery

Local Focus

El Dorado County celebrates Weed Week

The El Dorado County Integrated Invasive Weed Management Program planned an impressive array of programs for the first California Weed Week this July. Their weed tour began on the west slope and continued up to Lake Tahoe, stopping to look at infestations of Yellow starthistle, Scotch broom, Tall white top, and Spotted knapweed along the way. Other efforts included:

- A workshop developed by the Resource Conservation District for homeowners associations.
- An article drafted for a Master Gardeners column.
- Educational flyers posted along the Placerville Bike/Hiking Trail.
- A presentation made to the county Board of Supervisors on the activities of the weed group.

The group also hopes to have a booth for the third straight year at the county's Harvest Fair in September. The group has active projects on roadside vegetation management, and is preparing an educational publication on Yellow starthistle based on one published by the Alameda/Contra Costa County Weed Management Area. In cooperation with the Forest Service, the California Department of Food and Agriculture, and Sierra Pacific Industries, the group helps control Spotted knapweed in the area burned by the 1992 Cleveland Fire.

For more information, contact Senior Agriculture Biologist Wendy West at wendyw@atasteofeldorado.com.

We are our membership... Thank you!

Special thanks to...

Life members:

Elizabeth Crispin (Mt. Shasta) · **Gigi Hurst** (Habitat West, Inc., Escondido) · **Micki Kelly** (Kelly Biological Consulting, San Anselmo)

Sustaining Members:

Greg Archbald (Santa Barbara) · **Peter Brastow** (San Francisco) · **William McCoy** (Berkeley) · **Connie Rutherford** (Ventura) · **Dolores Welty** (Leucadia)

Contributing Members:

Doug Allshouse (Friends of San Bruno Mountain, Daly City) · **John Anderson** (Hedgerow Farms, Winters) · **June Bilisoly** (Portola Valley) · **Martha Blane** (Martha Blane Associates, San Marcos) · **Eva Butler** (Eva Butler & Associates, Sacramento) · **Marian Chambers** (Central Sierra Partnership Against Weeds, Sonora) · **Sarah Chaney** (Channel Islands National Park, Ventura) · **Susan Cochrane Levitsky** (Cameron Park) · **Wilma Follette** (Sausalito) · **Dave Fross** (Native Sons Nursery, Arroyo Grande) · **Jim Hanson** (CalTrans, Oakland) · **Steve Hartman** (CNPS, Reseda) · **Ann Howald** (Santa Rosa Junior College, Sonoma) · **Sarah Jayne** (Irvine) · **Jo Kitz** (Mountains Restoration, Woodland Hills) · **Richard Kust** (Irvine) · **Jennifer Langford** (Jenesis, Avila Beach) · **Elaine & Donald Mahaffey** (CNPS Sea Ranch, Gualala) · **Audrey Miller** (Novato) · **T. Charles Moore** (Sunnyvale) · **Jim & Barbara Peugh** (Friends of Famosa Slough, San Diego) · **Paul Robins** (Yolo County RCD, Woodland) · **David Sands** (Go Native Nursery, LLC, Montara) · **Susan Schwartz** (Friends of Five Creeks, Berkeley) · **Peter Slattery** (Moss Landing Marine Lab, Salinas) · **Jean Starkweather** (Marin Conservation League, San Rafael) · **Don Stiver** (El Cerrito) · **Stan Weidert** (Shingletown) · **Clarence Weinmann** (Oakland Museum of California, Berkeley)

Contributing Institutional Members:

Nature's Image (Grady Banister, Lake Forest)

Institutional Members:

Agri Chemical & Supply (Greg Omori, Oceanside) · **Aquatic Outreach Institute** (Sharon Farrell, Richmond) · **Bitterroot Restoration** (Shengjun Lu, Auburn) · **US Bureau of Land Management** (Al Franklin, Folsom) · **Cache Creek Conservancy** (Jan Lowrey, Woodland) · **California Department of Parks & Recreation** (Rebecca Cull, Livermore; George Gray, Santa Cruz) · **California Department of Parks & Recreation/OHMVR** (Karen Randall, Sacramento) · **Chirman Biological Consulting** (Darlene Chirman, Santa Barbara) · **City of Mission Viejo** (Tom Levene) · **City of Pacific Grove** (Frank Ono) · **City of Palm Desert** (Buford Crites) · **County of San Bernardino Public Works** (Marnie McKernan) · **Dow AgroScience** (Bruce Kidd, Murrieta) · **Elkhorn Native Plant Nursery** (Jean Ferreira, Moss Landing) · **Golden Gate Biosphere Reserve Association** (Natasha Benjamin, San Francisco) · **Golden Gate National Parks Association** (Sue Gardner, San Francisco) · **Huntington Library** (San Marino) · **IPM-PCA Associates** (Steven Ash, San Rafael) · **Land Conservancy of San Luis Obispo** (Mark Skinner) · **Life Science! Inc.** (Lisa Stallings, Sacramento) · **Los Osos/Morro Bay Small Wilderness** (Jim Weldon, Los Osos) · **Marin County Open Space District** (Mischon Martin, San Rafael) · **Milo Baker Chapter, CNPS** (Santa Rosa) · **Monterey County Agricultural Commission** (Eric Lauritzen, Salinas) · **Ocean Trails Golf Club** (Barbara Dye, Rancho Palos Verdes) · **Quail Botanical Gardens** (Julian Duval, Encinitas) · **Rana Creek Habitat Restoration** (Paul Kephart, Carmel Valley) · **S&S Seeds** (Victor Schaff, Carpinteria) · **San Joaquin River Parkway** (Deborah North, Fresno) · **San Mateo County Parks** (David Moore, Redwood City) · **Shelterbelt Builders, Inc.** (Mark Heath, Berkeley) · **Strybing Arboretum, Helen Crocker Russell Library** (San Francisco) · **The Nature Conservancy** (Rebecca Shaw, San Francisco) · **Tom Dodson Associates** (Tom Dodson, San Bernardino) · **Tree of Life Nursery** (Mike Evans, San Juan Capistrano) · **University of California Botanical Garden Library** (Berkeley) · **Ventura County RCD** (Patricia Oliver, Somis) · **Vianasa Winery** (Sam Sebastiani, Sonoma) · **Wilbur-Ellis Company** (Scott Johnson, Sacramento) · **Wildlands Restoration Team** (Ken Moore, Santa Cruz) · **Yosemite National Park** (Sue Fritzke, El Portal) · **Zentner & Zentner** (John Zentner, Oakland)

