



Cal-IPC News

*Protecting California's Natural Areas
from Wildland Weeds*

Vol. 13, No. 1, Spring 2005

Quarterly newsletter of the California Invasive Plant Council



Exceptional year for wildflowers... and Saharan mustard

Saharan mustard (Brassica tournefortii) invading dunes near Borrego Springs (shrubs at right of photo). This winter's rains have generated exceptional growth in both native desert wildflowers and the invasive mustard. See inside cover for more information. (Photo Mike McCrary)

Inside:

Which weeds dominate southern California riparian systems?	4
Tools: Basal bark treatment, and broom lopping results	8
Japanese Knotweed Red Alert!	10
Oakland discusses herbicides	11



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A California 501(c)3 nonprofit organization

*Protecting California's natural areas
from wildland weeds through
research, restoration, and education.*

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Cal-IPC News

Spring 2005 - Volume 13, Number 1

Editors: Doug Johnson and Elizabeth Brusati
Cal-IPC News is published quarterly by the California
Invasive Plant Council. Articles may be reprinted with
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From the Director's Desk

Taking a stand

The use of herbicides for wildland weed control can be a contentious issue. Many practitioners believe that herbicides are one of the most valuable tools in their restoration toolbox, while others are determined to avoid their usage entirely.

What is Cal-IPC's role? This spring, the Oakland watershed group Friends of Sausal Creek contacted us as they worked to secure an exemption to the city's strict IPM (Integrated Pest Management) ordinance. After nearly a decade of restoration work in the watershed, the group had decided that it needed to apply herbicides in a "cut stump" treatment to some vigorous resprouters, such as eucalyptus, in particular situations. (See article page 11.)

In crafting our letter of support for their work, it became clear that what Cal-IPC supports is the right of local communities to make informed decisions on their approach to restoration work. This means sharing with them the current state of knowledge and practice from other restoration efforts around the state.

Given that "invasive species" and "toxics in the environment" are both environmental concerns, it is no wonder that major groups like the Sierra Club have failed to come to grips with the complexity. It was notable that the cover article in last May's *Sierra*, about a raft trip down the Colorado to remove saltcedar, mentioned that the author's crew used herbicides on the stumps of trees they cut down.

It is important that those who use herbicides respect the concerns of those who do not, and that these in turn realize that restorationists who do use herbicides do so in the reasoned belief that their judicious application has an ecological net benefit and does not put human communities at risk. When either "side" stops giving the motivations of those with differing opinions the benefit of the doubt, dialogue suffers.

It is also important that we continue to accrue good science on both the intended and unintended affects of herbicide use for restoration, and that this science be presented accurately for public interpretation. In a case that shows the potential for misinterpretation, a recent study by University of Pittsburgh biologist Rick Relyea on the lethal effects of RoundUp on aquatic amphibians has been presented in ways that can easily lead to the perception that legal, appropriate use of glyphosate formulations kills frogs. (Terrestrial glyphosate formulations like RoundUp cannot legally be used in an aquatic setting, while other glyphosate formulations using different adjuvants are labelled for safe use in aquatic situations, and would be used by any but the most irresponsible restorationist.)

In a comment passed on to me, an older Oakland resident concerned about herbicides chided restorationists to "think of the children!" That is precisely what they are doing. As the recent *National Geographic* article on invasive species concludes, future generations will find it difficult to forgive us if we fail to address this major problem.



On the Cover: Uprooted mustard plants spread seed by "tumbling" in the wind. Volunteers are needed to conduct driving surveys to map the plant's spread by noting the amount of mustard cover along California desert right-of-ways. Mapping protocol, photos of cover classes, and more information on Brassica tournefortii can be viewed at www.cal-ipc.org. (Photo Jason Giessow)

Wildland Weed NewsNewsNewsNewsNews

California Invasive Weeds Awareness Week is July 18- 24, 2005. Invite local legislators—county, state and federal—to view your weed management activities. What representative could resist a photo with a weed wrench? The California legislature is scheduled to be on recess and most reps will be in their home districts. A Weed Week poster and a packet of suggestions for activities are available on the Cal-IPC website. <www.cal-ipc.org>

AB 577, authored by Lois Wolk (D-Davis), passed the Assembly's Water, Parks and Wildlife Committee on April 12. The bill would require the state's Secretary of Food and Agriculture and the Secretary of Resources to develop a statewide plan for management and control of all invasive species by Jan. 1, 2007. The bill must now be heard by the Assembly Committee on Appropriations. <www.leginfo.ca.gov/>

The **National Aeronautics and Space Administration** (NASA) has become the 13th Cabinet agency to join the National Invasive Species Council (NISC). NASA will make satellite data, computer modeling and engineering experience available to NISC. This work is part of the Applied Sciences Program in NASA's Science Mission Directorate, which partners with public, private, and academic organiza-

tions to extend the benefits of NASA research to innovative solutions for decision support for applications of national priority. <InvasiveSpecies.gsfc.nasa.gov>

Researchers using an aircraft flying at the edge of space measured leaf nitrogen and water concentration to spot **invasive *Myrica faya*** trees starting to take over native forests near Hawaii's Kilauea Volcano. Study published in *Proceedings of the National Academy of Sciences* (March 2005). <news-service.stanford.edu/news/2005/march9/invade-030905.html>

Columnists for the **National Gardening Association** addressed the issue of invasive plants in their "In My Garden" regional reports on February 17, 2005. <www.garden.org/regional/report>

Middlebrook Gardens, a garden design/build firm in San Jose, has begun a "Lose The Lawn" program directed toward homeowners. The program extols the benefits of switching from lawns to "more natural, efficient and aesthetically unique options," and provides information on how to make the switch. Lose the Lawn also offers to work with local high school students. <www.LoseTheLawn.com>

The Sacramento Bee reported (3/14/05) that **agricultural inspections at ports of**

entry fell markedly between 2002 and 2004. The eight percent decrease occurred even as imports kept rising, and coincided with the Homeland Security Department replacing the Agriculture Department at the inspection stations. <www.sacbee.com>

Weed List revision update: 150 plants now have draft assessments posted at www.cal-ipc.org, with the final 100 coming in July. Review species you are familiar with and give us your comments by August 31. The revised list will be presented at the Symposium in October. Click "List Revision" from Cal-IPC home page.

Got year-end money? If your organization has educational funds that need to be spent this fiscal year, consider purchasing outreach materials from www.cal-ipc.org.

Seen the Grass ID CD? Joe DiTomaso's Grass and Grass-like Weeds of California CD ROM has an expert key with a photo library to help with grass identification. Available from www.cal-ipc.org.

Board nominations: Got a colleague who would make an excellent member of the Cal-IPC Board of Directors? Send 2006 nominations to current Board President Steve Schoenig at sschoenig@cdfa.ca.gov.

Save the Date!

2006 Cal-IPC Symposium

October 6-8

Chico

Information posted at
www.cal-ipc.org

2nd Annual Photo Contest

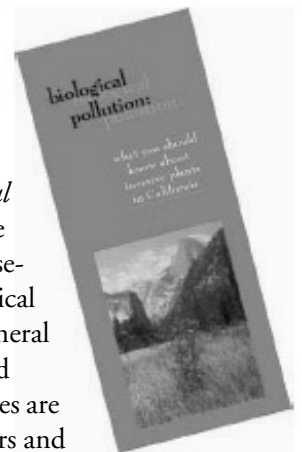
Start selecting your best weed photos for this year's contest! Categories include:

- Best weed impacts shots*
- Best weed workers shots*
- Best landscape shots*
- Best specimen shots*
- Best weed humor shots*

Digital submissions preferred, to edbrusati@cal-ipc.org.
Deadline September 1, 2005.

Coming Soon...

