



Cal-IPC News

Protecting California's Natural Areas from Wildland Weeds

Quarterly Newsletter of the California Invasive Plant Council

Progress in Mapping

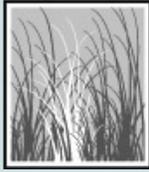


National park volunteers Ray Ridgeway, Mary Swanson, Richard Wong, and Jessica Chappell map plants as part of an early detection program at the Golden Gate National Recreation Area. Story page 8.

Photo by Jen Jordan, National Park Service

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

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From the Director's Desk

The difference a decade makes

Those working in ecological restoration have come a long way in the last ten years, as has Cal-IPC itself. Like with other overwhelming environmental challenges, it is not always easy to feel optimistic. But in looking at how far we have come in the last decade, it is clear to me that major progress is being made.

In the year 2000, there many fewer professionals focused on management of invasive plants. There were only a handful of stewardship intern programs, native plant nurseries, and private restoration firms. Cal-IPC had half the number of members it does today, and no staff. In 2000, the first legislation to fund local Weed Management Areas in California had just passed. Since then the program has provided \$10 million throughout the state to local management projects.

For years, nurseries and land managers were unable to come to terms regarding invasive plants used in horticulture. Working to stop the use of invasive plants in landscaping was often confused with a demand to use only natives. Today the Don't Plant a Pest campaign and the PlantRight partnership have built a strong foundation for addressing this major pathway for spreading invasive plants.

In 2000, few organizations had inventoried and mapped the invasive plants on their lands. GIS and GPS tools were breaking into the mainstream and data standards for weed mapping were being worked out. Online geospatial tools were crude. Today, land managers consider mapping to be an integral part of their weed work. Calflora and the Bay Area Early Detection Network have developed handy online reporting tools for new finds, and Cal-IPC is combining statewide distribution mapping with climatic modeling to anticipate weed spread. New tech tools are being developed every year.

Ten years ago, agricultural and environmental organizations were finding common cause in addressing invasive plants and formed the California Invasive Weeds Awareness Coalition, which would begin sponsoring Invasive Weeds Awareness Day at the Capitol in 2004. State and federal agencies formed the Interagency Noxious Weed Coordinating Committee, and county Agricultural Commissioners were taking on the new work of organizing WMAs. Today the state has a formal Invasive Species Council with a 24-member advisory committee bridging different taxa and stakeholder communities. We aim to produce a comprehensive strategic plan that for endorsement at the top levels of government, and to push for its implementation.

Those working on the ground know that plenty of invasive plant populations have increased in size, and more infestations have gotten started. But we have also eradicated many high-priority populations, and gotten others in our sights. Our numbers are greater, our network is deeper, and our policies are stronger. In the coming decade, I look forward to solidifying these gains and creating highly effective systems to protect California's wildlands from invasive plants.



Pampas grass plumes were a common decorations in the late 1800's. Photo courtesy of the Denver Public Library.

Cal-IPC Updates

Have you renewed your membership? Check your mailing label. This will be the last newsletter for those who haven't renewed for 2010. Send your renewal today and stay connected.

Jobs available at Cal-IPC

We are hiring a Business Manager, Mapping Program Manager and Training Program Manager.

www.cal-ipc.org

2010 Field Courses

See page 14 for our 2010 Wildland Weed Field Course Schedule

Cal-IPC's 2010 Symposium

Put it on your calendar!

Oct. 13 –16, Ventura, CA.



JOIN US!

Day at the Capitol March 10 - Sacramento

Join us for the seventh annual Invasive Weeds Awareness Day at the Capitol on Wednesday, March 10, in Sacramento. This is an opportunity to tell your state legislators about the local and statewide effects of invasive plants and what we are doing about it. Past Day at the Capitols helped reinstate funding for Weed Management Areas and create the state's new Invasive Species Council. Register at www.cal-ipc.org!

California will receive \$13 million for invasive species programs from the federal Farm Bill. The money will fund programs such as parcel inspection dogs at shipping facilities, high-risk pest detection surveys, and a statewide survey for the European grapevine moth. (Cal. Dept. of Food and Ag. press release, Jan. 20, www.cdfa.ca.gov)

If you see the new movie *Avatar*, look carefully at the plants. UC Riverside professor and Cal-IPC member Jodie Holt served as a consultant for the film and its associated video games, using her botany expertise to help director James Cameron provide background information about the plants on the alien moon Pandora (but were any invasive?). She also helped actress Sigourney Weaver look and act like a "real" botanist. (UC Riverside newsroom, Nov. 24, newsroom.ucr.edu)

Invasive genetic strains of common reed (*Phragmites australis*) use microbes and soil enzymes to attack North American populations of reed. University of Delaware researchers discovered that invasive reed from Eurasia produces more of the chemical gallotannin than the North American reed does. While

gallotannin itself is harmless, it reacts with enzymes produced by native plants and microbes to form toxic gallic acid that kills the native reed. Eurasian common reed has taken over millions of acres of wetlands in the U.S., leaving only small patches of the North American variety. (PhysOrg.com science news, Dec. 23, www.physorg.com)

Are camels the newest biocontrol for tamarisk, a.k.a. saltcedar? A rancher in Colorado believes they might be. Stating, "They will eat all day if given the opportunity", she says her 15 camels have eaten all of the saltcedar on her ranch and she believes they could be used to eat the new growth that returns even after a bush has been attacked by biocontrol beetles. A researcher interviewed for the article says that it would probably require many camels to eat a significant amount of saltcedar, similar to using goats. (High Country News, The Goat blog, Jan. 20., www.hcn.org)

The number of invasive alien species per country ranges from nine in Equatorial Guinea to 222 in New Zealand. The Global Invasive Species Programme's new report, "Global indicators of biological

invasion: species numbers, biodiversity impact and policy responses", looked at 57 countries and found that, on average, each country has 50 non-indigenous species which have a negative impact on biodiversity. (www.gisp.org)

Starting in January, boaters in Oregon will pay new fees to cover the cost of cleaning stations and educational campaigns for aquatic invasive species such as hydrilla, quagga mussels, and zebra mussels. The new law will add a \$5 surcharge to motorized boat registration every two years. Manual and paddle boats will need \$5 annual permits. Out-of-state boaters will pay \$20. The new law was instituted because existing voluntary campaigns against aquatic invasive species have not had much success. (News-Review, Nov. 3, www.nrtoday.com)

Cold weather in Florida may help slow the spread of invasive pythons and green iguanas. A rare snowfall has made pythons seek warm spots on roads and Florida wildlife officials are urging hunters with snake permits to take advantage of the opportunity to find them. Frozen

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Watch out for these Red Alert weeds!