And welcome to new members:

Emily Briscoe (Southern California Coastal Water Resources Project, Corona Del Mar) · **Lauren M. Brown** (Science Applications International, Corp., San Luis Obispo) · **Jeremy Endsley** (Sacramento) · **Carly Gibson** (Fawnskin) · **Kathryn Mazaika & Mark Langan** (San Francisco) · **Thomas W. Mulroy** (Science Applications International, Corp., Santa Barbara) · **Peter Schuyler** (Santa Catalina Island Conservancy, Avalon) · **Russell Scofield** (BLM, Pioneertown) · **Frederick Warren** (Richmond) · **Wendy West** (El Dorado County Dept. of Agriculture, Placerville)

Weed-free forage: Coming to a forest near you

Project aims to stem spread of weeds by horse-campers and livestock.

The weed-free forage policy developed through the Sierra Nevada Framework for Conservation and Collaboration is now being extended to all California national forests. Beginning in 2003, all Forest Service, Bureau of Land Management and National Park Service lands in California will require the use of certified weed-free feed when horse-camping, packing or staying on federal lands for periods of time. Already, cattlemen who use public land for grazing are being told about required weed-free certifications for feeds that might be brought onto public land for cattle.

Weed-free certification

Weed-free feed or forage includes baled hays, grasses, alfalfa or any baled combination, plus straw and mulch. California certified weed-free forage must be free of propagative parts of state-listed noxious weeds. Cubes are not considered weed free unless they are processed from fields that have been certified as weed free. Baled feed and cubes used on all federal public lands have to be certified weed free by a California county agricultural commissioner. When trail-riding on public lands for any length of time agencies are suggesting that horses be "purged for 12 hours by the feeding of California certified weed-free feed" before entering public lands.

California has between 750,000 to 1 million head of horses and experts have estimated that these animals consume between 20 percent and 25 percent of the hay produced in the state. In addition to hay growers, the horse industry also will likely be the most heavily impacted by the new weed-free forage regulations, followed by the cattle industry.

Opportunity or burden?

Will this be an opportunity or a burden for hay growers? Kiran Johl, Associate Director for the California Farm Bureau Federation's National Affairs Division, says, "Farm Bureau recognizes the motivation for a weed-free forage certification program. We hope what develops is a workable program that provides our hay producers with a value-added product they'll be adequately compensated for, rather than a burden."

It's anticipated that once the three federal land agencies begin their weed-free policy requirements in 2003, the California Department of Parks and Recreation, along with various county and local parks and trail agencies, will follow suit. Already, CalTrans requires weed-free straw for erosion control and landscaping in the state highway system. Santa Clara County currently requires it at its public stables and parks.

Silver twine

"We started certifying growers last year," agricultural biologist Eric Wylde of the Santa Clara County agricultural commissioner's office said. "We presented this program as a new marketing opportunity because, once the closure orders are in place, the demand will be there. Our growers believe there'll be value down the road in establishing name recognition for these certified hays.

"We're currently charging by the hour for certification services and think the process is adding about 16 cents a bale to the cost of hay," Wylde said. "There may be other costs associated with growing, depending on cultural practices."

The way Santa Clara County's program works is that growers, once their

continued next page...

Quotable:

"For this typical seaside scene, a cooling white and yellow garden is offered to soothe the eyes. Two fine shrubs that can provide structure to this coastal garden are *Cytisus scoparius* and *Rosa rugosa*. *Cytisus scoparius* has gotten something of a bad rap because it is aggressive, a garden bully, but if your Scotch broom threatens to run amok, whack it right back. Or, if whacking is not your thing, choose a compact cultivar such as "Moonlight," an evergreen form peppered with pale yellow blossoms that rarely exceeds 5 feet, or "Cornish Cream," also a well-behaved variety with creamy white pea-like blossoms."