The new *Biological Pollution* brochure describes the consequences of biological invasions for a general audience. Targeted distribution venues are park visitor centers and public events. Special early order price: \$110 per pkg. of 1,000 brochures www.cal-ipc.org or 510.843.3902



Which Weeds Dominate Southern California Urban Riparian Systems?

by Brad Burkhart, Burkhart Environmental Consulting, and Mike Kelly, Friends of Los Peñasquitos Canyon Preserve

Since the late 1960s there has been a turnaround in national and state attitudes towards urban riparian systems. We have moved from a philosophy that viewed such systems as either water sources or sewage/stormwater conveyance systems to recognizing that properly maintained wetland habitats are essential to maintaining water purity and wildlife habitat values. In the process, riparian habitat restoration and preservation have become high priorities.

Urban riparian systems in Southern California are rarely natural systems. Although we often hear that 90-95% of historic California wetlands have been filled or drained, almost no perennial riparian systems existed in Southern California before urban development (Ellis and Lee 1919). Most drainages were episodic, flowing only a few months of the year during larger storm events.

Now, many formerly episodic rivers and creeks in the region carry water year-round due to over-irrigation of residential and commercial landscaped areas. New small wetlands have sprouted up in finger canyons and arroyos where none existed decades ago, created by this same human-caused runoff. For example, a USGS water flow station on Peñasquitos Creek in San Diego shows that this once episodic creek became perennial in 1982, persisting since then even through several bouts of drought. This reflects the intense urbanization of this watershed that began in the 1970s and continues today (White and Greer 2002).

Besides a year round water supply, urbanization of the landscape has also introduced many non-native ornamental

plant species able to invade and exclude native vegetation cover in riparian systems. However, unlike accidental runoff that can benefit wetland habitat expansion, plant invasions usually decrease habitat values. Although invasive species may provide some habitat values, such as roosting and

various invasive weed species dominate riparian systems. To the best of the authors' knowledge, few comprehensive and quantitative surveys of riparian/wetland systems have been carried out in Southern California. Therefore, many restorations tend to focus on the most invasive species such as giant reed,

ignoring other species waiting in the wings to fill their niche once we eradicate the most dominant species.



Removing *Arundo* on the San Diego River. (photo by author)

nesting sites, pollen and nectar for pollinators, and foraging opportunities, the monocultures these exotic species form displace a native habitat with greater diversity of shelter, structure and food for native fauna (Ohmart 1982). Additionally, some species like giant reed (*Arundo donax*) or tamarisk (saltcedar, *Tamarix ramosissima*) transpire water at such high rates they may drive the water table below the surface, eliminating surface flow (Sudbrock 1993, Johnson 1986, Hoddenbach 1987).

For these reasons, eradication of highly invasive exotic species and replanting of invaded areas with native wetland species have become primary goals of wetland restorationists. Yet, for the most part, we possess only a visual and qualitative understanding of the degree to which

Mapping a watershed

To address this problem, Burkhart Environmental Consulting (BEC) and Kelly and Associates (K&A) submitted a successful proposal on behalf of the Friends of the Mission Valley Preserve, a non-profit organization focused on the San Diego River, to the California Water Quality Control Board (RQCB) in late 1999 to utilize sewer spill fines assessed against the City of San Diego to map 11.5 miles of freshwater wetland invasive weeds on the San Diego

River within the city limits. The mapping used low elevation aerial photos at 50-scale that were groundtruthed on foot. The areas of cover were then planimeted off a final base sheet to determine actual areas of cover for each weed category.

This project provided clear maps showing the acreages of infestation of the major weed species covered by the report for the City's river corridor. Significantly, these maps cover the majority of urbanized watershed area along this drainage, which has been designated by the state as a Natural Open Space Conservancy. This summary should give the restoration community a preliminary quantitative assessment of the amount and extent to which highly invasive exotic weeds have established in one of Southern California's major riparian systems,

and the assessment should be applicable to other systems in the area.

We selected seven categories of invasive weed species mapping (Table 1; a more extensive list of species encountered during our survey appears in Table 3). Each category delineates a single weed species, except broadleaf trees and palms, where several species were covered under one mapping category. All of these species were part of the original project design parameters except castor bean (*Ricinis communis*), which was added after it became apparent during the groundtruthing effort that it dominated large areas along the river corridor.

The study area runs from Interstate 5 in the west (starting about 1 mile from the ocean) to the Santee City border in the east, excluding Mission Trails Regional Park, which has largely eliminated invasive species within their borders. Approximately 438 acres of wetland habitat were surveyed, with 65.6 acres or 15% of wetland cover constituting highly invasive weed species cover.

Palm trees were divided into large (6%), medium (37%), small (63%), and seedling palms. No attempt was made to assess the size of broadleaf tree species in the mapping project, but some preliminary data on this subject was obtained from later eradication efforts. Broadleaf trees were distributed differently than mapped palm trees: more large (24%) and medium (46%) versus small (31%).

Arundo, broadleaves dominate

Two categories of weed cover account for the majority of weed acreage. By far, the highest level of cover comes from giant reed (58% of all exotic weed acreage mapped). Broadleaf trees account for another 25%, with the greatest coverage contributed by Brazilian pepper (10.4%) and eucalyptus species (9.6%), followed by *Ludwigia* (8%), pampas grass, palms, castor bean, and tamarisk.

This cover is somewhat deceptive, however, since the numbers of pampas grass, palms, and tamarisk counted (3,221) are nearly one third more than the number of broadleaf trees counted. The number of palms and palm seedlings (which were probably undercounted) is over half as great as all broadleaf trees (1,160 compared to 2,073). Nevertheless, giant reed and exotic broadleaf trees are clearly the top two weed types in need of control.

Table 1: Cover of Weed Species Mapped on the San Diego River

Weed species	(All areas)			(City-owned property)		
	Acres	%Cover	Nos.	Acres	%Cover	Nos.
Giant Reed (<i>Arundo donax</i>)	37.95	57.8%	-- ¹	11.33	51.5%	-- ¹
Pampas Grass (<i>Cortaderia selloana</i>)	0.55	0.8%	1,970	0.39	1.9%	1,411
Exotic Broadleaf Trees						
Brazilian Pepper (<i>Schinus terebinifolia</i>)	6.85	10.4%	649	2.99	13.8%	263
Eucalyptus (<i>Eucalyptus</i> spp.)	6.27	9.6%	975	1.61	7.3%	164
Evergreen Ash (<i>Fraxinus udhei</i>)	0.63	1.0%	91	0.25	1.1%	33
Other Exotic Trees ²	2.48	3.8%	358	0.88	4.0%	105
Total Broadleaf Trees:	16.23	24.7%	2,073	5.73	26.0%	565
Palm Trees ³						
Large Palms	0.4	0.6%	37	0.25	1.1%	23
Medium Palms	1.37	2.1%	194	0.86	3.9%	122
Small Palms	0.68	1.0%	392	0.23	1.0%	121
Total Non-Seedling Palms:	2.45	3.7%	623	1.34	6.1%	266
Total Seedling Palms:	0.07	0.1%	538	0	0.0%	31
Castor Bean (<i>Ricinis communis</i>)	2.42	3.7%	-- ¹	1.97	9.0%	-- ¹
Tamarisk (<i>Tamarix ramosissima</i>)	0.98	1.5%	91	0.24	1.1%	29
Ludwigia (<i>Ludwigia peploides</i>)	4.97	7.6%	-- ¹	1.01	4.6%	-- ¹
TOTALS:	65.62⁴	100%		22.01	100%	

¹ Numbers not counted for these clonal species.

² Including: lemon bottlebrush (*Callistemon citrinus*), California pepper (*Schinus molle*), Carrotwood (*Cupaniopsis anacardioides*), Chinese elm (*Ulmus parvifolia*), common fig (*Ficus carica*), myoporum (*Myoporum laetum*), oleander (*Nerium oleander*), other minor species.

³ Mainly Mexican fan palm (*Washingtonia robusta*) and Canary Island Palm (*Phoenix canariensis*)

⁴ Out of approximately 438 acres surveyed in the watershed; this represents 15% of the watershed with invasive species cover.

