

CalEPPC NEWS

NEWSLETTER OF THE CALIFORNIA EXOTIC PEST PLANT COUNCIL

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FALL 1993



CalEPPC News is published quarterly by the California Exotic Pest Plant Council, a non-profit organization. The objects of the organization are: to provide a focus for issues and concerns regarding exotic pest plants in California; to facilitate communication and the exchange of information regarding all aspects of exotic pest plant control and management; to provide a forum where all interested parties may participate in meetings and share in the benefits from the information generated by this council; to promote public understanding regarding exotic pest plants and their control; to serve as an advisory council regarding funding, research, management and control of exotic pest plants; to facilitate action campaigns to monitor and control exotic pest plants in California; and to review incipient and potential pest plant management problems and activities and provide relevant information to interested parties.

Letters to the Editor, notices, articles of all types, volunteer workday schedules, photographs and line drawings are welcome and may be submitted directly to the editor at the address below. We invite you to utilize the *CalEPPC* newsletter as a forum for describing your project, asking for help, or bringing new issues or developments to the forefront. Electronic submission is gratefully accepted in PC-formatted 3.5" or 5.25" disks for WordPerfect or Microsoft Word. Please enclose a letter quality hard copy with disk. Copy for the Winter 1994 issue is due with the editor by January 15, 1994.

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President's Message

CalEPPC Symposium '93 was a fitting start to the California Exotic Pest Plant Council's second year. It was attended by over 120 people and featured an array of excellent presentations. One of the highlights was having Dr. Phyllis Windle speak on the *Report on Harmful Non-Indigenous Species* (just five days after it was released) which she directed for the U. S. Congress' Office of Technology Assessment. Another was Dr. Marcel Rejmánek's presentation of the encouraging, and not-yet-published, results of his work to develop an index of alien species' invasiveness. In fact, each of the talks was compelling and well presented. The poster displays were greatly improved over those of the 1992 Symposium; more numerous, better organized, and far better represented. As in 1992, the working group sessions were very productive and, as hoped, there was a tremendous amount of informal networking and information exchange. The symposium ended with a very well organized and interesting field trip to the Malibu Lagoon and through parts of the Santa Monica Mountains wilderness. As many of you who participated in the field trip may have suspected, much of the area we travelled through was burned in the wildfires that made the national news later in the month. Many people worked very hard to make the symposium such a success; Sally Davis who oversaw all arrangements with the hotel, and Jo Kitz who organized the field trip, deserve special thanks.

Several projects were initiated or re-initiated at the symposium. Two in particular require input from YOU the reader:

1. Tony Bomkamp will organize a collection of slides on weeds and weed control in California natural areas. These slides will be available for anyone wishing to make a presentation about this under-recognized problem. First, however, Tony needs slides, and that is where YOU come in. Please send him copies of any slides which clearly depict a problem species, infestations, control programs, native species threatened by competition from weeds, etc. Please send these slides to **Tony Bomkamp, 1296 Flower Street, Anaheim, CA 92805, 714.545.4120.**
2. Beth Collins will organize a collection of "facts about weeds in California natural areas." This might include information on a park or region of the state infested by a particular species, the amount of money spent each year to control exotic pest plants by a State Park, the amount of water consumed by a particular infestation or species, etc. We will use this information to put together eye-catching press releases, and information packets that could be distributed to students, legislators, and policy makers. If YOU are aware of such facts, or other noteworthy or newsworthy statistics, please forward this information to **Beth Collins, Pacific Institute, 1204 Preservation Park Way, Oakland, CA 94612, 510.251.1600.**

Another project that gathered steam at the symposium was a drive to promote the creation of a State Wildland Weed Control Coordinator. I met with several other members of CalEPPC and the California Native Plant Society during the Symposium to plan strategy for the drive. A week and a half later we made a presentation to the staff of the California Biodiversity Executive Council. The presentation was very well received and we were asked to form a Task Force, including representatives from several state and federal agencies. The Task Force is charged with developing a specific proposal, including a job description for the position, offices which might house this person, and solid offers of funding from affected agencies. Thus far, representatives from most of the agencies we have targeted have agreed to participate on the Task Force, which will also include at least four CalEPPC members. We will have a draft position description ready for review when the full Task Force meets on the 7th of January.

In the short span of time since the 1993 Symposium, work has begun in earnest to plan CalEPPC Symposium '94. The attendees of the symposium voted overwhelmingly to hold it in the Sacramento region (within 40 miles of the city). We are now making arrangements with speakers; some will be new, and others like Dr. David Bayer, who spoke on herbicide physiology, will be back by popular demand. The symposium will be held sometime between the 30th of September and the 16th of October. We expect to have a site and time reserved by mid-January, and we plan to get the word out early (and often) to insure excellent attendance and another constructive, informative, and fun symposium. In the meantime, I encourage you to participate in CalEPPC: submit articles on control techniques or weed biology to Sally Davis for publication in this newsletter; join a working group or develop one that tackles a topic we have not yet addressed; and encourage others to join CalEPPC. Rather than endure a "sophomore slump" we aim to grow and reach out further in this, our second year.

