CalEPPC NEWS

NEWSLETTER OF THE CALIFORNIA EXOTIC PEST PLANT COUNCIL

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INSIDE

Who We Are

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;
- facilitate communication and the exchange of information regarding all aspects of exotic pest plant control and management;
- provide a forum where all interested parties may participate in meetings and share in the benefits from the information generated by this council;
- promote public understanding regarding exotic pest plants and their control;
- serve as an advisory council regarding funding, research, management and control of exotic pest plants;
- facilitate action campaigns to monitor and control exotic pest plants in California; and
- review incipient and potential pest plant management problems and activities and provide relevant information to interested parties.

Newsletter Submissions

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 ***CalEPPC NEWS*** 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, or ASCII text files. Please enclose a letter quality hard copy with your disk. Copy for the Winter 1995 issue is due with the editor by January 31, 1995.

Publication on Exotics

California Plant Pest & Disease Report (Agricultural Pests or Potential)

Write: Editor, CPPDR, State of California Dept. of Food & Agriculture, Analysis & Identification Branch, 1220 N Street, Room 340, Sacramento, CA 94271-0001.

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President's Message

Change II

John Randall, president

All the talk about change in the news lately started me thinking about how change concerns CalEPPC. It occurred to me that **change** is at the heart of our being. We organized the council to effect and motivate **changes** that will counter and slow the harmful impacts of **changes** wrought by non-native pest plants. As I noted in my last message, biological invasions constitute "global environmental **changes**" which have had greater impacts on the world's biota than stratospheric ozone depletion or increases in atmospheric CO_2. It should also be clear that our aim is to address threats posed by invasive plants so that native species and communities have the opportunity to thrive and evolve - to **change** - over time. It is not our goal to protect and create static communities or unchanging vignettes of pre-settlement conditions. To use another writer's metaphor, we wish to return to the trail from which we strayed in order to continue along it, not so that we can remain forever at a certain spot.

CalEPPC itself is undergoing important **changes** at this time. By the time you read this, Carla Bossard will be the CalEPPC President, Ann Howald will be Vice president, and Charlie Turner and David Boyd will have joined the Board of Directors. Other **changes** include our agreement to become involved in the formal organization of a national umbrella group for EPPCs, and new initiatives to work with other groups, including the state's nursery operators, to prevent the spread of pest plants. You are invited to help with any of these efforts. We especially need input from individuals interested in federal policymaking because the national umbrella group we help to create will focus on federal weed control and bio-control programs.

Because my term as CalEPPC President is at an end, I thought back also on the past few years and on how the group has **changed** since it formed. Our gatherings have increased from the 30 participants at an exploratory meeting in February 1992, to 150 registrants at our first Symposium in October of that year, to over 250 at this year's Symposium in Sacramento. Our membership has grown to over 300, so that we are now more than two times larger than the original EPPC which formed in Florida in 1984, and graciously helped us get established eight years later.

We have initiated many projects, most of which have been described in this newsletter, to improve control methods, direct attention to threats non-native pest plants pose to the state's wildlands, and prevent further spread of pests. With each success we have become more ambitious and more widely recognized. With this recognition has come greater influence and respect for our concerns from nursery and landscape groups, professional weed science societies, and state and federal agencies. We have also helped EPPCs form in the Northwest and in Tennessee, just as the Florida group assisted us. There are also signs that more EPPCs may soon form in other states. Just last month I was delighted to learn that Pat Toops, who helped organize our first Symposium before moving to the east coast, has been helping with similar efforts in Maryland and Virginia. All in all, an encouraging record and an indication that we may be able to grow and do even more in the years ahead.

So, in a nutshell, while we have, and continue to undergo **changes**, we seek to affect **changes** that address the **changes** wrought by plant invasions, so that native species and communities can continue to **change** as they have for millions of years. But in the midst of all this change, there is also some reassuring stability. Nine of our 11 board members will be returning in 1995 (I'll be back as, SURPRISE !, Past-president). Even the two board members who are leaving will continue to be active, just as other members of the original Steering Committee and interim board have done. While this group has been fairly stable, there is still much room for new participants, and we hope to have some new members on the board each year.