Joseph M. DiTomaso, Department of Plant Sciences, UC Davis

Red Alerts (or Weed Alerts) represent potentially new species not previously reported to be invasive in California or species that have been here, but are now either expanding their range at a more rapid rate or moving into new areas of the state. These species were all reported by Cal-IPC members during 2009. This year saw more reports than any previous year and many of these species have been on the Red Alert list of past years. With over 50 submissions, it was not possible to present detailed information on all these species. As such, I have narrowed the list down to what I felt were the most important species to discuss, but included a full list of all species in a table (pages 6-7)

The 2009 Red Alerts include two aquatic plants (*Limnobium laevigatum* and *Undaria pinnatifida*), two perennial grasses (*Phalaris arundinacea* and *Danthonia pilosa*), and three broadleaf species (*Salsola soda*, *Watsonia meriana*, and *Romulea rosea*). Most of these have not yet been evaluated for the Cal-IPC Inventory because we have only recently received information on them spreading into wildlands. If you have additional information on these species, or have seen them in other parts of California not mentioned here, please contact Joe DiTomaso (see e-mail address at end of article) or Elizabeth Brusati at edbrusati@cal-ipc.org.

Smooth frogbit or West Indian sponge-plant (*Limnobium laevigatum*): Smooth frogbit is a member of the Hydrocharitaceae. This is the same family as other very invasive aquatic plants, including *Hydrilla verticillata* (hydrilla) and *Egeria densa* (Brazilian egeria). It is native to tropical and subtropical Central and South America. Morphologically, smooth frogbit is very different from hydrilla and Brazilian egeria and resembles a smaller version of water hyacinth (*Eichhornia crassipes*). It is a floating to rooted stoloniferous perennial. Smooth frogbit has a juvenile form of partly submersed rosettes with thick floating leaves. Juvenile rosettes gradually develop into much larger mature clumps,



From the top: Frogbit resembles water hyacinth. Photo courtesy Pat Akers, CDFG. Wakame grows on floating objects such as docks. Photo by Chela Zabin. Hairy wallabygrass displaces native *Danthonia californica*. Photo by Peter Warner.

with leathery, emergent, elliptic leaves on non-inflated stalks. The bottom of its leaves have a diagnostic honeycomb-like spongy tissue. The white flowers are solitary or paired and are unisexual.

In California, smooth frogbit was previously reported to have escaped cultivation as a pond ornamental in some coastal areas, including Alameda and Riverside counties, but the largest infestation was in Redding. In August 2007, Pat Akers and Mary McClanahan reported scattered patches along 10-15 miles of the San Joaquin River in Fresno. Later in 2007 it appeared in the Sacramento Delta and in February 2008 another infestation near the Kings River southeast of Fresno. It blocks waterways by forming thick mats.

The species has been placed on the California Department of Food and Agriculture (CDFG) Noxious Weed Q-list. This designation can give CDFG the authority to rapidly respond to control or eradication efforts without going through the long process of listing a plant on the A-list. It is not yet listed in the Cal-IPC Invasive Plant Inventory.

Wakame or Japanese kelp (*Undaria pinnatifida*): Japanese kelp is a golden-brown kelp with flat broadly pinnate-lobed or -divided fronds that can reach over 1 m in length and width. It is native to southeast Asia and Japan where it is used for food (sushi). Japanese kelp has an extended period of spore production and can release millions of motile spores that can remain active for up to 5 hours. It rapidly colonizes open or disturbed substrates and floating objects and is adapted to both warmer waters of southern California, as well as the cooler areas in the northern part of the state. Japanese kelp may have the potential to displace certain native kelp species in California coastal waters. Marina owners worry that it will cover boat hulls, piers, and docks. It typically inhabits the upper region of the sublittoral zone, from the low tide mark to about 15 m deep.

It was first discovered near Santa Catalina Island. It soon moved to other areas of southern California such as Santa Barbara and as far north as Monterey, but did not expand much for a few years afterwards. In fact, at that time (2002), it was included as a Cal-IPC Red Alert. In 2009, Ted Grosholz of UC Davis and Chela Zabin of the Smithsonian Environmental Research Center reported that it is moving northward quickly and has been found in several new locations in the San Francisco Bay. Ted also indicated that it is the most significant marine algal invasion since *Caulerpa*. In addition to California, Japanese kelp has also become invasive off the coastal waters of France, Britain, Belgium, Spain, Italy, Argentina, Australia, and New Zealand. It is currently listed as a Limited species on the Cal-IPC Inventory. Visit www.serc.si.edu/labs/marine_invasions/MIRL_at_RTC/undaria.aspx for factsheets and instructions for reporting suspected sightings of *Undaria*.

Hairy wallabygrass, hairy oatgrass (*Danthonia pilosa* = *Rytidosperma pilosum*): Hairy oatgrass is a perennial bunchgrass native to Australia. The *Jepson Manual* lists it as being found in disturbed, open sites, meadows, and coniferous forests in the north and central Coast Ranges, Klamath Range and the San Francisco Bay Area. Both Peter Warner and Tim Hyland reported that it is becoming a dominant species in the coastal terrace prairie and upland grassland of many northern California coastal counties. In these areas, it appears to be outcompeting native California oatgrass (*Danthonia californica*). Although relatively widespread, this species may be increasing its rate of spread. It has not yet been evaluated for inclusion on the Cal-IPC Inventory.

Reed canarygrass (*Phalaris arundinacea*): Reed canarygrass is a coarse perennial to 1.5 m tall, with creeping rhizomes. It is considered an obligate wetland species inhabiting wet sites along streams. Although it is considered native to California, there are European biotypes that have been introduced into the United States and have likely invaded California, perhaps even hybridizing with the native forms. Comparisons of the hybridization of European and North American reed



From the top: There are questions about the genetics of reed canarygrass in California. *Photo by Athena Demetry.* Glasswort invades mudflats and salt marshes around San Francisco Bay. *Photo by Sarah Estrella.* Rosy sandcrocus is moving inland in Sonoma County. *Photo by Peter Warner.*

canarygrass have been made, but these are from populations on the east coast.