It is important to note that, when subsequent restoration work was implemented, greater acreage and numbers of plants were found to occur on sites than determined from aerial mapping and groundtruthing (an underestimation due to often impenetrable vegetation).

Approximately 20% more acreage of giant reed was encountered during removal at the pilot restoration site than was shown on project maps. Numbers of individual trees were underestimated by 68% overall, while trees greater than 12-inch diameter at breast height were underestimated by almost 300%

(see Table 2). This was surprising because one would think the larger trees would be the most apparent on aerial photos. As it turned out, the single largest canopy exotic tree, eucalyptus, had no distinct chromatic signature on the aerials unless its shadow could be detected falling outside the riparian area. By comparison, giant reed, Brazilian pepper, and even castor bean had more or less distinct signatures on the aerial photos. These problems were anticipated in some sections of the initial study and percentage-increase fudge factors were added for both number

continued page 12

Conference Reports

Summaries contributed by Peggy Olofson, Elizabeth Brusati, and Wendy West.

The Third International Conference on Invasive *Spartina* was held in San Francisco November 8-10, 2004. The conference featured presentations on technical research and control projects from around the world, including China, Spain, and Tasmania. An expert panel assessed the treatment strategy proposed by the Coastal Conservancy's Invasive *Spartina* Project for San Francisco Bay. More information at www.spartina.org.

A **Goat Summit**, held January 25, brought land managers together at Fort Mason in San Francisco to learn how to achieve their vegetation management goals using goat grazing. The program, organized by the San Francisco Department of the Environment, included presentations on how goat grazing works, case studies of different management situations, and considerations for both goat providers and clients. Presenters were Dr. An Peischel (of Goats Unlimited and Tennessee State University Cooperative Extension) and Dr. Roger Ingram (Livestock and Natural Resources Farm Advisor for Placer and Nevada Counties). The afternoon session was devoted



Ken Moore, 2004 recipient of the Cal-IPC Golden Weedwrench Award for Land Manager of the Year, demonstrates the drill injection method he uses as one of the tools of the trade at the Eucalyptus control workshop.

to group projects designing management plans for different scenarios, including fuel reduction, riparian restoration, and yellow star thistle removal.

While goats can be a good tool in some situations, land managers must define their objectives clearly and research prices and goat providers carefully before hiring a provider. It is important to check references for providers, to ensure their goats have experience with the plants you want to remove. Some land managers have had bad experiences with goats damaging native plants or spreading invasive seeds, so if you have never used grazing before, you should call around to hear about other people's experiences. Damage to non-target plants can be minimized by caging the plants, but that is labor-intensive.

If you are interested in learning more about goat grazing for vegetation management, Roger Ingram runs a Browsing Academy through U.C. Cooperative Extension. The next workshop will be held September near Marysville or Colfax. (Contact Roger at rsingram@ucdavis.edu for more information). Several state cooperative extension departments also publish articles on using goats for vegetation management.

The 6th annual **National Invasive Weeds Awareness Week** took place at the end of February. Eight representatives from CALIWAC (the California Weeds Awareness Coalition) trekked across the country to join weed workers from thirty other states in Washington, DC for the week's events. Along with agency briefings with USDA and Department of the Interior staff, the crew met with other invasive/exotic plant councils and non-governmental organizations.

Perhaps most importantly, the CALIWACers went to the Hill and met with legislative staff in 23 Congressional offices to discuss California and nationwide weed issues, especially funding for Weed Management Areas through S.144. The team dropped off info packets at 30 other legislative offices, covering more than twice as much ground as in previous years.

CALIWAC's message was heard and

remembered – many staffers were familiar with the issue and remembered the team's visit from last year's event. Some excellent discussions occurred with legislators and staffers, especially about creative avenues for funding. Generally, attendees felt that the legislators' staff members were engaged and interested. Most offices were



Cal-IPC Boardmember Dan Gluesenkamp with new pal, Senator Dianne Feinstein at NIWAW-6. *Photo Bob Case*

interested in signing a "Dear Colleague" letter supporting for full appropriations of \$15 million authorized by the Noxious Weed Control and Eradication Act of 2004. Dan Gluesenkamp and Gina Skurka drafted a letter for California representatives. The letter is posted on the NIWAW website (www.nawma.org) as a sample.

Control of Blue Gum Eucalyptus in Coastal California was the topic of a workshop organized by the Elkhorn Slough National Estuarine Research Reserve's Coastal Training Program at Moss Landing in Monterey County. A follow-up to last year's workshop on ecology and impacts of eucalyptus, this year's program featured presentations on planning and implementing control projects, followed by a fieldtrip to the Elkhorn Slough NERR. Presenters described the need for a biological assessment to determine when removal of eucalyptus is appropriate, methods of community outreach to build support for removal projects, techniques for cutting and removing eucalyptus or killing it in place, and monitoring after removal. Don Seawater described both high-end (garden gazebos) and low-end (mulch) uses for removed eucalyptus wood.

After lunch, presenters described case studies of eucalyptus control efforts in the Bay Area and Santa Cruz. During the field trip, Ken Moore described his favorite techniques for eucalyptus removal, and Cammy Chabre led a walk through an oak woodland restored after

eucalyptus removal.

The Coastal Training Program's new website at www.elkhornsloughctp.org contains presentations from both the 2004 and 2005 eucalyptus workshops, as well as information on future training programs. In addition, the Q&A section allows you to submit queries on eucalyptus to be answered by the CTP staff.

The 2nd **Invasive Weeds Awareness Day at the Capitol**, held March 9th in Sacramento, was a huge success! Organized by the California Invasive Weeds Awareness Coalition (CALIWAC), the day included meetings with agency heads and legislators at the state capitol. Secretary for Resources Mike Chrisman and Secretary for Food and Agriculture A.G. Kawamura spoke to the standing-room-only audience in the morning. Both agency heads noted that increased coordination to stop the introduction and spread of invasive species was a top priority for their respective agencies.

Fifty-three weed workers—including a few stalwarts who traveled from southern California—attended the afternoon session, in which in teams met with legislators and/or staff members in eighty office to discuss Weed Management Area funding, the California State Weed Plan, and California Invasive Weeds Awareness Week. An informational packet, including position statements and

contact information, was left with each office visited as well as at the 37 additional offices where we were not able to set up a meeting, giving full coverage at all legislative offices! (We covered twice as much ground as last year when we met with 45 offices and dropped information at 10 more.)

Our message was heard – even in a difficult budget climate, attendees reminded legislators that invasive and noxious weeds don't stop spreading. Many legislators and staff members remembered CALIWAC from last year, and were glad to see us returning with silk yellow starthistle bouquets, invasive weed note pads and CALIWAC pins in hand.

A wrap-up session allowed attendees to share some of the great connections made during the afternoon, and some of the ideas that flowed from discussion with legislative



Day at the Capitol participants Bethallyn Black, Bob Case, and Ralph Kraetsch—all from Contra Costa County—bring information and yellow starthistle bouquets to legislators.

staff. Especially encouraging were connections made with legislators representing urban districts, and it was agreed that more emphasis needs to be put on this next year.

Discussions about funding avenues turned up several ideas concerning potential bond funds, grant access, and road fees—lots for CALIWAC to follow up on.

Regulatory Update

EPA Statement on Pesticide Applications Near Water

Summary of January 28 EPA Statement, edited from info in Aqua Technex online newsletter, at <newsletter.baron-co.com/?id=10&aid=67>

In recent years, courts have been faced with the question of whether the Clean Water Act requires an NPDES (National Pollutant Discharge Elimination System) permit for pesticide applications (e.g. *Headwaters v. Talent Irrigation District*, or “Talent decision”). As a result, public health authorities, natural resource managers, and others whose work relies on pesticides have expressed to EPA their concern and confusion about whether they have a legal obligation to obtain an NPDES permit when applying pesticides registered for aquatic use to or over waters of the U.S. They were also concerned about the impact such a requirement would have on their ability to accomplish their missions.