John Randall, president

Pampas Eradication Program - P.E.P.

by

John H. Madison

Exotic Plant Committee Chair of the Dorothy King Young Chapter, California Native Plant Society

Editor's Note: In 1987, the Dorothy King Young (DKY) Chapter of the California Native Plant Society began a community project in the Gualala-Point Arena area to control the infestations of Cortaderia jubata which were coming to dominate the views from the local roads. Since then, C. jubata, or jubatagrass, has increased as a problem of the coastal areas of California. The DKY Chapter reprinted the updated paper in the March-April 1991 Calypso Newsletter. It was their sincere desire that this article will help others to successfully kill, control, and perhaps even eradicate this pest from areas of their concern.

The Beginning

Of the two principal species of Pampas grass, one, *Cortaderia jubata*, is the pest. The other, *Cortaderia selloana* is usually a well behaved garden subject. Many nurserymen are unaware of the difference between the two. In general, the jubatagrass is favored, as it can be brought into bloom in a gallon can in one year. Jubatagrass also tends to be smaller than the ornamental Pampas grass, and so is better adapted to the small urban landscape. *C. selloana* takes space. In the past, when grown commercially for the plumes, it was planted 10 feet on center in rows which were spaced at 16 feet.

In those coastal counties where forestry is dominant, jubatagrass was at first welcomed. its harsh cutting leaves kept deer out of reforested areas and protected the tree seedlings from deer. Later however, jubatagrass itself crowded out the young seedlings. In the 1960s, Georgia Pacific had to abandon 1100 acres in Humboldt County to jubatagrass as there was, as then, no economical way to control it. At that time 7000 additional acres were severely infested.

From the standpoint of the coastal dweller, the geometric increase in jubatagrass over the past decade has often changed our beautiful landscape into a monotonous prairie of dun-colored see heads that look like old dishrags on sticks. From the standpoint of the botanist, jubatagrass is crowding out native coastal vegetation.

Jubatagrass was a concern of the DKY Chapter since its beginning, and there were frequent discussions about how a control program could be initiated. Such discussions were defeated when the magnitude of the task was recognized. Al Gustus came before the board in the winter of 1986-87 with a four-page proposal to initiate a community program, with DKY spearheading the efforts. With the thought that others would help share the burden, the program was launched. Al obtained assessor's maps of the area that was to be considered in the initial phase, and got the names and addresses of the owners of each parcel. At a special meeting of the DKY board, Bill Perry accepted the program management position, with the condition that he be full manager. \$500 was appropriated to start the program. Mary Rhyne became CNPS liaison officer and Steve McLaughlin community Liaison officer. Steve was the immediate past-president of the Lions, and associate publisher of the local newspaper, so he provided a good liaison with the community at large.

A town hall meeting was arranged by Mary, where there was a good turnout by the community and service clubs. The program was clearly presented. The need was shown. A budget was presented. The nature of herbicides and the spray procedure was presented. Four members of Caltrans were present and they agreed to ask Sacramento for funds to spot spray the Highway One right-of-way in the area of control. During the presentation of the plan, care was taken to point out the negative features of the eradication program:

- There would be dead and dying plants in the summer landscape
- Fire laws require the removal of dead plants within 30 feet of a building
- Dead clumps of leaves would take more than one year to decay unless covered by soil
- The program would require follow-up sprays in subsequent years
- Success is no 100% possible

These caveats were all accepted by the audience. The clubs addressed were enthusiastic, and the Lions and Soroptimists pledged financial support. The Lions took on the project, pledging crews to spray the jubatagrass. There was no dissention, donations were made, and the project became a COMMUNITY PROJECT!

Getting Under Way

Al Gustus accepted the job of fund raiser, and within a month we had almost \$3,500, enough for the first three years as it turned out. CNPS volunteers were selected for the next phase. Each took one or two of the assessor's

maps, surveyed the area thereon, marking the locations of jubatagrass on the maps. The owner of each parcel where jubatagrass was found was sent a letter of explanation, a consent form, and a stamped return envelope. The letter and consent forms were edited several times and then submitted to CNPS legal counsel for review. Counsel suggested two changes be made. One was to address the owner, not the "legal" owner, as the latter could be an estate, a trust, or partnership, and as such could make getting consent difficult. Second, we granted immunity to the permittee from liability from any injuries we would sustain during trespass.

Because of the many persons and properties involved in the project, we took great care with the permit process. The County Agricultural Commissioner did not require a spray permit, as volunteers are not paid. As we were spot spraying rather than area spraying, the Water Resources Board did not require a permit, but did ask us to file a plan of our program. Mendocino County required a Plan Compliance Report which carried a \$75 fee. The Coastal Commissioners agreed there were no problems, yet we would have to go through the permit process, which required us to file copies of all consent letters. We reduced the letters, and copied four to a page. That permit took us only three weeks to obtain.

As soon as a number of permits were in hand we began spraying. In some instances, second and third letters were required, and in some instances where titles were in escrow, it was several months before we had valid permits. We had a few refusals and two hateful letters. In time, most of the refusals were changed to assents; some by sweet talk, some by change of title, and some by change of heart. During that first year we sprayed the highly visible plants from the Gualala River through Point Arena. Large lots proved easy to spray. Residential lots were more difficult, and sometimes required a volunteer supervisor with maps who could point out lot boundaries, to indicate which lots had jubatagrass on them, and those lots that were not to be sprayed.