Little is actually known about its genetics in California. While the native biotypes are an important component of the ecosystem and provide food for seed-eating birds, the non-native forms can displace other native plants that are more desirable in those particular habitats. This is the case in many other northern states, such as Oregon, Washington, Idaho, Montana, and Wyoming. In Washington, reed canarygrass is a state-listed noxious weed. Because of the confusion related to what is native or from European origin, Cal-IPC has not, to date, listed reed canarygrass on its current inventory. Athena Demetry at Sequoia-Kings Canyon National Parks reports that it is spreading in the Sierra Nevada, suggesting that perhaps these infestations are non-native.

Glasswort (*Salsola soda*): Glasswort is a member of the Chenopodiaceae and a close relative of Russian thistle (tumbleweed). It is native to southern Europe and is very distinctive because of its fleshy succulent nature and adaptation to saline environments. Unlike the other Russian thistles, glasswort foliage remains fleshy in fruit. Glasswort inhabits mudflats and saltmarshes in the San Francisco Bay region. Populations in the San Francisco Bay seemed to be fairly stable in the past few years, but this year have dramatically expanded in the Suisun Marsh area. Sarah Estrella of the Cal. Dept. of Fish and Game reported that a small infestation expanded to cover over two acres and was displacing the native *Salicornia* (pickleweed) species. The species has not yet been evaluated for the Cal-IPC Inventory.

Rosy sandcrocus (*Romulea rosea* var. *australis*): Rosy sandcrocus is another member of the iris family. It is a small pink flowered perennial ornamental that has escaped cultivation. Rosy sandcrocus is native to South Africa and was typically found on disturbed dry sandy or often hard-packed soils in the San Francisco Bay Area and other sites along the central and north coast. Peter Warner reports that while it appeared for years to be restricted to disturbed areas and roads along the

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Additional invasive plants reported to Joe DiTomaso in 2009. Year in parentheses indicates previous years included as a Red Alert. Many of these species are already listed on the Cal-IPC Invasive Plant Inventory and the information below represents new locations and range expansions.

SPECIES	COMMON NAME	FAMILY	LOCATION	REPORTED BY
<i>Acer palmatum</i>	Japanese maple	Aceraceae	Carmel	Cheryl McCormick
<i>Rhus lancea</i>	African sumac	Anacardiaceae	San Diego	Larry Hendrickson
<i>Dittrichia graveolens</i>	stinkwort	Asteraceae	SF Bay Area	Andrea Williams, Tracy Cline, Bob Neale, Tim Hyland (2004)
<i>Senecio quadridentatus</i> (= <i>Erechtites quadridentatus</i>)	cotton fireweed	Asteraceae	Santa Barbara	Wayne Chapman
<i>Erigeron karvinskianus</i>	Latin American fleabane	Asteraceae	SF Bay Area	Andrea Williams
<i>Symphotrichum subulatum</i>	saltmarsh aster	Asteraceae	Suisun City	David Keil
<i>Calendula arvensis</i>	field marigold	Asteraceae	SF Bay Area	Tim Hyland
<i>Carthamus lanatus</i>	woolly distaff thistle	Asteraceae	San Luis Obispo coast	Tim Hyland (2004)
<i>Crupina vulgaris</i>	common crupina	Asteraceae	Sonoma	Peter Warner
<i>Gazania linearis</i>	treasureflower	Asteraceae	San Francisco & Ft. Ord	Susan Hubbard, Jo Kitz (2008)
<i>Picris echioides</i>	bristly oxtongue	Asteraceae	Central Valley	John Anderson
<i>Conium maculatum</i>	poison hemlock	Apiaceae	Russian River	Victoria Wikle
<i>Cynoglossum officinale</i>	houndstongue	Boraginaceae	Lassen County	Alan Uchida (2002)
<i>Malcolmia africana</i>	African mustard	Brassicaceae	gypsum soils, Nevada	Ann Howald (2008)
<i>Lobularia maritima</i>	sweet alyssum	Brassicaceae	Sonoma & Mendocino Cos., SF	Peter Warner
<i>Catalpa speciosa</i>	northern catalpa	Bignoniaceae	San Joaquin River	Mary McClanahan
<i>Maytenus boaria</i>	mayten	Celastraceae	East Bay, Golden Gate Nat'l Rec. Area	Roy Leggitt (1997)
<i>Euphorbia oblongata</i>	oblong spurge	Euphorbiaceae	Santa Cruz, Sonoma & Napa Cos.	Peter Warner, Tim Hyland (2001)
<i>Euphorbia terracina</i>	carnation spurge	Euphorbiaceae	Los Angeles Co.	Tim Hyland
<i>Lathyrus latifolia</i>	everlasting peavine	Fabaceae	North Coast range	Peter Warner
<i>Lathyrus tingitanus</i>	Tangier pea	Fabaceae	North Coast range	Peter Warner
<i>Melilotus albus</i>	white sweetclover	Fabaceae	E. Sierra Nevada	Sue Weis
<i>Crocsmia x crocosmiflora</i>	crocosmia	Iridaceae	Marin County	Robert Katz
<i>Iris foetidissima</i>	stinking iris	Iridaceae	East Bay	Barbara Ertter
<i>Kniphofia uvaria</i>	redhot poker	Liliaceae	Sonoma & Mendocino coast	Peter Warner
<i>Ficus carica</i>	fig	Moraceae	San Joaquin River	Mary McClanahan
<i>Passiflora tarminiana</i>	banana poka	Passifloraceae	San Francisco	Jennifer Erskine Ogden (2004)

SPECIES	COMMON NAME	FAMILY	LOCATION	REPORTED BY
<i>Phytolacca americana</i>	pokeweed	Phytolaccaceae	Napa County	Chris Sauer
<i>Muehlenbeckia complexa</i>	maidenhair vine	Polygonaceae	Mendocino coast	Bill Maslach
<i>Brachypodium sylvaticum</i>	slender false brome	Poaceae	Possibly Santa Cruz	Steven Daniel (2003)
<i>Ehrharta erecta</i>	erect veldtgrass	Poaceae	Central coast	Tim Hyland
<i>Nassella manicata</i> (= <i>N. formicarum</i>)	tropical needlegrass	Poaceae	Sonoma coast	Peter Warner
<i>Nassella tenuissima</i>	Mexican needlegrass	Poaceae	Topanga State Beach	Michael O'Brien & Sally Davis (2000, '04, '05)
<i>Acaena novae-zelandiae</i>	biddy-biddy	Rosaceae	Sonoma Coast	Tim Hyland
<i>Rubus</i> hybrid	blackberry	Rosaceae	Putah Crk, Yolo Co.	Rich Marovich
<i>Kickxia elatine</i>	fluvellin	Scrophulariaceae	Central Valley	John Anderson
<i>Centranthus ruber</i>	red valerian	Valerianaceae	SF Bay Area	Andrea Williams

...Red Alerts, from page 5

coast, it is now forming large populations in coastal and interior grasslands in Sonoma County. Rosy sandcrocus has not yet been evaluated for the Cal-IPC Invasive Plant Inventory.