As noted above, we also need help in forming our position on federal policies, and there is much to do in other working groups. CalEPPC can also serve as an excellent platform for you to start your own working group to tackle a task you feel has not been appropriately addressed. In fact, the item most likely to remain stable in CalEPPC for years to come is our ability to use and benefit from more help in addressing California's wildland pest plant problems.

CalEPPC Symposium '94 Presentation Abstracts

Biological Pest Control - Words of Caution

Peter McEvoy, Professor, Oregon State University

Before introducing a biological control agent to control a pest, it is necessary to weigh benefits and costs in both environmental and economic terms. Even where benefits appear to outweigh costs, a decision to introduce a control agent may not be easy because (1) high costs make an introduction unacceptable or unfeasible, (2) costs and benefits that are unevenly distributed socially, generally raise questions about fairness, and (3) excessive uncertainty or questionable valuation may undercut the analysis. Review steps that might be taken to set minimum safe standards for biological control, to resolve conflicting interests, and to more accurately portray, and perhaps reduce the uncertainty in outcomes.

Planning for Weed Control in a Large Area - Greater Yellowstone Area

Barbra Mullin, Weed Coordinator, Montana Department of Agriculture

In precedent-setting action, weed control planning has been completed and a memorandum of understanding (MOU) signed for the Greater Yellowstone Area encompassing two national parks and seven national forests. Subjects covered include public awareness, prevention, inventory, mapping, monitoring, and reporting. "*Guidelines for Coordinated Management of Noxious Weeds in the Greater Yellowstone Area*" have been established after extensive discussions and negotiations.

Planning for Weed Control at the Preserve Level

John Randall, Weed Specialist, The Nature Conservancy, National Exotic Species Program

A comprehensive weed control plan can help make the control program at a natural area more efficient and successful. The plan should first state what is being managed for. This allows pest species to be prioritized by the threat(s) they pose to valued species or communities and allows all control options to be judged on the basis of whether they will help move the area toward the desired condition or not.

High priority should be given to keeping species that have not yet become established on the preserve from doing so, and to eliminating or containing infestations that have established recently and just begun to expand; major problems are best avoided by nipping them in the bud. Likewise, keeping areas that are largely intact weed-free may take precedence over eliminating pests from badly infested areas. Estimates of the amount of labor and other resources that will be required to control each species or infestation targeted for 1, 2, and up to 5 years can then be listed. This often results in an unpleasant shock, but it helps managers plan ahead to dedicate the labor and money necessary to carry out the plan successfully.

Specific control plans for the targeted species or infestations should also set measurable objectives. Progress towards these objectives (and the success of the plan) should be analyzed at least annually so that necessary modifications or amendments to the plan can be made. The plan should also include protocols for mixing and the application and storage of herbicides and/or other potentially hazardous weed control materials or methods whose use is planned.

Report from Down Under - Weed Control Efforts for Australia's Bushlands

Judith Rawling, Managing Director, Urban Bushland Management, Inc., Sydney, Australia

The City of Sydney, partly because of its topography, is unique amongst cities of comparable size in having very large areas of natural vegetation within its boundaries. The juxtaposition of these areas with old and new urban development has led to the classic problems of invasion by exotic species and the degradation of highly specialized and vulnerable plant communities.

From the 1960s on, small-scale popular movements have emphasized the values of indigenous vegetation and have led to the growth of the "bush regeneration" industry. Gradually, both state and local authorities have taken on responsibility for bush regeneration, restoration, and revegetation projects. At the state level, Noxious Plant legislation now recognizes environmental as well as agricultural weeds, the latter being the traditional focus. A variety of strategies has been employed to combat environmental weeds, and there has been an accompanying debate about the values and philosophies underlying this, which would be familiar to Americans.