The Use of Roundup® (glyphosate)

We used a pickup carrying two plastic barrels filled with clean, domestic water. Roundup will adsorb on clay particles, so if dirty water is used, the effectiveness of the spray is reduced or destroyed. We had three SOLO® 425 backpack sprayers which are totally plastic, from the filter screens where the herbicide goes in, to the fan nozzle where it comes out. Glyphosate will react with metal; if a galvanized tank is used, the reaction produces explosively flammable hydrogen gas.

SOLO sprayers of the of the 13-liter capacity (3.43 gallons), cost about \$100 each, and weigh about 34 pounds filled. We purchased Roundup with a landscape contractor's discount for about \$70 per gallon. One gallon makes enough spray to cover about 1200 plants. The spray tank is filled about ~~one-half~~ ^{2 2/3} full of water, adding ~~2 2/3~~ ^{2 2/3} ounces of glyphosate (a 2% solution) and 1/2 ounce of Triton® AG 98, a non-ionic surfactant or wetting agent. Because of the strong polarity of the glyphosate molecule, any surfactant used should be non-ionic in nature. Two ounces of Blazon®, an agricultural marker dye, may be added when stands are large and dense as the dye is helpful in determining which plants have already been sprayed. Caltrans adds the adjuvant Bivert® to their spray mix. We have tried Bivert but have not recognized any improvement in the results we get.

Chemicals are not added first because some of the concentrated material could get into the pump and come out as a slug dose. This would leave the remainder of the mix proportionately weaker. And filling the second half helps to mix the materials. With the chemical materials added to the water, the tank is then filled within a half-inch of the tank top. This aids in mixing and helps prevent spillage while the knapsack straps are adjusted. Each person on the crew is provided coveralls, rubber gloves, and eye protectors. The spray crew is then read the spraying rules by the leader.

In spraying, a flat fan-nozzle is used with low pressure, high volume delivery. We stop spraying if a wind comes up, and we don't spray if there is threat of rain. Roundup must be on the plant for at least six hours to be effective. Plants should not be cut prior to spraying. The more leaf surface, the more effective the spray. The entire leaf surface of a plant must be sprayed to wet the leaves, but without runoff. The plant consists of several shoots. Each individual shoot not sprayed will probably survive and regenerate. Seedlings may appear in the dead clump the following year and they are easily pulled. However, a missed shoot that is regenerating is difficult to pull out. We spray from March through September with good kill results, and have found we can spray at almost any time of year, though we have not tried spraying in cold weather. Spray actively growing plants provided with adequate soil moisture. We are fortunate to have available a fairly benign herbicide that is almost 90% effective against the target plant. We are also fortunate that glyphosate appears to enter through the leaf surface and not through the stoma as with some herbicides. Pampas grass species are drought resistant plants and the stoma are few and protected in deep grooves with papillae over them.

Continued next issue

CALIFORNIA EXOTIC PEST PLANT COUNCIL DRAFT LIST

EXOTIC PEST PLANTS OF GREATEST CONCERN

October 1993

We used input from CalEPPC and CNPS members to prepare these draft lists. We want them to focus on exotic plants that are serious problems in wildlands so we haven't included plants that (1) do not spread beyond disturbed areas, (2) are not eradicable (Mediterranean annual grasses and filarees), (3) naturalize only sparingly, or (4) are confined to roadsides and agricultural fields. How do you think these lists should be used? Any plants you would add or omit? Please fill out the "Comments" page and mail it to: Ann Howald, 210 Chestnut Ave., Sonoma, CA 95476.

LIST 1: MOST IMPORTANT WILDLAND WEEDS; WELL-ESTABLISHED; WIDESPREAD; CAN DOMINATE COMMUNITY

Scientific Name	Common Name	Comments
<i>Ammophila arenaria</i>	European beach grass	Coastal dunes
<i>Arundo donax</i>	giant reed	Riparian areas
<i>Bromus tectorum</i>	cheat grass	Sagebrush understory
<i>Carpobrotus edulis</i> and <i>C. chilensis</i>	freeway iceplant	Many coastal communities, esp. dunes
<i>Centaurea solstitialis</i>	yellow star thistle	Grasslands
<i>Cortaderia selloana</i> and <i>C. jubata</i>	Pampas grass; jubatagrass	Coastal dunes, coastal scrub, Monterey pine forest
<i>Cynara cardunculus</i>	artichoke thistle	Grasslands
<i>Genista monspessulana</i> (= <i>Cytisus monspessulanus</i>)	French broom	Coastal scrub, oak woodland
<i>Cytisus scoparius</i>	Scotch broom	Coastal scrub, oak woodland
<i>Eucalyptus globulus</i>	Tasmanian blue gum	Riparian areas, grasslands
<i>Pennisetum setaceum</i>	fountain grass	Grasslands, desert canyons
<i>Rubus discolor</i> (= <i>R. procerus</i>)	Himalayaberry	Riparian areas, marshes, oak woodlands
<i>Tamarix chinensis</i> spp.	tamarisk; salt cedar	Desert washes, riparian areas