Watsonia (*Watsonia meriana* = *Watsonia bulbifera*): *Watsonia* is a member of the iris family (Iridaceae) and is native to South Africa. It is a common perennial ornamental species that reproduces by bulblets and corms at the base stem. The species has been reported to be locally abundant in some areas along the north coast, particularly on roadsides, open fields and waste areas, however, Peter Warner reports that it is now spreading both south from Sonoma County and north from Mendocino County. Smaller patches are now coalescing and spreading into marshes, woodlands, and grasslands adjacent to roadsides. *Watsonia* is currently listed as a Limited plant in the Cal-IPC Invasive Plant Inventory.

For more information

Cal-IPC Red Alerts:

www.cal-ipc.org/ip/management/alerts

USDA PLANTS database: plants.usda.gov

Calflora database: www.calflora.org

Jepson Flora Project:

ucjeps.berkeley.edu/jepson_flora_project.html

Throughout the year Joe DiTomaso collects reports of potentially new invasive species not previously reported in California. If you would like to contribute to his list, contact him at jmditomaso@ucdavis.edu.



Watsonia is spreading south from Sonoma County and north from Mendocino County. *Photo by Peter Warner.*

...Weed News, from page 3

iguanas are falling out of trees, sometimes onto cars. Unfortunately, the cold snap also threatens the lives of sea turtles and manatees. (Christian Science Monitor, Jan. 9, www.csmonitor.com)

Florida python owners whose snakes aren't so cute anymore can turn them in at Exotic Pet Amnesty Days. While these events focus mainly on exotic birds and non-dangerous reptiles, an Amnesty Day last September at Gatorland in Orlando collected state-listed Reptiles of Concern including the infamous Burmese and African rock pythons that are invading the Everglades. Amnesty days focus on educating the public about responsible ownership of exotic pets so that these animals are not released into the wild. The largest pet turned in was a 13 ft., 80 lb. Burmese python. (Florida Fish & Wildlife Conservation Commission, www.myfwc.com, Gatorland event video: gatorland.com)

National Park Service releases early detection protocol

Andrea Williams, Marin Municipal Water District

Andrea Williams previously worked for the National Park Service and is the co-founder of the Bay Area Early Detection Network.

We've heard the tenet before: early detection and rapid response is, aside from prevention, the most cost-effective way to deal with invasive species. In plans ranging from individual land units, to local Weed Management Areas (WMAs), to the state of California, national agencies, and national and international interagency panels, they say, "Go forth and do early detection". But what does that actually translate to, and how do we "do" early detection? A recently published protocol from the National Park Service's San Francisco Bay Area Inventory and Monitoring Network (SFAN) answers these questions.

The SFAN encompasses diverse national park units, including Golden Gate National Recreation Area, Point Reyes National Seashore, Pinnacles National Monument, and John Muir National Historic Site. The SFAN is one of 32 Inventory and Monitoring (I&M) Networks

nationwide whose function is to improve park management through greater reliance on scientific knowledge. These networks have ranked and prioritized "vital signs": ecosystem indicators, processes, or stressors that will serve as an indication or early warning for park managers regarding the state of their lands. Unsurprisingly, some aspect of invasive species monitoring was important to most of the networks. At SFAN, managers recognized that early detection monitoring, spread monitoring, and effectiveness monitoring are all key to invasive species work. Effectiveness monitoring was deemed to be outside the purview of I&M; spread was folded into planning for plant community change monitoring, and early detection was tackled as the highest priority.

The resultant protocol, *Early Detection of Invasive Plant Species in the San Francisco Bay Area Network*, developed and tested

It presents logical methods and guidance for where, how often, and for what to search.

over several years, recently cleared peer review and has been "published" (i.e., made available online). It presents logical methods and guidance for where, how often, and for what to search; the types of data to gather; and recommended training levels for volunteers and staff, to better glean data from some of the millions of people out in our national parks annually.

The Objectives

Three objectives provide the framework for early detection monitoring: developing and revising a list of target invasive plants, whose priority determines the level of data gathered; ranking park subwatersheds by management priority, risk, and current infestation level to generate priorities for monitoring frequency; and regularly evaluating and examining invasive plant monitoring data to revise and refine priorities, as well as clarifying contributing factors to new invasions in the park.

The list of target species for each park was based on current knowledge and rankings, summing recognized invasiveness and biological ease of control and stratifying into priorities by feasibility of control based on species' infested acreage in the park. Species listed by Cal-IPC, the Cal. Dept. of Food and Agriculture (CDFA), The Nature Conservancy (TNC), and local WMAs received varying numbers of points for invasiveness, as did unlisted species which shared invasive characteristics with a listed congener. Based on best available knowledge, species also received points for altering ecosystems—affecting a system change, not just crowding out other plants—and for endangering rare plants in SFAN parks. Next, based on best available knowledge, species were ranked by ease of control independent of number of acres infested. All points were summed for the overall



Mapping capeweed along the Coastal Trail above Muir Beach. Volunteers Jim Dougherty, Richard Wong, and Mary Swanson are pictured. Photo by Jen Jordan, NPS.

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Ceanothus — “See, I know this!”