EPA's interpretive statement and proposed

rules are intended to address these concerns and clarify jurisdictional issues between the Clean Water Act and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) pertaining to the application of pesticides. EPA solicited public comment on an interim statement and guidance in a Federal Register notice published 8/13/03 and received more than 400 comments expressing a wide range of views.

The interpretive statement and proposed rule say that application of a pesticide to waters of the U.S. consistent with all relevant requirements under FIFRA does not constitute the discharge of a pollutant that requires an NPDES permit in the following two circumstances:

1. Application of pesticides directly to U.S. waters in order to control pests. Examples include applications to control mosquito larvae, aquatic weeds or other pests.

2. Application of pesticides to control pests present over or near waters of the U.S., that results in a portion of the pesticide being deposited to water.

Clarification of these issues is important because doubt over a requirement to obtain an NPDES permit can impede the ability of local officials to quickly control pests, such as mosquitos that may carry communicable diseases like West Nile virus, or invasive species that may damage natural resources. EPA indicates that existing regulation for pesticides under FIFRA adequately safeguard human health and the environment without imposing undue burden on local governments and others that rely on pesticides.

Copies of the Federal Register notice that contains the interpretive statement and proposed rule are available on EPA's web site at <www.epa.gov/npdes/agriculture>.

The Basal Bark Method of Applying Triclopyr Herbicide

By Bill Neill, Riparian Repairs and Team Arundo Angeles

As we celebrate the 5th anniversary of Cal-IPC's *Invasive Plants of California's Wildlands* (UC Press, 2000), I would like to offer some insights about control methods that were not fully appreciated when the book was assembled during the late 1990's. My comments address basal bark and foliar treatment methods using Pathfinder II and Garlon 4 formulations of triclopyr ester herbicide.

Basal Bark Treatment of Castor Bean

Over the past five years I have treated many thousands of mature castor bean plants in numerous riparian corridors, stream channels, natural areas and flood control basins of Los Angeles, Orange and Riverside Counties, all without felling trees or cutting bark. In the early 1990s, while organizing volunteer groups to remove tamarisk in desert areas, I learned that the basal bark method using Pathfinder II is effective on tamarisk trunks less than about 4 inches in diameter (see Spring 1997 *CalEPPC News*). So when I started to work professionally on invasive plants in coastal watersheds, I wanted to determine the trunk diameter limit for controlling castor bean by basal bark treatment.

I discovered that castor bean is highly susceptible to basal bark applications of triclopyr. The largest castor bean trees that I've encountered in the Los Angeles area—with trunk diameters of 10-12 inches, heights of 15 feet, and crowns 25 feet across—are susceptible without the need for adding frill cuts to the lower trunk. Sometimes a second treatment has proven necessary, and if the lower bark is cracked and partly detached from the trunk, then I spray bark higher than the lowest 8-12 inches of the trunk.

But I never need to frill-cut or girdle a castor bean trunk with a hatchet, let alone cut off trunks and limbs completely for a cut-stump application.

Usually I use a one-quart finger-trigger spray bottle to apply Pathfinder II, with the nozzle adjusted to discharge a coarse spray or straight stream depending on the stem sizes. A large multi-trunk plant can be treated by spraying the basal bark from two or three directions in 20 to 30 seconds. Single castor bean stems up to about 4 inches in diameter can be killed by spraying just one side of the stem; but on larger diameter and multiple trunks, I prefer to spray from two or three directions. With the nozzle issuing a narrow jet of fluid, it is possible to

spray one-inch diameter stems from a distance of 3-4 feet without hitting adjacent stems. For treating large infestations of established castor bean plants, I sometimes use a backpack sprayer to apply Garlon 4 diluted to 20 percent in diesel oil, as permitted by the Garlon 4 label. Once I tried diluting to 15 percent, but that dilution proved ineffective.

Not only is the basal bark treatment method quick and easy, it also limits applicator contact with the plant's poisonous foliage. The ricin toxin present in castor bean seeds, foliage, and wood is persistent in the human body, where one ricin molecule can destroy thousands of ribosome molecules necessary for protein synthesis. Unlike synthetic, manufactured compounds, the human health effects of low-level exposure to natural poisons such as ricin have not been studied by the U.S. EPA.

After herbicide treatment, dead trees left standing will topple within one year and disintegrate to wood fragments over several years. Some practitioners cut off and bag the seed clusters for disposal, but I never do. Green unripe seeds should be incapacitated by the herbicide treatment, and in any case, a persistently viable seedbank will already be present on the ground under and near the tree canopy from prior years of seed production. Another advantage of basal bark treatments, compared to foliar spraying of established large plants, is that the herbicide is applied beneath the castor bean foliage, without risk of drift to adjacent native vegetation.



In the basal-bark treatment method, applicator sprays lowest 12 to 15 inches of bark around trunk and lower branches. Using Pathfinder II herbicide, this 16-inch-diameter castor bean trunk was treated in 40 seconds at Sepulveda Dam Basin in San Fernando Valley. *Photo courtesy of the author.*

Foliar Treatment of Castor Bean Seedlings

Although mature castor bean plants can be quickly dispatched by basal-bark treatments, the larger job is controlling successive waves of castor bean seedlings that sprout from the persistent seed bank. Because the seed is relatively large and immobile, most seeds produced in previous years will remain under the parent tree canopy or short distances downslope, sprouting initially as dense carpets of seedlings after the parent foliage dies and the seeds are newly exposed to sunlight during spring months.

Spray mixtures of either glyphosate at 2 percent concentration or triclopyr at 1.2 percent concentration (2 percent Garlon 4) are equally effective at controlling

castor bean seedlings, but an advantage of triclopyr is that foliar treatment produces visible damage much faster. Whereas glyphosate causes gradual yellowing of treated foliage over periods of one to several weeks, triclopyr causes rapid wilting within several hours or overnight. During spring months after successive periods of rainfall spaced weeks apart, this rapid "auxin response" to triclopyr herbicide allows complete treatment of one generation of seedlings before a second generation sprouts.

For foliar treatments of castor bean seedlings using a backpack sprayer, mixtures of 2 percent Garlon 4 in water do not require surfactant or colorant—the combination forms an opaque white

emulsion which remains visible on castor bean foliage after application. Spot treatments are rapid and accurate when using a backpack sprayer with the nozzle adjusted to issue a coarse spray.

Ailanthus and broom

Cal-IPC's *Weed Warriors' Handbook*, published last year, mentions only the cut-stump method for applying glyphosate herbicide to broom and *Ailanthus* (tree of heaven), but the basal-bark treatment method using Pathfinder II—without any cutting—is much faster and easier for treatment of broom, and both easier and more effective in the case of *Ailanthus*. Like castor bean, *Ailanthus* has thin bark and is susceptible to basal bark applications of triclopyr ester herbicide. As noted by Mike Kelly in the 2001 CalEPPC Symposium Proceedings (p. 105), girdling or felling *Ailanthus*, followed by cut-surface herbicide treatments, is not optimally effective because cutting the bark triggers abundant resprouting from lateral roots. On trunk diameters less than about 8 inches, one-time basal bark treatments are usually effective, using Pathfinder II or Garlon 4 diluted in oil; and on larger trunks, effectiveness can be enhanced by adding frill cuts in a vertical pattern, leaving strips of intact bark between the frill cuts.

With its funnel shape, broom is well-suited for basal-bark treatments, using a finger-trigger spray bottle adjusted to issue a coarse narrow spray stream of Pathfinder II. Using a wick or brush to apply herbicide to the basal bark of broom is slow and impractical, in my opinion, especially where plants are tightly spaced with interlocking canopies. Using the directed spray method, I have treated dozens of mature Spanish broom plants at Hansen Dam Recreation Area and Eaton Canyon Nature Center without harming adjacent native plants. Typically one or more retreatments is necessary on older, larger plants.