LIST 2: WILDLAND WEEDS OF SECONDARY IMPORTANCE: LOCALIZED; EARLY STAGE OF INVASION; AND/OR LACKS ABILITY TO DOMINATE COMMUNITY

Scientific Name	Common Name	Comments
<i>Acacia baileyana</i>	Cootamundra wattle	Include? Mainly near habitations
<i>Acacia decurrens</i>	green wattle	Include? Mainly near habitations
<i>Ageratina adenophora</i> (= <i>Eupatorium adenophorum</i>)	eupatory	Coastal canyons, San Diego to Marin Co.; San Gabriel Mtns
<i>Ailanthus altissima</i>	tree of heaven	Riparian areas
<i>Albizia lophantha</i>	plume acacia	Serious natural areas weed?
<i>Amaranthus albus</i>	tumbleweed	Serious natural areas weed?
<i>Aptenia cordifolia</i>	red apple	?
<i>Arctotheca calendula</i>	capeweed	Spreads only vegetatively
<i>Cardaria chalapense</i>	lens-podded white-top	Central Valley, esp. wetlands
<i>Cardaria draba</i>	hoary-cress; white-top	Riparian areas, marshes
<i>Carduus acanthoides</i>	giant plumeless thistle	?
<i>Carduus pycnocephalus</i>	Italian thistle	Pastures, grasslands
<i>Centaurea calcitrapa</i>	purple star thistle	Grasslands
<i>Centranthus ruber</i>	red valerian	Serious natural areas weed?
<i>Cirsium arvense</i>	Canada thistle	Mainly disturbed sites?
<i>Cirsium vulgare</i>	bull thistle	Riparian areas, marshes, meadows
<i>Conicosia pugioniformis</i>	narrow-leaved iceplant	Coastal dunes

LIST 2: WILDLAND WEEDS OF SECONDARY IMPORTANCE: LOCALIZED; EARLY STAGE OF INVASION; AND/OR LACKS ABILITY TO DOMINATE COMMUNITY (continued)

Scientific Name	Common Name	Comments
<i>Conium maculatum</i>	poison hemlock	Disturbed moist soil, many communities
<i>Coprosma repens</i>	mirror plant	Include? Not naturalized in Jepson Manual
<i>Cordyline australis</i>	New Zealand cabbage tree	Infestation at Salt Point SP
<i>Cotoneaster</i> spp.	cotoneaster	Disturbed sites, many comm.
<i>Cotula coronopifolia</i>	brass buttons	brackish marshes/wetlands
<i>Crataegus monogyna</i>	hawthorn	Crystal Springs watershed
<i>Digitalis purpurea</i>	foxglove	Prairies, meadows, roadsides
<i>Dipsacus</i> spp.	fuller's teasel	Include? Mainly roadsides
<i>Echium pininana</i>	pride of Teneriffe	Include? Twin Peaks (SF); not in Jepson Manual
<i>Eichhornia crassipes</i>	water hyacinth	Established in natural lakes, ponds?
<i>Erechtites</i> spp.	Australian fireweed	Coastal woodlands
<i>Ehrharta</i> spp.	Veldt grass	Sandy soils, especially coastal dunes
<i>Euphorbia esula</i>	leafy spurge	Rangeland
<i>Ficus carica</i>	edible fig	Central Valley riparian wldls
<i>Foeniculum vulgare</i>	wild fennel, anise	Roadsides, grasslands, Santa Cruz Island
<i>Gunnera tinctoria</i>	gunnera	Localized; Point Reyes (Marin County)
<i>Hedera helix</i>	English ivy	Riparian areas, oak woodland
<i>Hypericum perforatum</i>	Klamath weed	Grasslands; biological control is effective
<i>Ilex aquifolium</i>	English holly	Threat to coastal forests?
<i>Lepidium perfoliatum</i>	perennial pepperweed	Coastal and inland marshes
<i>Lupinus arboreus</i>	bush lupine	Problem on north coast dunes where not native
<i>Marrubium vulgare</i>	horehound	Include? Mainly disturbed sites
<i>Melilotus alba</i>	white sweet clover	North coastal dunes, roadsides
<i>Mentha pulegium</i>	pennyroyal	SF Bay area wetlands
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant	Coastal dunes
<i>Myoporum laetum</i>	myoporum	So. Cal. coast
<i>Nicotiana glauca</i>	tree tobacco	Coastal scrub
<i>Oryzopsis miliacea</i>	Smilo grass	?
<i>Parentucellia viscosa</i>		No. Coast dune swales
<i>Pennisetum clandestinum</i>	Kikuyu grass	Coastal areas
<i>Phalaris aquatica</i>	Harding grass	?
<i>Phyla nodiflora</i> (= <i>Lippia nodiflora</i>)	lippia	Wet places; vernal pools; some varieties are native
<i>Pinus radiata</i>	Monterey pine	Problem in relict forests?
<i>Pyracantha</i> spp.	pyracantha	Problem in wildlands?
<i>Ricinus communis</i>	castor bean	Problem in wildlands?
<i>Robinia pseudoacacia</i>	black locust	Riparian areas, canyons
<i>Salvia aethiops</i>	Mediterranean sage	?
<i>Salsola soda</i>	glasswort	salt marshes
<i>Salsola tragus</i> (= <i>S. kali</i>)	Russian thistle, tumbleweed	Mainly deserts
<i>Senecio elegans</i>	purple ragwort	Include? No. coast dunes
<i>Senecio jacobaea</i>	tansy ragwort	Rangelands; biological control is effective
<i>Senecio mikanioides</i>	German ivy	Riparian areas
<i>Spartina alternifolia</i>	eastern cordgrass	North coast salt marshes
<i>Spartium junceum</i>	Spanish broom	Coastal scrub, oak woodland
<i>Tanacetum vulgare</i>	tansy	Problem in wildlands?
<i>Ulex europaeus</i>	gorse	North coastal scrub
<i>Verbascum thapsus</i>	common mull	Include? Mainly roadsides
<i>Vinca major</i>	periwinkle	Riparian areas; oak woodland
<i>Watsonia bulbifera</i>		Roadsides, fields ?