The bush regeneration industry, which revolves around a trained and highly professional workforce, is particularly active on Australia's east coast, where both paid and volunteer workers strive to conserve and restore habitats as diverse as coastal dunes, wetlands, rainforests, riparian communities, grasslands, woodlands, and old-growth forests.

Effects of Exotic Plants on Three California Ecosystems

Richard A. Minnich, Associate Professor, Dept. of Earth Sciences, UC Riverside

Since early European settlement, the California floristic province has been overrun by several waves of exotic grasses and forbs, mostly from the Mediterranean basin and Middle East. In the 18th century, Franciscan missionaries brought the first exotics to spread extensively in California (*Erodium cicutarium, Avena fatua, Brassica nigra, Hordeum leporinum, Lolium multiflorum*). A second wave of herbs to invade the state were introduced in the late 19th century (*Bromus rubens, B. tectorum, B. mollis, B. diandrus, Avena barbata* and *Brassica geniculata*). Still other widespread annuals have arrived very recently (*Schismus barbatus* 1950s; *Brassica tournefortii*, 1970s, 1980s).

In semiarid portions of California, Franciscan exotics were concentrated in bottomland habitats, while many dominant "second" and "third wave" exotics have naturalized in drier, more well-drained hill slope habitats beyond the range of Franciscan exotics. Because Franciscan exotics naturalized before the arrival of scientifically trained observers, it is uncertain what kind of native herbaceous vegetation was displaced by them, nor the mechanisms of displacement. As a consequence, the current naturalization of "second" and "third wave" exotics outside bottomland habitats presents an opportunity for research on the processes by which herbaceous and shrubland ecosystems are displaced or modified by exotics. Three recently impacted plant communities in Southern California are forb fields, coastal sage scrub, and creosote bush scrub.

Forb Fields

Although Stipa grasslands are believed to have occurred extensively across the coastal plains and inland valleys of California in pre-European times, 19th century accounts in semiarid coastal regions (southern San Joaquin Valley, inland valleys of Southern California, coastal northern Baja California) describe extensive fields of wildflowers. Hence, in these areas Franciscan exotics may have displaced forb fields rather than perennial bunch grasslands.

In the Box Springs Mountains of Riverside, California, a mix of exotic grasslands and remnants of forb fields in open coastal sage scrub was intensively sampled in permanent plots for 7 years. The study examined stem density, biomass, and species composition of native and exotic herbs in relation to climate and fire. The fire season results in divergent successional outcomes. A March burn resulted in the establishment of dense cover of *Phacelia distans, Cryptantha intermedia,* and *Emmenanthe penduliflora*, mixed with *Camissonia californica, Chaenactis glabriuscula, Eschscholzia californica, Salvia columbariae*, and *Senecio californicus*. The density of exotic species was scare compared to off-burn plots dominated by *Bromus rubens, Avena barbata, Erodium cicutarium* and *Schismus barbatus*. It appears that the March burn facilitated a proliferation of the native dicot annuals with long seed dormancy from a seed cache without competition from exotics. The recolonization of exotic annuals, growing abundantly along a burn perimeter only 100 m away, required six years due to unexpectedly slow rates of seed dispersal. A burn in July was immediately colonized by *Erodium cicutarium* and *Schismus barbatus*, with a sharp decline in the density of *Bromus rubens*. Succession was characterized by persistence of *Erodium cicutarium* and *Schismus barbatus*, and a gradual increase in *Bromus rubens, Avena barbata*, and *Brassica geniculata*. Native herbs were rare throughout the successional sequence. Differences in outcomes are primarily related to exotic seed mortality related to season fire. Apparently, early season burns in cured annual cover, but before seed shatter of grasses, result in almost complete sterilization of the exotic seed bank, reducing recruitment of these annuals. Native taxa survive summer burns through limited recruitment and seed dormancy.