Use of Garlon 4 in riparian corridors

I've encountered a widespread opinion that Garlon 4 cannot be applied in riparian corridors "below the high water mark." This opinion may result from a misreading of the Garlon 4 label which prohibits application to "intertidal zones below the high water mark." As confirmed by Joel Trumbo, Environmental Scientist with the Pesticide Investigations Unit of the California Dept. of Fish and Game (916/358-2952), Garlon 4 can be applied safely and legally adjacent to streams and lakes provided that spray drift does not contact surface water. Only where the herbicide may contact water are formulations registered for aquatic use required, such as Garlon 3A or Rodeo or Aquamaster, which all require application by the cut-stem method to treat woody stems.

As with other ester products, triclopyr ester herbicide has the potential to volatilize when temperatures are high. Herbicide volatility is somewhat unpredictable, but applicators should be aware of this phenomenon and should not apply significant amounts of Garlon 4 or Pathfinder II during warm weather near sensitive crops like grapes, near landscaped areas, or near sensitive native trees such as Mexican elderberry. In coastal areas of Southern California, *Ailanthus*—which is dormant through winter months—can be effectively treated during the typically cloudy weather of late spring or during the cooler days of autumn. Castor bean can be treated during winter and early spring months because it retains its tropical foliage through the winter, provided that temperatures remain above freezing.

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Scotch Broom Lopping Trial

By Mike Taylor, US Forest Service, Eldorado National Forest

The Eldorado National Forest (ENF) botany crew (Annie Walker, Rosemary Carey, Dirk Rodriguez, and Mike Taylor) and volunteers from the El Dorado Chapter of the California Native Plant Society and Eldorado National Forest Interpretive Association (Steve Dowty, Don Smith, Steve and Shelly Perry, Steve Tyron, Ben Parks, Susan Durham, Howard Williams, and others) have been lopping Scotch broom (*Cytisus scoparius*) at the Traverse Creek Botanical "Special Interest Area" (SIA) for several years (at least since 1998). The last few years we have timed most of these treatments for late summer or early fall (August – October). We began to focus efforts toward late season lopping after noticing the lack of success (and resprouting) from spring or early summer treatments, and also after reviewing results of lopping experiments done in the Georgetown area by Carla Bossard in 1987 and 1988, and published in her 1990 Master's thesis, "Secrets of an ecological interloper: Ecological studies on *Cytisus scoparius* (Scotch broom) in California."

It is believed that late season lopping treatments result in fewer crown sprouts (vegetative regrowth from the lower stem area just above and below the soil level) because the plants experience maximum drought stress during this time period and lopping physiologically affects their ability to produce shoots from latent/dormant buds in the crown. In Bossard's treatments, where all plants were lopped at 3 cm (~1 inch) above ground level, 95-100% of plants treated in March 1988 resprouted, compared to 50% of those treated in May 1988, and 0-5% of plants lopped in August 1988. In the March and May trials lopping at 0 cm resulted in fewer resprouters and in all trials lopping at 10 cm resulted in more resprouters.

2003 Lopping Trial

Reports of results from previous late season lopping treatments (1999-2002) at the SIA were anecdotal and based on random observations of the previous seasons efforts. Estimates of success ranged from 75 to 90 percent. In September 2003 ENF botanists set up two test plots in areas of relatively heavy infestations of Scotch broom. Site 1 was considered "upland" and was approximately 200 yards from Rocky Canyon Creek, a perennial stream and a tributary to Traverse Creek. Site 2 was nearby but along the edge of Rocky Canyon Creek in a slightly more mesic (less xeric) site, but only the last 1-2 feet of the plot's southern edge was adjacent to the creek and could be considered riparian. No broom plants had yet established in this "riparian" zone, where they would not be expected to experience the same degree of drought stress as broom growing on upland sites. Neither site had been previously treated.

Both plots were flagged off and lopped on September 30, 2003. Great care was taken to lop every broom plant in the plot, and efforts were made to lop the stem(s) as close to the soil as possible. Site 1 was approximately 45 x 30 feet and 348 broom plants were lopped. Site 2 was smaller, about 45 x 20 feet, and 104 broom plants were lopped. These sites/plots were then evaluated on September 21, 2004. The sites were carefully searched, sometimes on hands and knees, for resprouts, seedlings or small broom plants that may have been missed in 2003.

...continued page 10

Japanese Knotweed (*Polygonum cuspidatum*) and other knotweeds

by Elizabeth Brusati

Knotweeds are not yet widespread in California, but they invade riparian areas around the world and should be on the radar screen of California weed workers. The three species present in California are *Polygonum cuspidatum* (Japanese knotweed), *P. sachalinense* (giant or Sakhalin knotweed), and *P. polystachum* (Himalayan knotweed). Of these, Japanese and giant knotweed are the most invasive. According to Dr. Mandy Tu of The Nature Conservancy's Wildland Invasive Species Program, knotweeds are found in the Pacific Northwest in habitats similar to areas in California, so it is likely they could explode here as they have there. They need soil moisture, preferring to colonize riparian sites and moist waste places. Knotweeds typically require some form of natural or human-caused disturbance to open space for establishment, and are often found along the edges of riparian forest or on stream-scoured cobble bars.

Knotweeds are thought to have escaped from garden plantings in the northwestern U.S. (If you see knotweeds for sale in your local nursery, alert the owner to the problems they cause in wildlands and contact Cal-IPC.) They are clumping perennials with coarse foliage, hollow stems, and creeping rhizomes. Japanese knotweed rhizomes can penetrate 2 inches of asphalt and can generate new shoots even when buried under 1m of soil. Once they escape, they can take over riparian zones. Giant and Japanese knotweeds can grow 15-20 feet tall in one growing season, forming a dense network of rhizomes, and producing woody stems that persist from

year to year. All three species form dense stands that exclude other species. Lauren Urgenson, Ph.D. student at the University of Washington, has found that increases in knotweed density correlate with declines in herbaceous species, shrubs, and tree seedlings as well as reductions in both quantity and quality of stream leaf litter used by aquatic insects.

The Nature Conservancy has knotweed control programs in both Washington and Oregon, in addition to several working groups in the Pacific Northwest that focus on these species. TNC also has brochures, posters, and postcards in both printed and electronic formats for distribution. For info on management and control of knotweeds, contact Doug Kreuzer at the Portland Area Preserves with TNC-Oregon (dkreuz@tnc.org or 503-802-8100) or Heather Rogers with the Skagit River Project for TNC-Washington (hrogers@tnc.org or 206-890-5417). *P. sachalinense* and *P. cuspidatum* are being reviewed for the revised Cal-IPC Invasive Plant Inventory. If you have information on these species in California, please contact the author at edbrusati@cal-ipc.org.

For more information:

TNC Element Stewardship Abstract: tncweeds.ucdavis.edu/esadocs/polycusp.html

King County, WA, Weed Alert: dnr.metrokc.gov/weeds/brochures.htm

The Knotweed Page: <http://www.knottybits.com/Knotweed/>

Japanese knotweed invading riparian areas in the Pacific Northwest.

Photos John Randall/The Nature Conservancy



Broom lopping, cont'd...

At Site 1, we found only 12 resprouts and seven small seedlings, some of which were likely missed during the initial treatment, for a resprout rate of 3.5% and an effective control rate of 96.5% effective. At Site 2, we found seven resprouts and 20 seedlings, for a 6.7% resprout rate and a 93.7% control rate. (The new seedlings and the small broom plants that were missed in 2003 did not figure into the calculation. All of these plants were pulled or lopped at the time of the 2004 monitoring.) Thus the late-season lopping proved extremely effective at limiting resprouts and minimizing follow-up requirements.