COMMENTS?

CALIFORNIA EXOTIC PEST PLANT COUNCIL

DRAFT LIST

EXOTIC PEST PLANTS OF GREATEST CONCERN

October 1993

We'd like to hear from you! Please provide comments on our draft lists and return them to Ann Howald, 210 Chestnut Avenue, Sonoma, CA 95476.

SUGGESTED ADDITIONS/DELETIONS:

List	Species name	Add/delete	Reason

How do you think List 1 and List 2 should be used?

Would you favor coding or subdividing List 2 to indicate the characteristics and geographic area of invasion for each plant?

Name and phone number _____
(so we can follow-up if needed)

Abstracts of the California Exotic Pest Plant Symposium '93

October 8-9 1993, Westlake Village, California

The Rapid Expansion of Noxious Weeds on BLM Land and the Impacts to Ecosystem Health by Jerry Asher, Bureau of Land Management, Portland, OR

Noxious weeds (hereinafter called weeds) are increasing rapidly on both disturbed and relatively undisturbed lands in the western U.S. We know that there is an "explosion in slow motion" in at least some areas, but, in general, inventories to detect the location and magnitude of weed infestations are lacking. Prevention of weed spread, combined with early detection and eradication of small infestations is urgently needed. The major thrust in managing for biodiversity and ecosystem health is striving to have a wide variety of healthy native plants. If a plant community is functioning well, the soil, air, water and animal components of the ecosystem usually will function well also. The single greatest threat to native vegetation is the rapid spread of weeds. Some weeds increase erosion and lower water quality.

Weeds, primarily from Eurasia, began arriving in earnest to western rangelands in the 19th century. In Eurasia, these plants were generally not invasive because they evolved with a natural complement of insect predators, pathogens, fungi, and competition from other plants. However, in the process of entering this country they were released from those natural enemies and consequently have the ability to dominate in many areas. Weed populations, like human populations, can increase exponentially, beginning slowly, they doubling and redoubling. For example, weeds are estimated to be spreading at approximately 2000 acres per day on BLM lands alone. Examples in many western states, including California, show that within only 20-30 years, a specific weed can expand from just a few acres to many millions of acres of rangeland. And, while we don't know how invasive they will be, new weeds are arriving at the rate of nine new species per state per year.

The challenge of controlling weeds may seem overwhelming while viewed "everywhere or all at once." However, on a watershed or management unit basis, reaching weed management goals can be quite reasonable using Integrated Weed Management (IWM). IWM includes: 1.) Prevention through education, awareness, and training to reduce or stop the spread of weed seed by people, horses, livestock, hikers, etc; 2.) Restoring sites most

susceptible to weeds with native plants; 3.) Developing inventory and monitoring strategies to detect new infestations; 4.) Controlling or eradicating small infestations with handpulling if effective, herbicides if necessary, combined with biological control; 5.) Restoring controlled areas, where necessary, to help prevent re-invasion; and 6.) Monitoring effectiveness of control efforts.

Weed management plans are needed for all areas and the cooperation of all landowners is essential. The "Guidelines for Coordinated Management of Noxious Weeds in the Greater Yellowstone Area" is one example. As user groups, conservation organizations, and agency people see themselves as both part of the problem and the solution, a cooperative enthusiastic atmosphere will prevail.

Introduction and Distribution of Biological Control Agents Against Exotic Weeds in California by Michael Pitcairn, California Department of Food & Agriculture, Sacramento, CA

Many of the attributes that allow non-native weeds to invade new habitats also make them prime targets for biological control. These plants often leave their native predators, parasites, and diseases behind, and as a result, have a higher survival rate and better competitive ability against native species than they would if their natural enemies were present. Two agencies, the USDA Agricultural Research Service and the California Department of Food and Agriculture are currently introducing natural enemies on several non-native weeds in the state, including yellow star-thistle (*Centaurea solstitialis*), bull thistle (*Cirsium vulgare*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea maculosa*), and gorse (*Ulex europaeus*). Several steps are necessary to achieve successful biological control of weeds. Initially biologists must explore the native range of targeted species to locate their natural enemies. Once found, the natural enemies are tested for host specificity both in the field in their native habitat and in quarantine in the United States. Insuring that biocontrol agents will not attack and damage non-target species is the primary concern when selecting natural enemies for importation into California. All potential biocontrol agents are exposed to several agricultural species and native California species related to the target weed in order to determine if they will feed on and damage

them. If considered safe, the natural enemy will be introduced into field sites in California and its populations monitored for several years to determine their impacts on the targeted species. It can require 10-20 years from the time a biocontrol project is initiated until control is achieved, but once achieved, control is permanent.