Plant identification workshops from the California Field Botanist Association

Michael Bower, Melissa Hostler, Erin Gottschalk Fisher, and Debra Sykes

Invasive plants. We love to hate them. And, many of us derive pleasure from pulling, whacking, spraying, burning, or at least cursing at them. But, an often forgotten prerequisite for successful weed control is the accurate identification of the undesirable plant. Identification is important not only when deciding whether or not you have a problem plant, but also in the selection of an herbicide, since most herbicides work on some plant families but not others. Early detection programs depend on the accurate identification of known and potential plant invaders. Too often we give up when we have doubt about the true identity of a potential invasive plant, or even worse, we proceed to control a plant that is not actually the problem plant we thought it was.

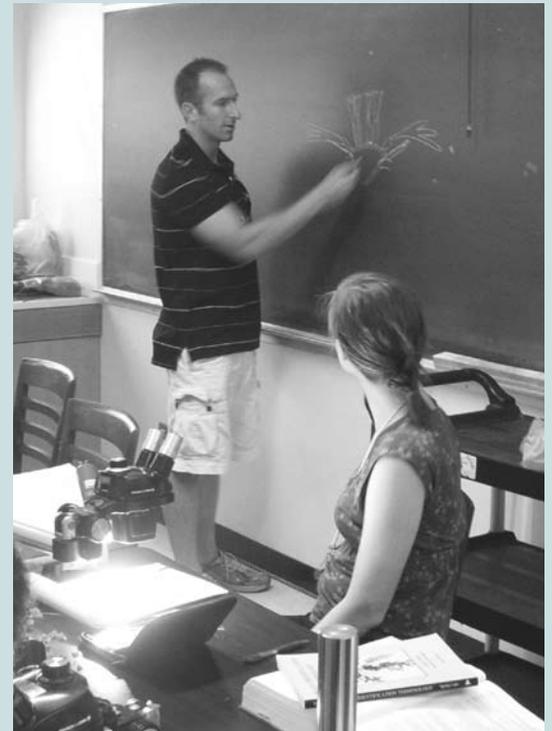
Don't despair! Free, no-experience-necessary plant identification workshops are provided by Ceanothus: California Field Botanist Association throughout the Sacramento Valley at locations and times listed on our website (www.ceanothus.org). All types of plant enthusiasts, from backyard gardeners to weed workers to professional botanists, are invited to attend the workshops. Everyone is encouraged to bring plants they are interested in

identifying, a Jepson Manual, and plant dissection tools, if you've got them. The only requirement is that you have fun!

The supportive group environment at Ceanothus workshops was first envisioned two years ago by consulting botanists Melissa Hostler and Erin Gottschalk Fisher. Since its inception, Ceanothus has welcomed consulting botanists Debra Sykes and Michael Bower as co-organizers. At workshops we read aloud from the Jepson Manual in a small group, discussing points of confusion as we come to consensus about the determination for a particular plant. Ceanothus is committed to providing hands-on plant identification workshops in a growing number of locations in California, including Davis, Sacramento, Rocklin, Auburn, and Chico. Ceanothus also provides other opportunities such as field plant identification trips and professional networking opportunities.

Through Ceanothus, people from different backgrounds (i.e., academia, consulting, public agencies, and hobby botanists) are making connections and educating each other, while helping keep “hands-on” botany alive. Weeds are a frequent management concern for workshop attendees and discussions about weeds and invasive plants are commonplace during our workshops.

It was through a Ceanothus workshop that one of us



Chico Ceanothus workshop participants discuss the concept of plunger pollination while identifying several species of tarweed (*Hemizonia* spp.). *Photo courtesy of California Field Botanist Association.*

shamefully realized we had been pulling out native chaparral pea (*Pickeringia montana*) and not an invasive broom! Don't let this happen to you!

So, if you are interested in identifying that pesky garden weed, determining whether you have discovered a new population of an invasive plant, meeting other professionals or hobbyists, or simply refining your plant identification skills, we hope to see you in our workshops in 2010!

California Field Botanist Association workshop locations and times are listed at: www.ceanothus.org.



Workshop participants working together to identify different species of tarweed (*Hemizonia fitchii* and *H. parryi* ssp. *rudis*). *Photo courtesy of California Field Botanist Association.*

Climate change, biofuels, the green economy, & weeds!

As more states form Weed Management Areas and Invasive Species Councils (including California!), we are entering an era of increased awareness of the linkages between invasive species and economic issues. Even the *Wall Street Journal* recognized the economic impact of invasive species in a recent article (Jan. 15). National Invasive Species Awareness Week, formerly known as National Invasive Weeds Awareness Week, brought 130 participants from 30 states to Washington, D.C. from Jan. 11-14.

Attendees learned about invasive species programs at Defenders of Wildlife, the Lady Bird Johnson Wildflower Center (Texas), Student Conservation Association, and other organizations, agencies and universities. Perhaps the most provocative title on the agenda was “Johnny Appleseed was a Bio-terrorist” by Dr. Ernest Delfosse of Michigan State University. California Secretary of Food and Agriculture A.G. Kawamura also spoke at the event, saying “Invasive species affect all walks of life — from the environment to our food supply to the health of our families and pets.”

NISAW focused on three topics: climate change, the “green economy”, and biofuels. Below we have excerpted points from position papers that were distributed to congressional staff by NISAW attendees. To read the full position papers with recommendations for action by the federal government, visit www.nisaw.org/.

Climate Change

Climate change and biological invasions are dynamic, interconnected, and interdependent phenomena that alter ecosystem services. Ecosystem goods and services, in turn, impact agriculture and food security, water supplies, natural resources, wildlife, recreation, and public health and safety nationwide.

Climate changes confound predictive biological models and, more importantly, the policy decisions based on the mod-

els. As climate conditions change, novel ecosystems may be filled with a new mix of native and non-native species. A current assessment of the distribution and environmental requirements of invasive species across North America with respect to climate trends is necessary to determine effective ecosystem management policies.



We call on Congress to build incentives into climate change legislation that require the use of non-invasive plant species for activities such as carbon sequestration, biofuels, post-wildfire land rehabilitation, land and water adaptation, and wildlife habitat security so new legislation supports long-term ecosystem health.

The Green Economy

Invasive species are intricately linked to the economy. Trade, travel, and transport facilitate their spread. Invasive species management requires extensive human and financial resources.

The impacts of invasive species can substantially undermine economic growth and sustainable development. Invasive species prevention and management can foster the “green economy” through green collar job creation and social development programs. On the other hand, if invasive species are not addressed as a matter of urgency, their spread and consequent impacts will substantially undermine green economic growth, including our capacity for renewable energy development and expansion.