It is expected that new seedlings will continue to appear for many years, since Scotch broom seeds remain viable for decades. The good news is that due to the lack of soil disturbance in these plots (and in the SIA in general) the numbers of seedlings are expected to diminish over time as the seed bank diminishes and/or becomes buried under organic litter/duff. Of course maintenance of the plots and of other treated areas in the SIA must continue in order to prevent new seedlings from maturing to flowering age (as young as 3 years old) and renewing the seed bank.

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Herbicides and creek restoration focus of Oakland debate

By Karen Paulsel, Friends of Sausal Creek

Why would a creek restoration group draft an herbicide resolution? Friends of Sausal Creek (FoSC), in Oakland, recently did just that, and this article provides background for other communities facing a similar situation.

We started the 10-month process of passing an herbicide resolution after much internal discussion about the role of herbicides in restoration work. Our watershed has nearly the whole horror show of the Bay Area's woody, resprouting invaders, including eucalyptus (at least two species), acacia (two species), elm, broom, gorse, blackberries (two species), holly, and cotoneaster. We had decided that, in some cases, the benefits of a cut-stump treatment with herbicides could outweigh risks. For one, our watershed has so many rampant invasives, they outgrow our current control efforts. Also, many are on steep land where it is impractical or inadvisable due to erosion potential to remove woody species. However, we decided that other herbicide use, like foliar spraying of the great ocean of ivy and Cape ivy that engulfs much of our urban-forest understory, was out of the question.

As brief background, the 2,656-acre Sausal Creek watershed runs through the center of Oakland, from the hills above Montclair, across the Hayward Fault, through the Diamond and Fruitvale districts to the southern tip of Alameda. The Friends of Sausal Creek operate restoration projects in six of the major plant communities in the watershed, as well as an education program involving 350 school children per year in hands-on environmental science education. Our native plant nursery grows stock from locally-collected seeds and cuttings, and provides them to other creek groups, restoration projects, and school gardens in exchange for work in the nursery.

The impetus for the herbicide resolution grew from the Oakland hills firestorm of 1991. Other funding for vegetation management in the Oakland hills had dried up, so in 2004, voters in the hills approved an assessment district. The taxes fund fuel reduction on the 1,000 acres of city-owned parks and other properties in the district, plus additional services. Oakland has a so-called IPM (Integrated Pest Management) policy, which is actually a ban on herbicides, with major exemptions, such as golf courses (800 pounds of herbicide were applied to city golf courses last year), median strip spraying (they've been caught spraying Roundup in the rain!) and the rose garden. Unfortunately, the vegetation management program run by the Oakland Fire Department does not fully understand IPM. With woody, invasive, stump-sprouters, you need to outwit the stump. Since the 1991 firestorm in the Oakland hills, crews have repeatedly cut hillsides of broom, only to have them resprout, and the patches have expanded as the seeds spread. CDF crews have cut one hill of eucalyptus several times. The citizens' advisory board appointed to allocate the district's funds was eager for change after seeing the same vegetation recut year after year.

The Friends of Sausal Creek knew that we lacked the political clout to change the herbicide policies of the city on our own, and the fire issue provided a suitable avenue for controlling invasive woody weeds in the watershed. Under the leadership of Sue Piper, policy analyst for Councilmember Jean Quan, Friends of Sausal Creek worked

with city employees and Wildfire District board members to draft the proposed resolution. The language went through many revisions, faced a more restrictive draft from another councilmember, and an assault from the City Attorney, who wrote a press release warning that Oakland could be sued by workers and citizens for causing cancer. The resolution language was finally approved, with compromises, to require

that studies be done before the council approves the use of herbicides.

After a series of meetings that drew a surprising amount of newspaper and television attention (and many public comments at meetings), the Oakland City Council approved a resolution on April 5 to prepare a vegetation management plan and IPM documents, and to do an environmental review of use of herbicides on invasive, resprouting non-native species. Once the documents are ready, the council will review them, and vote on the use of the specified herbicides on the species studied. Many homeowner groups endorsed the resolution, with support also from Cal-IPC, the Invasive Exotics Committee of the California Native Plant Society, and local creek and restoration groups. The major opposition came from a loose coalition of chemically-sensitive individuals and their organizations, who wanted absolutely no herbicide use. The Sierra Club opposed all spraying, even from "spritzer" bottles, and opposed herbicide use on any edible plants.

The resolution allows only cut-stump application to invasive, resprouting, non-natives trees and shrubs, plus pampas grass, in the context of an IPM plan that gives preference to non-herbicide treatment. Only glyphosate and triclopyr based herbicides can be used, and only painting or hand-application is allowed. Under this resolution, herbicides cannot be used near landscaped or developed areas. We are especially concerned about herbicide use near the creek, because it supports a small population of rainbow trout, and we know that the surfactants in some herbicide formulations can be lethal.

Friends of Sausal Creek hopes this resolution provides a first step in the IPM education process for the wildfire district—matching methods to the plant species and terrain, timing treatment for greatest long-term success, and helping protect rare plants, nesting birds, and other sensitive fauna.

For more information:

<www.sausalcreek.org>

Contact the author at kpaulsell@pacbell.net.



Volunteer participating in a Sausal Creek workday. Photo Friends of Sausal Creek

continued from page 5

and acreage of certain species.

The quantities shown in Table 1 are therefore probably underestimated; however, they do give us a fair assessment of the degree to which these species have invaded this system. Although the amount of weed infestations will vary by species and extent in other Southern California wetland systems, we anticipate that the species covered by this survey will continue to be the main invasive exotic weed species in all such systems. Our work in other drainages in San Diego supports this conclusion.

Interpretation of findings

One major finding of this study is that exotic broadleaf and palm tree species are the second most dominant category of riparian weeds after giant reed. This is important since relatively few if any riparian habitat restorations along the San Diego River have included non-native tree species for removal, nor, except for a few projects implemented by the authors, do most other riparian mitigation/restoration projects in Southern California to our knowledge.

A second interesting finding is the degree to which weed infestations fall under City or non-City control, because private property or

other public institutional ownership usually makes restoration more difficult. Out of 65.62 acres of invasive weeds mapped, 34% fell on City-owned property. Management jurisdiction for this property is divided between four different City departments (Park & Recreation, Transportation, Real Estate Assets, and Water). This is important because each department has different management directives, and money available for habitat restoration by one department is not always easily used on another department's management area.

As anticipated, exotics were not evenly distributed throughout the project area. Ornamental trees, for example, had their highest infestations near the lower reaches of the river, while areas dominated by castor bean were largely localized in only two stretches of the study area. In addition, it was found that where funding was in place for long-term management of former mitigation sites, there was very low reoccurrence of

invasive weed species even when they had dominated the area before mitigation installation (e.g. the City-managed First San Diego River Improvement Project-FSDRIP).

Another important finding of the surveys was discovery of small infestations of two well-known, highly invasive species: Cape ivy (*Delairea odorata*), and perennial pepperweed (*Lepidium latifolium*). Their numbers were too small to note on the tables, but their discovery has led to efforts to eradicate both before they can spread.

Finally, it was interesting to examine the occurrence of weed species in areas where prior mitigation/restoration projects had been implemented, and where they had theoretically been eliminated prior to permit release. More

	Large DBH: (>12")	Med. (6-12")	Small (1-6")	Total
Total Trees Mapped:	9	44	35	88
Total Trees Removed:	35	68	45	148
Portion identified by mapping	26%	65%	78%	59%
Increase found during restoration	289%	55%	29%	68%

¹ includes palms, but they were only a minor part of infestation, so mostly broadleaf.

than 14 major and minor wetland restoration/mitigation projects have taken place within the area over the last 15 years. However, the only one of these sites that had consistently resisted reinvasion by the most pernicious species was the FSDRIP project that has a funded, comprehensive, long-term management plan. This further supports the idea of masterplanning weed eradication efforts within watersheds and providing permanent maintenance funds for their long-term management in urban drainages.