Predicting Invasiveness by Marcel Rejmánek, Section of Evolution and Ecology, University of California, Davis, CA

We need theories which can help us set priorities for the control of introduced invasive weeds and allow us to predict the risk that a given species will become invasive if it is introduced. Weed, invader, and colonizer are labels used for three closely related, but not identical concepts. Each reflects a different perspective: anthropocentric (weeds are any plants that interfere with the management goals of people); ecological (colonizers appear in early successional environments); and biogeographical (invaders are spreading into areas where they are not native). Nevertheless, there is considerable overlap between these three categories, and a large number of obnoxious species can be given all three labels. Due to this overlap, generalizations about species in one of these categories should help us understand the performance of many (but not all) species belonging to the other two. At present, however, only limited generalizations based on plant physiology, genetics, and demography are available. Recent work, however, has shown great promise. Analyses of statistical relationships between the native and introduced ranges of species introduced from Eurasia to the Americas and vice-versa yielded insight into characteristics of successful invaders. In addition, the invasiveness of pines (*Pinus* spp.) and in all likelihood, other woody species of seed plants was shown to be predictable on the basis of a small number of simple biological characters.

Caltrans Vegetation Control Program by Larry G. Shields, California Department of Transportation (Caltrans), Sacramento, CA

Caltrans is responsible for vegetation control and landscape maintenance throughout the state of California. This includes 15,000 center-lane miles of highway, 22,500 acres of landscape plantings, 230,000 acres of roadside rights-of-way, 97 roadside

rest areas, 289 vista points, and 250 commuter parking lots. Total annual costs for this work, excluding irrigation, are \$55 million. Caltrans controls vegetation to protect public health and safety, to prevent fires, and to protect highway facilities and associated developments. This program has undergone great changes since its initiation before World War II.

In 1992 Caltrans completed an EIR on the program which emphasized the importance of using an Integrated Vegetation Management Approach, reducing the use of chemicals to control vegetation, and promoting the use of native species to crowd out unwanted plants. Prevention of problems is promoted rather than reaction to problems; from this perspective the ideal is to design rights-of-way that need little or no vegetation control. Caltrans also seeks to improve the control program by conducting and sponsoring research on control and revegetation techniques, and by soliciting inputs from the Roadside Vegetation Management Public Advisory Committee.

The Effects of Fire on Introduced Annual Grasses by Robin Wills, The Nature Conservancy, Santa Rosa Plateau Ecological Reserve, Murrieta, CA.

Effects of spring and fall burns on composition of valley needlegrass grassland were evaluated on three sites. Fall and spring burning regimes increased the number of native bunchgrasses. Spring fires have the greatest impact on Mediterranean annual grasses, reducing *Bromus mollis* 43% and *Bromus diandrus* by as much as 79% in the first post-fire season. *Avena barbata* seems to respond favorably to single spring and fall burns. *Erodium cicutarium* appears to remain stable under prescribed fire management.

Harmful Non-Indigenous Species From a Federal Perspective: An Office of Technology Assessment Report to Congress by Phyllis N. Windle, Congress of the United States, Office of Technology Assessment, Washington, DC.

Harmful non-indigenous species (NIS) create a significant and increasing economic burden for the United States. pest plants comprise approximately 45% of the country's estimated 4,500 species of foreign origin. General agreement exists that the nation has no strict and comprehensive policy on the introduction and management of harmful NIS. All but three of 21 Federal agencies that introduce,

regulate, control, or research NIS have some responsibilities for plants. Eight areas need to be addressed if problems are not to worsen, each with the goal of making U.S. policy more stringent. Among these are: the growing problem of non-indigenous weeds; the sizable damage occurring to natural areas, especially National Parks; ensuring prompt action against newly detected species; and using environmental better education to prevent problems.

The Distribution and Impacts of Escaped Exotic *Ageratina adenophora* in California: A Preliminary Assessment by Tony Bomkamp, Glen Lukos Associates, Laguna Hills, CA.

Eupatory (*Ageratina adenophora*) is a federally listed noxious weed which has become well established in coastal canyons from San Diego to Marin County, and in the San Gabriel Mountains. The invasive character of Eupatory has apparently gone unnoticed by the botanical community throughout the state. CNPS has not included it on any lists which catalogue invasive plants in the state and CalEPPC included it this year only after it had been brought to their attention. Eupatory poses a threat to high quality riparian habitats, most of which are located in areas considered to be de facto biodiversity preserves. These include the Los Padres and Angeles National Forests, the Ventana National Wilderness Area, the Santa Monica Mountains National Recreation Area, and Julia Pfeiffer Burns State Park. The aim of this report is to alert both the botanical community (particularly those involved in the control of invasive exotics) and the responsible agencies concerning the threat posed by Eupatory.

Overheard at CalEPPC Symposium '93

"Wow! What an exhilarating two days with the movers and shakers in the exotic pest plant control world!"

"I learned more useful information at the conference in two days than I learned all last year."