The prevention and management of invasive species requires substantial human resources across a wide range of expertise, including inspection, taxonomic identification, research, monitoring, education and communication, technical

assistance, policy and regulation, control, eradication, and restoration. In addition to jobs created specifically to address invasive species, the technical demands of invasive species prevention and management expand job opportunities across a wide variety of sectors (e.g., software development for mapping and modeling, development and testing of tools for integrated pest management).

Biofuels

To provide alternatives to petroleum-based energy, the U.S. government has mandated a greater proportion of plant-based biofuels be integrated into its energy portfolio. However, certain plant species being proposed for biofuel production in the U.S. are invasive species or are likely to escape cultivation and become invasive.

To minimize the risk of biofuel crop escape into the surrounding environment, the U.S. government needs to employ and promote ecological studies and scientific models that characterize the invasion risk of each biofuel species or cultivar (as appropriate) within a target region and identify ecosystems most susceptible to invasion. Information generated from biofuel crop ecological studies, risk analyses, bioeconomic and climate match modeling, and other methods can guide the government’s risk mitigation plans... Federal agencies can take strategic steps at appropriate points within research and development, crop production, harvest and transportation, conversion and refinery practices, and/or regulatory action to minimize the risk of biofuel crops becoming invasive.

For more information:

National Invasive Species Awareness Week: www.nisaw.org

National Invasive Species Council: invasivespecies.gov

Thanks to Janet Clark, NISAW organizer, for information and the logo.

11th Annual Central California Invasive Weed Symposium

The theme of this year's Central California Invasive Weed Symposium at the Santa Cruz County Fairgrounds was "Fire, Water, Action!" The new fairground venue was refreshing and highlights the new organizing partnership between the Monterey County WMA and the budding Santa Cruz WMA.

Presentations ranged from discussing balancing fire hazard and weed invasion, to the need for the weed community to move beyond using only RoundUp when using a chemical control methods, to leveraging the use of large equipment to get



Sycamore Farm's weed eating goats.
Photo by Marc Gomes.

lots of work done, to the cost effectiveness of small-scale fennel control, and to the opportunity to partner with mosquito abatement professionals.

Tim Hyland, Cal. Dept. of Parks and Recreation, presented on his (and his colleagues) successful efforts to control European beachgrass (*Ammophila arenaria*) using innovative integrative techniques that are more financially viable than previously described techniques.

Bob Case hosted the popular "Jeopardy Gameshow: Don't Laugh about Laws & Regs" developed by David Chang for the 2009 Cal-IPC Symposium, complete with audience members as contestants. This led to possibly the most laughter at any Laws & Regs session in the history of the Cal. Dept. of Pesticide Regulation.

Following an amazing organic lunch, attendees had the chance to discuss poster topics and interact with each other.

And what would the CCIWS be without the "Tool Tailgate"? This year mechanical masticators, biological masti-

cators (goats), jeeps modified for herbicide application, native nursery stock, a hydro obliterator demonstration that really obliterated, and more provided the attendees with demonstrations of inventive and effective tools for better weed control.

Following the symposium, field trip participants were treated to a tour of the Watsonville Slough, High Ground Organics and Harkins Slough. High Ground Organics has been committed to restoring upland portion of the slough from degraded land to native habitat, including the Santa Cruz tarplant (*Holocarpha macradenia*), which is on the verge of extinction.

This symposium continues to bring land managers, contractors, restoration professionals and volunteers together to share their successes, struggles, and pioneering weed control strategies. Thanks to the organizers, presenters, and attendees for keeping the flame alive.

The 12th Annual CCIWS is tentatively scheduled for Friday, Nov. 12, 2010. Mark your calendars!

Northern California Botanists 2010 Symposium

Gina Darin, California Department of Water Resources

Linnea Hanson, Plumas National Forest and President of Northern Cal. Botanists, welcomed everyone and introduced the theme: Botanical Treasures in Northern Cal. – What's at Stake?

Sessions covered invasive plants, management tools and conservation of plant diversity, plant/animal interactions, bryophytes, newly described species, and encouraging future botanists. The keynote speaker, Bruce Baldwin of UC Berkeley, spoke on the abundance of cryptic diversity, but some of the other presenters discussed not-so-cryptic diversity, including a newly described, six-foot-tall plant living clonally on the

side of the road in northern California — *Sidalcea gigantea*.

One of the many benefits of this event was the networking opportunities. Attendees from northern California and beyond (including Oregon and Finland) descended upon Cal. State University, Chico, for the 2010 Symposium. A goal of the symposium is to increase communication of botanical issues in northern Cal. between land managers, agencies, students, researchers, etc. This was accomplished during the poster session, workshops, field trips, and lunches out on the town in Chico.



Clare Aslan, UC Davis, presented on the role of bird dispersal in non-native plant invasion.
Photo courtesy Northern California Botanists.

Complete with a raffle to support student scholarships, this Northern California Botanists Symposium was one to remember.

Sacramento Valley Regional WMA Meeting

Gina Darin, CA Dept. of Water Resources

The Sacramento Weed Management Area (WMA) hosted the first-of-its-kind, regional WMA meeting in November, 2009. Over 40 attendees participated in the meeting representing 15 neighboring counties and included representatives from state and local agencies, utilities, NGOs and universities.

The Sacramento County Agricultural Commissioner congratulated the group on being the local contingent of a nationwide effort to address issues caused by invasive plants.

Programs affecting California's WMAs were discussed, including the American Recovery and Reinvestment Act (aka federal stimulus funding); Cal-IPC's state-wide mapping projects; the newly formed Bay Area Early Detection Network (BAEDN); continuing work with the horticulture industry by the PlantRight campaign; and the state's newly-formed interagency invasive species council.

Research on targeted grazing for weed management was presented by Morgan Doran of UC Cooperative Extension, and Dale Woods of the Cal. Dept. of Food & Agriculture presented the latest news on biological control projects.

During the afternoon session WMAs gave updates on current and scheduled projects. A Pacific Gas & Electric representative announced that they have begun implementing a comprehensive weed management program. During the open forum, attendees shared control tips and tools, a stinkwort brochure, how to better communicate with Caltrans, and an effective letter to property owners requesting access to their land.

By focusing on regional issues and providing a venue for neighbors to share ideas the meeting was a great success. The leaders of the Sacramento WMA hope that this meeting will inspire other counties to host regional meetings in the future.