From "Gardening on the edge: Before you throw in the trowel, here's a grower's guide to seaside gardens," by Sandra Gorry in the San Francisco Chronicle, June 29, 2002, page 1WB. [Reassuringly, many letters to the editor followed.]

"...be it Resolved by the Assembly of the state of California, the Senate thereof concurring, That the second week of July be designated and recognized as Harmful Nonnative Weeds Awareness Week in California; and be it further Resolved, That on the occasion of Harmful Nonnative Weeds Awareness Week, the Legislature encourages all Californians to participate in activities to raise awareness of the scourge of these weeds, and of methods to prevent their pernicious spread..."

From California Assembly Concurrent Resolution No. 218 introduced by Assembly Member Cogdill on June 4, 2002

The WILDLAND WEED CALENDAR...

4th Annual Weed Management Area Statewide Meeting

September 23th-24th, 2002
Woodland, CA

Come share success stories and challenges with stakeholder groups from around the state. Presentations will cover program updates from various projects, funding guidance, information on new tools in weed control, and a mapping workshop. For more info, email Steve Schoenig at sshoenig@cdfa.ca.gov.

"The Power of Nature", the 29th Annual Conference of the ***Natural Areas Association (NAA)***

October 2-5, 2002
Asheville, NC

Focusing on conservation of biodiversity in natural areas, adaptive ecosystem management, and nature reserve design. One session deals with setting priorities for management of invasives.

<www.naa.org>

"Costs & Consequences of Invasive Plants", CalEPPC Symposium 2002

October 11-13
Sacramento, CA

[see page 4 for details]

Ecological Restoration (SERCal)

October 24-27, 2002
North Lake Tahoe, CA

Sessions on soil and water quality in the Tahoe basin, public use of restoration areas, forest dynamics, montane riparian and wetland restoration, invasive species management, and native grasslands.

<www.sercal.org>

California Botanical Society's Biennial Graduate Student Meeting

February 15, 2003
UC San Diego, CA

Graduate students involved in research projects in any area of botany (ecology, evolution, conservation, floristics, morphology, development...) are encouraged to attend. The venue is ideal for students to gain valuable experience giving presentations in the standard format of scientific meetings and to meet others involved in botanical research.

<www.calbotsoc.org>

"Restoration with a View: Sustaining Fragile Habitats", the 9th Annual Conference of the ***California Society for Invasive Plants in Natural and Managed Ecosystems***

November 2003

Early notice on a conference that will be a joint effort of the Weed Science Society of America, The Ecological Society of America, EPPCs from around the country, the Natural Areas Association, Society for Range Management, and the Society for Ecological Restoration. Nelroy Jackson and Carla D'Antonio are Co-Chairs for the conference.

...continued from previous page

fields have been inspected, are given special silver twine that is used in baling and that designates the feed has been certified weed free.

The California Department of Food & Agriculture recently hired two two seasonal Weed Free Forage Coordinators, with financial support from the Forest Service and the Bureau of Land Management. Bonnie Davis and Stephanie Balsdon will be managing outreach to equestrians, feed retailiers, growers, bailers, shippers and agency personnel.

Other states, including Colorado, Utah, Wyoming, Montana and Idaho, already have regulations requiring weed-free forage on public lands.

For more information, see <www.WeedFreeForage.com>. This article is in part excerpted from Ag Alert*, May 22, 2002, by the California Farm Bureau Federation.*

Letters

Biological bombshells

In an age when bioterrorism is a growing concern, the question should be asked- Can exotic or genetically-modified weeds be weaponized? Weed disasters have typically occurred by accident, and the security analysts focus on pathogens and toxins. Certainly there is a history of plant toxins harming humans (such as Lathyrus peas) and agricultural resources (such as the rangeland weed *Halogeton glomeratus*). Ricin, a toxic compound isolated from castor beans, has even been researched by the U.S. Army.

But this ignores the potential for long-term destruction from plants that wreak havoc through ecological disruption. The purposeful introduction of weeds that interfere with ecosystem processes, degrade habitat, poison humans or livestock, or invade waterways could be used to drain us of economic and natural resources.

We should have an "incident command system" set up to respond to such a threat, such as what the Centers for Disease Control has. The USDA has an Animal Health Emergency Management Plan, but no comparable plan exists to cope with the deliberate introduction of a disastrous exotic pest.

For true homeland security, we need to pay more attention to the potential threat of weaponized exotic plants.

Bud Hoekstra
San Andreas, CA

Views expressed are those of the authors, not necessarily those of CalEPPC. Send letters to CalEPPC News, 1442-A Walnut St. #462, Berkeley CA 94709 or email to dwjohnson@caleppc.org. Letters may be edited for brevity.

CalEPPC Membership Form

We're working to protect California's wildlands from invasive plants—join us!

CalEPPC's effectiveness comes from a strong membership, including scientists, land managers, policy makers, and concerned citizens. Please photocopy the form below, complete, and mail with your payment. Additional donations are always welcome to support our projects; we are a 501(c)(3) nonprofit organization, and donations beyond basic membership rates are tax deductible.

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