Annual productivity was suppressed only in severe drought. Biomass was high both in wet years or normal years with well-spaced storms. Early drying in spring germinated annuals to terminal inflorescence (and reduce standing biomass), even after wet years. The timing of rainfall selectively effects exotic/native interactions. California grassland exotics exhibit earlier phenology than native herbs, establishing rapidly after the first autumn rains, with moderate growth even during cool temperatures of midwinter. Native forbs also germinate with the first rains, but display only limited growth during winter. They flush only by late spring, long after exotic species had formed dense cover. Differences in exotic and native herb phenology may be related to selective pressures caused by the earlier onset of the rainy season in the Mediterranean basin (late September, October) than in California (November, December). At Two Trees, native annuals were selectively favored over exotics in years with late spring precipitation, mid-winter drought, or protracted drought. These trends either discourage or postpone germination of exotics until spring, or cause germinating exotic stems to perish before reaching flower during midwinter dry spells. Under open cover of aliens, native wildflowers germinate, survive drought with minimal mortality, reach flower and produce seed despite adverse conditions.

Effects on Three California Ecosystems (Cont'd)

Coastal Sage Scrub

Early accounts of vegetation reveal that Franciscan exotics grew in valley bottoms distant from coastal sage scrub on the foothills. Coastal sage scrub is only now undergoing rapid directional changes in cover and species composition due to the invasion of post-1890 exotics. Replication of 80 1929-34 California Vegetation Type Map Survey (VTM) field quadrats in the Riverside/Perris Plain reveal significant stand-thinning over the past 60 years. *Encelia farinosa* cover was stable, but the cover of *Eriogonum fasiculatum, Salvia apiana, S. mellifera*, and *Artemisia californica* decreased to half the levels recorded in 1929-34. *Salvia apiana* and *S. mellifera* have become locally extinct in many areas. Nearly all stand-thinning plots had a dense, continuous layer of exotic annuals dominated by either *Bromus diandrus* or *Bromus rubens*. Mature coastal sage scrub persists only on steep, rocky slopes too porous for the establishment of annuals, or on ultrabasic gabbro basalts having apparent soil toxicity to exotics.

The factors responsible for the decline of coastal sage scrub include competitive exclusion, fire, and grazing. Dense grasslands may selectively alter nutrient and moisture regimes against shrub species. Exotic herbs may uptake moisture necessary for the establishment, growth, and persistence of coastal sage species. Soil openings for the establishment of shrubs are almost entirely lacking.

The decline of coastal sage scrub is also encouraged by the extreme flammability of European annuals which provoke shorter fire intervals. Most taxa in coastal sage scrub have high fire mortality rates from canopy burns, but produce abundant seed that disperse widely. Seedlings establish from a pre-burn seed cache or germinate from seed dispersed by wind. Resprouting species flower vigorously the first few post-burn years, providing nonrefractory seeds that germinate in subsequent years, leading to mixed-aged stands. Recruitment and growth to maturity is extremely rapid (ca. 10-20 yr.). At present, fires carried by flashy exotic grasses at intervals <10 years appears to be selectively eliminating coastal sage scrub through a combination of high shrub mortality and interference of shrub recruitment by exotic cover. Furthermore, VTM quadrat replications show that stand-thinning had occurred at plots without any fire the past 40 years. Hence, while fire may facilitate coastal sage scrub-to-grass conversion, the deterioration of coastal sage scrub may be more fundamentally related to competitive exclusion processes.

A few thinned stands were subject to intense sheep grazing. Grasses were browsed to the ground, and shrub seedlings eliminated by animals. Grasslands persist from an annual seed cache which germinates each spring. However, the heaviest grazing in the region occurred in the late 19th century before the naturalization of "second wave" exotics such as *Bromus spp.* In recent decades, most coastal sage scrub has declined under little or no grazing pressure from livestock.

Anthropogenic nitrogen deposition, which may alter the components of the microorganisms and encourage displacement of native forbs by nitrogen-demanding exotics, may be another potential cause for the decline of coastal sage scrub, but this factor has not been investigated.