...Early Detection from page 8

invasiveness score, then sorted according to feasibility of control based on number of acres infested with that species, cost for removal, politics, and access. "Controllable" acreage was based on the size of the park unit and annual area treated by their exotics program, and varied slightly by park. Species shown to be highly invasive, but not widespread in the park, are top priority for detailed mapping; more widespread but still invasive species are mapped with a point unless populations are small.

The list of priority areas for searches was made by ranking subwatersheds—drainage-based subunits of watersheds—by number and degree of current infestations; risk of further infestation; and priority of resources present. Subwatersheds were ranked, grouped along the most natural breaks, and assigned a score.



Volunteers Carolyne Orazi, Lou Sian, and Debbie Blancas conduct a survey for priority early detection species. *Photo by Jen Jordan, NPS.*

Total score was obtained by adding risk to weighted (2x) rare species priority score and subwatersheds approximately quartered into high, significant, moderate, and

low priority. High-priority subwatersheds are visited annually; significant and moderate, biennially; and low, once every five years.

The document is only as useful as it is used, so please "steal with pride" (and attribution)!

Surveys are conducted by either National Parks staff or volunteers. Surveys cover roads and trails, with data collection ranging from simple (presence/absence during a survey) for low-priority species or Level 1 volunteers to complex (digital point and polygon data, as well as associated phenological and habitat data, taken with a handheld unit) for highly skilled volunteers and staff and high-priority species. Information is stored in GeoWeed, Sonoma Ecology Center's improvement on The Nature Conservancy's Access-based vegetation management information system WIMS. GeoWeed (geoweed.org), like WIMS, is freely available and allows for digital data collection through a series of ArcPad forms. Absence data are tracked through the use of the "Survey Area" portion of the database.

The protocol's utility is not limited to early detection; several of the Standard Operating Procedures—such as mapping, and plant collection and vouchering—and the general framework of prioritizing areas and species apply to invasive species management in general. The document is only as useful as it is used, so please "steal with pride" (and attribution)!

Locating Materials

Early Detection of Invasive Plant Species in the San Francisco Bay Area Network is available at science.nature.nps.gov/im/units/sfan/vital_signs/Invasives/docs/SFAN_EarlydetectionV1.4.pdf

Materials for the volunteer-based program detailed in the protocol, including an instruction manual, data sheets, maps, and plant ID cards, can be found at science.nature.nps.gov/im/units/sfan/vital_signs/Invasives/weed_watchers.cfm or www.weedwatcher.org.

Andrea Williams can be contacted at awilliams@marinwater.org.

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Your tax-deductible donations are extremely valuable in supporting our programs. Thank you!

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New Members

As a Cal-IPC member, you join a powerful network of land managers, researchers, volunteers, and concerned citizens. Welcome!

Alyson Aquino, **Steven Ash** (IPM-PCA, San Rafael), **Rita Beard** (NPS, Fort Collins, CO), **Gary & Jan Beeler** (Fallbrook Land Conservancy), **Wade Belew** (CNGA, Cotati), **Daniel Bohlman** (The Land Conservancy of SLO County), **Gabriela Castaneda** (Audubon Center at Debs Park, Los Angeles), **Cody Chappel** (TreePeople, Beverly Hills), **Jennette Corbitt** (Santa Ana Watershed Association, Redlands), **Mitch Farr** (Natures Image, Lake Forest), **Michael Friedenber** (Rocky Mountain Elk Foundation, Bakersfield), **Melodie Grubbs** (The Land Conservancy of SLO County), **Denny Hoeh** (Modesto), **Diane Ikeda** (USFS, Vallejo), **Michael Kelley** (Los Angeles), **Miriam Lara-Vamstad** (Joshua Tree National Park, Twentynine Palms), **Ted Latta** (City of Pasadena Parks and Natural Resources), **Amy Locke** (Tetra Tech, Inc., Santa Barbara), **Leah MacCarter** (American Conservation Experience, Avalon), **Doni Mae** (Shingle Springs), **Shelly Magier** (San Gabriel Mountains CNPS, Pasadena), **Phil Martinelli** (Rocky Mountain Elk Foundation, Alamo), **Kipp Marzullo** (Temecula), **Katy Matthews** (Joshua Tree National Park, Twentynine Palms), **Cliff McLean** (CNPS San Gabriel Mountains Chapter, Covina), **Virginia Meyer** (Sacramento City College, Shingle

Springs), **Cathy Nowak** (County of Orange Parks, Silverado), **Cynthia Perrine** (San Luis Obispo), **Steven Reinoehl** (Natures Image, Lake Forest), **Brian Rekart** (TreePeople, Beverly Hills), **Robert Rhew** (UC Berkeley), **Eddie Rosas** (Habitat Restoration Sciences, Inc., Escondido), **Kenneth Ross** (County of LA Dept. of Public Works, Alhambra) **Cristian Sarabia** (Palos Verdes Peninsula Land Conservancy, Rolling Hills Estates), **Daud Senzai** (CA Dept. of Agriculture, Lemon Grove), **Pieter Severynen** (North East Trees, Los Angeles), **Zachary Silber-Coats** (Capitola), **Jerome Smith** (Jerome Smith Arboriculture, Culver City), **Jon B. Stafford** (Habitat Restoration Sciences Escondido), **Steven Starcher** (San Joaquin River Stewardship Program, Fresno), **Christopher Stevenson** (CalTrans, Los Angeles), **Amelia Swenson** (American Conservation Experience, Avalon), **Larry Teves** (Larry Teves Spray Service, Tipton), **Justin Valliere** (Trabuco Canyon), **Lori Weingartner** (Joshua Tree National Park, Twentynine Palms), **Judy & Joan Williams** (Fallbrook Land Conservancy), **David Wilson** (Irvine Ranch Conservancy, Aliso Viejo), **Rachel Wing** (Pasadena)

Renewing Organizational Members

Organizational Members advance Cal-IPC's mission to protect California's wildlands from invasive plants. Thank you for your support!