"The speakers were terrific, and the contacts that I made between sessions were the most useful to me."

"When I see slides of really bad weed infestations, the infestations in my area look more manageable."

Call for Slides and Statistics

We are seeking to document the spread of exotic pest plants in California through the use of slides and data. These materials will be incorporated into presentations given by CalEPPC members to schools, conservation groups, legislators and other interested parties. For slides, close-up and full shots of pest plants are needed, as well as before and after eradication shots. The before and after shots can be especially persuasive in documenting the ability of some exotics to dominate a landscape. Statistics or data which document the threat and spread of exotics, costs of exotic invasions (such as excessive water transpiration by tamarisk) are needed.

Please include a few sentences with your slides and/or statistics regarding the location, the threat to natural areas (national forests, wilderness areas, state parks, etc.), time period of infestation, and any other relevant information which will aid in the assembly of these materials into presentations.

Finally, the incorporation of these materials into various slide shows, information sheets, or other media will be of no use without someone to disseminate the information. **This is a call not just for slides and statistics, but also a call for speakers.** We need individuals throughout the state who are willing to speak to groups. Without volunteers, the compilation of slides and statistics into programs will be a meaningless exercise. If you are interested in using these materials for presentations or if you have materials (slides and/or statistics) please contact: (For slides) **Tony Bomkamp, 1296 Flower Street, Anaheim, CA 92805, 714.545.4120.** (For statistics) **Beth Collins, Pacific Institute, 1204 Preservation Park Way, Oakland, CA 94612, 510.251.1600.**

Dr. David Bayer, who spoke on herbicide physiology at the October symposium, plans to write a manual on ***"What You Should Know About Herbicides Before Using Them."*** The intended audience is folks like us; volunteers and managers of natural areas and wildlands. CalEPPC president, John M. Randall, will assist Dr. Bayer with this project. If you want to discuss the project, or offer suggestions on topics you feel this manual should address, please write to John at: **Section of Plant Biology, Robbins Hall, University of California, Davis, CA 95616 or call 916.684.6821.**

Announcements: Hot off the press!!

Harmful Non-Indigenous Species in the United States Summary Report, U. S. Congress Office of Technology Assessment Publication. The conclusions of this study found that a large number of non-indigenous species (NIS) cause significant economic, environmental, and health damage. Those harmful species were the focus of this study. The study found that the total number of harmful NIS and their cumulative impacts are creating a growing burden for the country. Perfect screening, detection, and control are technically impossible and will remain so for the foreseeable future. The Federal and State policies designed to protect us from the worst species are not safeguarding our national interests in these important areas. These conclusions have a number of policy implications. First, the Nation has no real national policy on harmful introductions; the current system is piecemeal, lacking adequate rigor and comprehensiveness. Second, many Federal and State statutes, regulations, and programs are not keeping pace with new and spreading non-indigenous pests. Third, better environmental education and greater accountability for actions that cause harm could prevent some problems. Finally, faster response and more adequate funding could limit the impact of those that slip through. To order this report please call 202.224.8996 for price information.

BIOLOGICAL POLLUTION: The Control and Impact of Invasive Exotic Species, Bill N. McKnight Editor. The magnitude of the problem of natural habitat loss and the introduction of invasive exotic animal and plant species causing environmental chaos prompted the Indiana Academy of Science (IAS) to organize a symposium in Indianapolis in 1991. This publication features 21 of the presentations given at that meeting. The articles deal with both aquatic and terrestrial systems, with specific focus on causes, case studies, control measures, management practices, ecologic and economic consequences, and policy. The cost is \$24 for members, \$30 for non-members of IAS plus \$2.50 postage and handling. To order and/or get information, contact Bill N. McKnight, IAS Publications, 1102 North Butler Avenue, Indianapolis, IN 46219 or telephone 317.352.1970.

Kudzu may finally be put to good use!

Taken from the November 1, 1993 edition of the San Francisco Chronicle.

Kudzu, an imported nuisance weed that often chokes trees in southern forests, may contain extracts that conquer the craving for alcohol, a study shows. Researchers at Harvard Medical School, intrigued by the ancient Chinese use of the kudzu roots to treat alcoholism, tested compounds from the plant on hamsters. Dr. Bert Vallee of the Harvard Medical School said the kudzu extract "has been used widely in China and Japan for centuries to treat alcoholism. you can buy the stuff in pill form over the counter in Japan and China."

Vallee and his colleague, Wing Ming Keung, collected information about the use of kudzu from doctors in Asia. In a study to be published today (November 1, 1993) in the Proceedings of the National Academy of Sciences, Vallee and Keung report that the golden hamster can develop an alcohol consumption rate that, if scaled up to human size, would be about 40 times greater than the capacity of the typical human. He said the kudzu drugs did not affect the hamster's appetite for food and seemed to produce no toxicity.

Vallee said the researchers identified the active ingredient in kudzu as a compound called daidzin. This was synthesized and then injected in 71 of the hamsters. "The effect was that it reduced the alcohol intake by more than 50 percent," said Vallee.

Kudzu compounds were tested against approved drugs now commonly used to blunt the appetite for drink in human alcoholics. Vallee said the kudzu products worked better. The Harvard researchers are now testing the kudzu compound for toxicity in other animals. Vallee said he hopes that the drug will be ready for clinical testing in humans within a year.