In conclusion, this study represents a first but important step in developing a more objective idea of which species are significant in riparian invasions in Southern California. We hope it will serve as a planning tool for focusing restoration funding.

For more info on this project, contact Brad Burkhart at b.burkhart@attglobal.net or visit www.BECEnvironmental.com.

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Table 3: Invasive Plants Mapped in Study Area

giant reed (<i>Arundo donax</i>)
Cape ivy (<i>Delairea odorata</i>)
castor bean (<i>Ricinus communis</i>)
climbing milkweed (<i>Sarcostemma cynanchoides</i> ssp. <i>hartwegii</i>)
fennel (<i>Foeniculum vulgare</i>)
ludwigia (<i>Ludwigia peploides</i>)
pampas grass (<i>Cortaderia selloana</i>)
sticky eupatorium <i>Ageratina adenophora</i>)
perennial pepperweed (<i>Lepidium latifolium</i>)
tamarisk (<i>Tamarix ramosissima</i>)
Virginia creeper (<i>Parthenocissus quinquefolia</i>)
Broadleaf Trees
bottlebrush (<i>Callistemon citrinus</i>)
Brazilian pepper (<i>Schinus terebinthifolius</i>)
California (Peruvian) pepper (<i>Schinus molle</i>)
carrotwood (<i>Cupaniopsis anacardioides</i>)
Chinese elm (<i>Ulmus parvifolia</i>)
edible fig (<i>Ficus carica</i>)
eucalyptus (<i>Eucalyptus</i> spp.)
evergreen ash (<i>Fraxinus udbei</i>)
myoporum (<i>Myoporum laetum</i>)
oleander (<i>Nerium oleander</i>)
Palms
Mexican fan palm (<i>Washingtonia robusta</i>)
Canary Island date palm (<i>Phoenix canariensis</i>)

New and Contributing Members

Thank you for your generous support! This list reflects donors and new members since the last newsletter.

Donations and Contributing Members

June Bilisoly (Portola Valley)

Ron Felzer (Merritt College, Oakland)

Dorothy B. Hunt (Pacific Grove)

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Georgia Stigall (Native Habitats, Woodside)

Swimmer Family Foundation

Wendy Tokuda (KRON, Oakland)

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Quality Control Board, Oakland), **Alac Anderson** (Santa Barbara

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Laura Baker (CNPS - East Bay Chapter, Berkeley), **Betsy Wanner**

Bikle (Mill Valley Streamkeepers, Mill Valley), **Alison Blume** (Blume

& Buffalow Garden Design, San Rafael), **Curt Boutwell** (KCI Environmental, Inc., San Luis Obispo), **Bonnie Brooks** (Garden Club of America, Carmel), **Janet Canterbury** (Santa Cruz Island Plant Restoration Project, Los Angeles), **Mary Clifford** (Cotati), **Stephanie Curtis** (Curtis Horticulture, San Jose), **Holly Damiani** (Sacramento), **Susan G. Duncan** (Oakland), **Annette Floyd** (San Francisco), **Toni Garnett** (Vicente Hillside Foundation, Berkeley), **Tom Griggs** (Sacramento River Partners, Chico), **Valerie Haley** (Native Vegetation Network, Santa Cruz), **Wynne Hayakawa** (San Francisco), **Curtis Kendall** (Audubon California, Mayacamas Mountains Sanctuary, Healdsburg), **Paul Kilburg** (San Diego Park & Rec Dept., Open Space Division, San Diego), **Tanya Kucak** (Palo Alto), **Betty Kunze** (San Bruno), **Maria Lum** (LSA Associates, Inc., Riverside), **Ingrid Madsen** (Berkeley), **Lawrence Maxwell** (San Francisco), **Steve McGonigal** (WA State Noxious Weed Control Board, Olympia), **Tony Norris** (Napa), **Greg Scott** (Newark), **Heidi Stewart** (Master Gardeners, Sebastopol), **Sarah Swinerton** (Garden Club of America, Woodside), **Mark Tucker** (Wildlands, Inc., San Diego), **Barb Weaver** (Burlingame)

Horticulture

Cal-IPC comments on APHIS plant importation rules

After review of the proposed rulemaking (Docket No. 03-069-1), Cal-IPC submitted the following comment regarding phytosanitary restrictions on plant importation. The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) is considering substantial revisions to the regulations known collectively as Quarantine 37. In the past, these were intended to exclude pests and pathogens inadvertently imported via nursery stock and seeds. APHIS recently asked for broad input related to "plants for planting," including possible pest problems from the plants themselves. For the first time, some of these revisions could address the known and potential invasiveness of imported plants and seeds, e.g., by establishing a list of plant taxa that would be excluded from import pending risk evaluation and approval.

The Nature Conservancy submitted a 36-page document with numerous detailed suggestions. Cal-IPC's letter—quoted below—responded directly to two specific issues raised by APHIS: (1) whether all shipments should require accurate scientific labelling of contents, and (2) whether formal "pest risk assessments" should be required for all new taxa requested for import, or whether the assessments should only be required for plants for which literature indicates a problem already exists.

"The California Invasive Plant Council (Cal-IPC) is dedicated to protecting California natural areas from invasive plants. Our members comprise land managers, researchers, volunteer restorationists and concerned citizens. Horticulture is the top pathway for introduction of invasive plants in California historically, and we have an active working partnership with the horticultural community to deal with invasives

still in the trade. We are encouraged that APHIS is considering how to strengthen programs for preventing importation of invasive plants.

"We support requiring shipments of plants for planting to list their contents using accurate scientific names. This will be a cornerstone of tracking and monitoring problem species.

"We support development of a comprehensive screening protocol for proposed new importations. This protocol should be science-based and transparent, and should have regular public review. We understand the balance that must be struck between allowing relatively unimpeded importation of safe plants while screening out invasive plants. We encourage APHIS to be conservative in protecting U.S. natural areas from invasive plants. Pest risk assessments (PRAs) should be required for all new plants proposed for importation, as spelled out in Option 1. A clear screening protocol should streamline the PRA process so that it does not result in undue delay for importers.

"While we respect the needs of nurseries and gardeners, and want to avoid any unnecessary restriction on plant importation, we strongly support measures that account for the significant ecological and economic risks to native species and ecosystems posed by introduction of invasive plants through the horticultural trade."

Thanks to the Union of Concerned Scientists for helpful background information, and to Cal-IPC Boardmember David Chang (Santa Barbara County Agricultural Commissioner's Office) and Clare Aslan (U.C. Davis) for assistance with policy analysis.

Readings & Resources

Website: The Nature Conservancy's Invasive Species Initiative announces the new **Weed Information Management System (WIMS)**. This application helps managers keep track of their weed locations, inventory and monitoring data, and allows them to share information with others working on invasive plants. <tncweeds.ucdavis.edu/wims.html>

Handy tool: An anonymous weed warrior came up with this handy, do-it-yourself **herbicide dauber**. Simply dump out the contents of a bottle of Shoe Scuff Cover (\$3 at any grocery store) and refill the bottle with herbicide. The bottle is designed to release its contents only when the foam sponge on the end is pressed against a surface—no pressure, no fluid. It comes with a plastic, snap-on lid that prevents accidental discharge when you carry the bottle in your pocket. Makes small cut-and-treat jobs very easy.