Cache Creek Conservancy
City of Walnut Creek Open Space
CNPS - Los Angeles Chapter
Contra Costa Resource Conservation District
County of Lake Ag. Commissioner's Office
Fallbrook Land Conservancy
Habitat Restoration Sciences
Inyo County Water Dept
Irvine Ranch Conservancy
Los Angeles Conservation Corps.
Napa County Flood Control District
Olofson Environmental, Inc.
RECON Native Plants
Rocky Mountain Elk Foundation
Santa Lucia Conservancy
Shasta Trinity National Forest
Six Rivers National Forest
The Land Conservancy of SLO County
Tom Dodson & Associates

Readings & Resources

Know of a resource that should be shared here? Send it to edbrusati@cal-ipc.org by April 1 for inclusion in the next newsletter.

Special journal issue

In October, the *Journal of Applied Ecology* published a special “virtual” (online) issue on “Key Perspectives in Management of Biological Invasions”. Articles include “Using ecological restoration to constrain biological invasion”, and “Effects of timing of prescribed fire on the demography of an invasive plant, spotted knapweed *Centaurea maculosa*”. www.journalofappliedecology.org

Early detection website

The Bay Area Early Detection Network has unveiled its new website with links to its occurrence reporting tool for San

Francisco Bay Area counties. www.baedn.org

Identifying pathways

IUCN’s “Neighborhood Watch - Early Detection and Rapid Response to Biological Invasion along U.S Trade Pathways” identifies measures required to improve biosecurity measures in international trade, especially at U.S. ports, as well as a possible funding mechanisms based upon the “polluter pays” principle. cmsdata.iucn.org/downloads/neighborhood_watch.pdf

Amphibian symposium

Defenders of Wildlife hosted the symposium, “The Role of Trade in the Amphibian Crisis,” in November. The symposium included discussion of the deadly chytrid fungus and also briefly touched on the issue of invasive species of amphibians. The summary of proceedings is now available. www.defenders.org/amphibiantrade-symposium

Print a calendar

The Alien Plant Working Group’s Invasive Plant Calendar for 2010 is available online to download and print. This year’s theme is “Identity Theft”, highlighting invasive plants that resemble native species. www.nps.gov/plants/alien/pubs/calendar.htm

Effects of climate change

The U.S. Department of Agriculture released a new report at the climate talks in Copenhagen. “The Effects of Climate Change on U.S. Ecosystems” identifies the effects climate change is having and is expected to have on natural resources and ecosystems services in the U.S. over the next several decades. (Release #0611.09) www.usda.gov/img/content/EfectsofClimateChangeonUSEcosystem.pdf

2010 Wildland Weed Field Course Calendar

Cal-IPC’s Wildland Weed Field Course Program specializes in providing workshops for professional land managers, teaching the tools and providing the resources necessary to plan and implement effective invasive weed management. Discounted registration fees are offered to Cal-IPC Members and to restoration volunteers.

San Diego:

- March 30 - Biology & Identification
- March 31 - Control Methods

San Francisco Peninsula:

- April 27 - Control Methods
- April 28 - Mapping Invasive Weeds

McLaughlin Natural Reserve, Clear Lake:

- June 8 & 9 - Integrated Control Methods **NEW!**

Ventura Pre-Symposium Field Course:

- October 13 - Strategic Approaches **NEW!**

Check our website to learn more about our expert instructors, the topics covered, and the field course locations. Courses include reference information, a great lunch, and Cal. Dept. of Pesticide Regulation and International Society of Arboriculture continuing education credits.

Register at www.cal-ipc.org, or call us at (5140) 843-3902.



THE WILDLAND WEED CALENDAR

February-March

Society for Range Management & Weed Science Society of America

February 7-10
Denver, CO

www.rangelands.org/denver2010

Western Society of Weed Science

March 8-11
Waikoloa, HI

www.wsweedscience.org

Invasive Weeds Awareness

Day at the Capitol

March 10
Sacramento

www.cal-ipc.org

5th Biennial Lake Tahoe Basin Science Conference

March 16-17

Incline Village, NV

www.tahoescience.org/tsc_science_events/Conference.aspx

April-May

CNGA - Field Day at Hedgerow Farms

April 16
Winters

www.cnga.org

CNGA - Identifying the Native and Naturalized Grasses of SoCal

April 30 - May 1

Fallbrook

www.cnga.org

SERCAL Annual Conference

May 19-22

Mammoth Mountain

www.sercal.org

CNGA - Identifying the Native and Naturalized Grasses of CA

May 22-23

Point Reyes Station

www.cnga.org

June-July

Weeds Across Borders

June 1-4

Shepherdstown, West Virginia

www.weedcenter.org/wab2010

CNGA North Coast Grass Symposium

June 3-4

Arcata (limited enrollment, register early)

www.cnga.org

CNGA Grassland ID Workshop

June 5-6

Arcata

www.cnga.org

August and beyond

2nd International Conference:

Invasive Alien Plants in Mediterranean-Type Regions of the World

August 2-6

Trabzon, Turkey

archives.eppo.org/MEETINGS/2010_conferences/mediterranean_ias.htm

International Conference on Aquatic Invasive Species

August 29-September 2

San Diego

www.icaais.org

Cal-IPC 2010 Symposium

October 13-16

Ventura

www.cal-ipc.org/symposia



Gina Darin of West Sacramento won this one-of-a-kind license plate frame in the Symposium raffle and now **proudly advertises Cal-IPC wherever she travels**. A long-time Cal-IPC volunteer, Gina formerly worked for the Weed Management Area program at the Cal. Dept. of Food and Agriculture.

Quotable

“My camels have killed every tamarisk on our place, so why not give it a whirl?”

- Colorado rancher Maggie Repp, *High Country News*, January 20. See page 3.

“The analogy we have used is, these (species) are like slow-motion forest fires.”

- Randy Henry, Oregon State Marine Board, *News-Review*, November 3. See page 3.



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Membership

- Regular \$40
- Student/Volunteer \$20
- Organization* \$150

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Attach contact information for add'l individuals.*

Joint Memberships

- SERCAL only add \$25
- CNGA only add \$35
- SERCAL & CNGA add \$65

Cal-IPC Membership runs on the calendar year. Those who join after June 30 each year will be current through the following calendar year. Joint memberships receive a \$5 discount on each organization's normal rate, and apply only to Regular Cal-IPC memberships.

- Check here if you would prefer to receive the *Cal-IPC News* as a link to a pdf file online rather than a paper copy.
- Occasionally, we share members' addresses with like-minded organizations. Check if you **do not** want your information shared.

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