Finding a drug that suppresses the craving for alcohol and, thus, assists in the treatment of alcoholism has been the goal of many researchers.

Kudzu is an Asian vine that grows extremely fast. It was imported into the United States early in this century for possible use as livestock fodder.



CalEPPC Welcomes New Members

Our membership is growing! CalEPPC warmly welcomes the following people and organizations who have joined during September, October, November and December 1993.

John H. Anderson
R. Mitchel Beauchamp
Alfred Cavanaugh
Alex Chinh
Beth Collins
Colleen Culver
James DeKloe
Michael P. Dolan
Allan F. Fone
Linda Fries

Pete Holloran
Catherine S. Linden
Micki Miller
Reneene Mowry
Thomas W. Mulroy
Michael Pitcairn
David Schneider
Bryan X. Thompson
Peter Vitousek
John A. Walters
Bert Wilson

1994 CalEPPC Election Results

President
Vice-president
Treasurer
Secretary

John Randall
Carla Bossard
Mike Pitcairn
Mike Kelly

One year term at-large board members:

Greg Archbald
Ann Howald
Sally Davis

Two year term at-large board members:

Jeff Lovich
Nelroy Jackson
Dave Chipping

Join CalEPPC Today!

If you would like to join CalEPPC, please remit your dues using the form provided. All members will receive the CalEPPC Newsletter, be eligible to join CalEPPC working groups, be invited to the annual meeting, and participate in selecting future board members. Your personal involvement and financial support are the key to success. Additional contributions by present members are welcomed!

Name _____

Organization _____

Address _____

City, State, Zip _____

Office Phone _____

Home Phone _____

FAX _____

1994 Calendar Year Dues

Membership Categories

	INDIVIDUAL	INSTITUTIONAL
<input type="checkbox"/> Student	\$15	
<input type="checkbox"/> Regular	\$25	\$100
<input type="checkbox"/> Contributing	\$50	\$250
<input type="checkbox"/> Sustaining	\$250	\$1,000
<input type="checkbox"/> Lifetime	\$1,000	

Other Gift \$ _____

Please make check payable to: California Exotic Pest Plant Council or CalEPPC. Mail your form and check to:

CalEPPC Membership
c/o Sally Davis
448 Bello Street
Pismo Beach, CA 93449

Pending official incorporation of the California Exotic Pest Plant Council, newsletter mailings will be handled by Friends of Los Peñasquitos Canyon Preserve, Inc. a California not-for-profit corporation.

Upcoming Meetings

- **January 17 - 19 1994 San Jose, California**

The California Weed Conference (annual meeting of the California Weed Science Society) at the Red Lion Hotel in San Jose. Contact Wanda Graves at 510.790.1252 for more information.

- **March 22 - 24 1994 Houston, Texas**

The 1994 Wildlands Conference, sponsored by The Wildlife Habitat Enhancement Council, co-sponsored by SER, will meet March 22 - 24, 1994 in Houston, Texas. Contact Bronwyn Weaver, WHEC's Wildlands Conference, 736 Company Farm Road, Aspers, PA 17304, 717.528.7062, FAX 717.528.7544.

- **June 7 - 10 1994 Fort Collins, Colorado**

The fifth International Symposium on Society and Resource Management. Contact Michael J. Manfredo, Human Dimensions in Natural Resources Unit, State University, Fort Collins, CO 80523.

- **June 1994 Lake Tahoe, California**

The annual SERCAL conference will be held in the Lake Tahoe region. Contact Richard Buckberg 415.332.6972 or Gail Newton 916.323.8564 for assistance in the conference planning.

- **July 27 - 28 1994, Fort Bragg, California**

The Weed Committee of the California Forest Pest Council will hold a field meeting in July. The meeting will focus on pest plants in forest settings. Contact Sally Davis, 805.773.2828 for information.

- **August 9 - 14 1994, Lansing, Michigan**

SER 1994 Conference *Saving All the Pieces* will be held at Lansing Community College. For more information contact Robert Welch, 517.483.9675, FAX 517.483.9619.

- **September 30 - October 1, 1994 Sacramento Area**

CalEPPC Symposium '94 to be held in the greater Sacramento area. Details forthcoming in next issue.

- **October 17 - 22 1994 West Palm Beach, Florida**

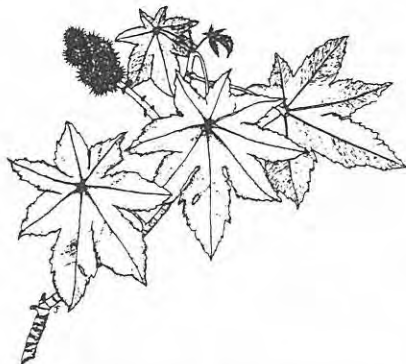
1994 Natural Areas Conference to be held at the Palm Beach Gardens Marriott. The 21st annual conference will be hosted by the South Florida Water Management District. For information regarding planning of this meeting contact Bill Helfferich at 407.687.6637. For information contact either Eric Menges 813.465.2571 or Mike Duever, 813.657.2531.

CalEPPC News

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