Publication: The final report from the workshop “**The Use of Fire as a Tool for Controlling Invasive Weeds**,” held last year in Nevada, is available on the Cal-IPC website. The report covers risks and challenges, control effectiveness of prescribed burns on invasive weeds, integrating burning with other control

techniques, effects on plant communities and on soil properties. <www.cal-ipc.org>

Publication: **Proceedings from the 2004 Cal-IPC Symposium** are now available. Copies were mailed to Symposium attendees. Printed copies may be ordered for cost and shipping (\$10) from Cal-IPC. A pdf version is posted on our website, which also contains Symposium presentations, posters, and working group notes. <www.cal-ipc.org>

Presentations: PowerPoint presentations from the **Transportation Research Board Invasive Species Workshop**, held January 9, 2005 in Washington, DC, are posted online at <refugedata.fws.gov/TRB/2005Workshop/index.html>

Online database: The Center for Invasive Plant Management has developed an online **Restoration Resource Database** to allow land managers to search for literature, books, handbooks, and web sites on restoration, particularly related to invasive species. References from federal and state agencies, journals, conservation organizations, and others have been consolidated into one easy-to-access online database. <ag.msu.montana.edu/cipmresource/>

Article: **National Geographic** magazine featured invasive species in its March 2005 issue. The article, “Attack of the Alien Invaders,” describes consequences of invasive

species around the world and includes a page of maps entitled “Global swarming.” National Geographic does not sell reprints of individual articles, but back issues can be ordered through their website. <www.nationalgeographic.com/magazine>

Television series: National Geographic also produced a four-part series entitled “**Strange Days on Planet Earth**,” broadcast on PBS April 20 and 27. The first episode covered invasive species; other topics include global warming, removal of top predators, and water quality. The PBS website has activity guides for educators. DVDs of the series can be ordered from on-line booksellers for approximately \$35. <www.pbs.org/strangedays/index_flash.html>

Report: The Invasive Species Specialist Group has published “**100 of the World's Worst Invasive Species**,” available for downloading in English, French, and Spanish. <invasivespecies.gov>

Website: A coalition of private and public sector organizations has taken a step forward in the battle against the globally spreading fungal pathogen *Phakospora pachyrhizi* (Asian soybean rust) by creating a comprehensive, freely accessed on-line **soybean rust information center**. <<http://www.plantmanagementnetwork.org/>>

Homeowners' Association Uses Cal-IPC List to Discourage Invasive Plants

By Mark Jacobucci, *The Irvine Company*

The custom home design guidelines at the Irvine Company's Crystal Cove Community include a link to Cal-IPC in their landscape section, so that homeowners may readily access updated invasive plant lists to determine which plants are considered invasive and could be harmful if they spread into the adjacent open space. Homeowners are discouraged from using such plants on their lots, and these plants are the targets of ongoing maintenance by the landscape maintenance company in common areas.

Crystal Cove is a luxury home development located along Pacific Coast Highway, midway between Laguna Beach and Corona

Del Mar. It is surrounded by permanent open space, including Crystal Cove State Park, Los Trancos Canyon, and Muddy Canyon. The community landscape, while composed mostly of “well-behaved” ornamentals, also includes significant areas with native plants, especially along its outside edges and interior open space corridors.

The design guidelines are not as strong as they could be if we had specific provisions on the CC&Rs (covenants, conditions and restrictions), but in a way we do have indirect CC&R provision. We determine the plant species to be used or removed in all our fuel modification zones according to the approved Orange County Fire Authority plant list. This list has been vetted through the resource

agencies (who are concerned mainly with screening for invasive qualities) and contains a mandatory invasives removal component.

However, even if we were to get the language into the CC&R's the far greater white elephant is the tremendous weed bank on the county and state park land across the canyons. The agencies simply do not have the resources to get after them. Our homeowners are a minuscule source compared to these surrounding areas. At any rate it's a start and better than not trying.

Contact the author at MJacobucci@irvinecompany.com.

The WILDLAND WEED CALENDAR

Symposium on Trophic and Guild Interactions in Biological Control

May 8-11, 2005

Magog, Quebec, Canada

Joint meeting of International Organization for Biological Control - Nearctic Regional Section and Biocontrol Network of Canada.

Contact L. Levesque, University of Montreal at biocontrol-network@umontreal.ca

Invasive Plants in the Mediterranean Type Regions of the World

May 25-27, 2005

Montpellier, France

An international workshop organized by the The World Conservation Union (IUCN), Center for Mediterranean Cooperation, Mediterranean Botanic Conservatory, the Council of Europe and the European and Mediterranean Plant Protection Organization. www.ame-lr.org/workshop

Invasive Plant School

June 15-16, 2005

San Diego

Taught by Carl Bell and Nelroy Jackson, this popular workshop features an overview of weed control with special emphasis on herbicides.

Contact Carl E. Bell at (858) 694-3386 or cebell@ucdavis.edu.

45th Annual Meeting of the Aquatic Plant Management Society

July 10-13, 2005

San Antonio, Texas

www.apms.org/2005/2005.htm

California Invasive Weeds Awareness Week

July 18-24, 2005

See page 3 for information.

Invasive Plants: Perspectives, Prescriptions, and Partnerships

August 16-17

University of Pennsylvania, Philadelphia

Email jlml@pobox.upenn.edu

Western Regional IPM Symposium

"Water, Wildlife & Pesticides in the West: Pest Management's Contribution to Solving Environmental Problems"

Portland, Oregon

Contact R.S. Melnicoe, UC Davis, 530-754-8378

8th International Conference on the Ecology and Management of Plant Invasions

September 5-12, 2005

University of Silesia in Katowice, Poland.

www.emapi.us.edu.pl

Know of an event that should be posted here?
Please contact dwjohanson@cal-ipc.org.

2nd New England Invasive Plant Summit

September 17-18, 2005

Framingham, Massachusetts

Convened by Invasive Plant Atlas of New England and New England Invasive Plant Group

invasives.eeb.uconn.edu/ipanel/

North American Weed Management Association, 13th Annual Conference

September 26-29, 2005

Manhattan, Kansas

Contact Mike Friesen, 620-873-8730

7th Biennial State of the Estuary Conference

Oakland, CA

October 4-6, 2005

Poster abstracts due July 15

Conference will focus on connections between the watershed, delta, and San Francisco Bay, with sessions relating to habitat restoration, estuarine water supplies, and water quality.

www.abag.ca.gov/events/estuary

Cal-IPC Symposium

October 6-8, 2005

California State University, Chico

This year's theme is "Prevention Reinvention: Protocols, Information and Partnerships to Stop the Spread of Invasive Plants," focusing on early detection techniques and partnerships to prevent plant invasions.

www.cal-ipc.org

California Society for Ecological Restoration (SERCAL) Annual Conference

October 19-22, 2005

Bass Lake, CA

Topics include restoration project funding, linking classroom training to the field, restoration and ranching, and more. Abstract deadline June 24.

www.sercal.org

Quotable:

"Invasives aren't like other forms of pollution. They don't stop spreading when you stop releasing them. They grow."**"**

Dr. David Lodge, ecologist, University of Notre Dame, in "Attack of the Alien Invaders", National Geographic, March 2005

"Scotch broom is as invasive as it is beautiful. It's like a friendly dog that bites."**"**

Kim Haworth, National Gardening Association columnist (Northern California), Feb. 17, 2005. www.garden.org

Cal-IPC Membership Form

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

Cal-IPC'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 regular membership rates are tax deductible.

Individual

- Regular \$35
- Family \$60
- Contributing \$75
- Life \$1,000
- Joint Cal-IPC/SERCAL \$55
- Joint Cal-IPC/CNGA \$70
- Cal-IPC/SERCAL/CNGA \$95
- Student/Volunteer \$15

Institutional*

- Regular \$150
- Contributing \$300
- Patron \$600
- Sustaining \$1,000
- Small company or Nonprofit \$100

* Institutional memberships receive multiple newsletter subscriptions and Symposium discounts. Visit www.cal-ipc.org for details.

Name

Affiliation

Address

City, State & Zip

Work Phone Home Phone

Fax E-mail

Credit Card No. Exp. Date

Ways to join:

Mail: send this form with check (made out to "Cal-IPC") or credit card info to Cal-IPC, 1442-A Walnut Street #462, Berkeley, CA 94709

Fax: fax form with credit card info to 510/217-3500

Email: send contact and credit card info to dwjohnson@cal-ipc.org

Phone: call us at 510/843-3902 and provide contact and credit card info



**California
Invasive Plant
Council**

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