Creosote Bush Scrub

The outbreak of fires in creosote bush scrub in the Mojave and Colorado Deserts of California between 1978-1985 have been attributed to the combined effects of above-normal precipitation and spread of exotics *Bromus rubens* and *Brassica tournefortii* which have increased available fuel and fuel continuity. Native dicots, as well as the exotic *Erodium cicutarium*, provide only limited fuels because they are either scarce, or cured stems shatter into fine parts which fall to the ground and blow away. Since fire is being provoked by newly introduced species, exotic invasions may encourage directional changes in fire regime and species composition in this ecosystem.

Desert shrubs appear to have a low tolerance to burning, and adaptations to fire in this vegetation have not been strongly developed. Fires typically scorch and denude above-ground shrub cover. Post-fire succession studies show that long-lived, poorly competitive species with low reproductive capacities (*Larrea tridentata, Ambrosia dumosa, Opuntia acanthocarpa*, and *Yucca brevifolia*) are replaced by highly competitive, short-lived species with high reproductive capacities (*Encelia farinosa, E. actoni, Hymenoclea salsola, Salazaria mexicana, Eriogonum fasiculatum*, and *Salvia dorrii*). These colonists typically grow along washes, sandy sites, and steep slopes subject to recurrent fluvial and aeolian disturbances. Other shrubs persist by resprouting (*Lycium andersonii, Lycium cooperi, Acacia greggii, Justicia californica, Hyptis emoryi, Ephedra nevadensis*, and *Yucca schidigera*) or develop stems from rhyzomes (*Hilaria rigida*). Microphyllous woodland species [*Olneya tesota, Cercidium floridum, Prosopis glandulosa (juliflora),* and *Dalea spinosa*] are all strong resprouters, possibly a generalized adaptation to flash flood disturbances.

An indefinite continuation of recent burning rates may result in significant species changes of creosote bush scrub due to selective elimination of dominant taxa with long generation times, such as *Larrea tridentata* and *Opuntia spp.* Creosote bush scrub adjacent to the southern California coastal ranges in the southwestern Mojave Desert and western Sonoran Desert should be most effected because of high mean annual precipitation, plant productivity, and fuel accumulation rates in these areas.

Diet Selection and Nutritional Ecology of the Desert Tortoise Fed Native vs. Exotic Vegetation: Implications for Habitat Restoration and Land Management.

Harold W. Avery, National Biological Survey, Riverside, CA

Among the most limiting resources associated with animal populations inhabiting desert ecosystems are water and food. Studies on diet preference, digestive physiology, and nutritional ecology of the federally threatened desert tortoise (*Gopherus agassizii*) are essential for determining nutritional constraints associated with growth, survivorship, and reproduction in declining populations. Such studies are also consequential for developing effective restoration, revegetation, and land management policies that can enhance recovery of declining tortoise populations.

Over the last century, major changes in species composition and biodiversity of plants have occurred within the geographic range of the desert tortoise. From a nutritional standpoint, the herbivorous tortoise is potentially sensitive to changes in plant communities. In the western Mojave Desert of California, significant influxes of exotic annual plants have occurred concomitantly with recent declines of tortoise populations. Studies indicate that proliferation of exotic species is damaging to ecosystems because exotics out-compete native species and may cause increases in fire frequency, but few studies have addressed the effects of exotic plant proliferation on desert wildlife, and no studies have examined the nutritional impacts of exotic plant proliferation on tortoise populations.

I investigated the diet selection and digestive performance of desert tortoises fed native versus exotic annual vegetation, and compared the nutrient concentrations and digestibilities of native and exotic plants known to be consumed by free-living desert tortoises.

When given a choice of four forage plants (two native and two exotic species), captive tortoises preferred Schismus, an exotic annual grass, over two native species and an exotic forb. Rates of energy assimilation were not different between tortoises fed exotic, native, or a mix of native/exotic forage. However, tortoises fed native vegetation maintained a positive nitrogen balance, whereas those consuming exotic or mixed diet experienced zero or negative nitrogen balance. Furthermore, tortoises fed native or native/exotic diets maintained body mass, whereas tortoises fed exotic grass alone lost body mass.

Comprehensive nutrient assays of native and exotic vegetation and digestibility studies suggest that native plants are more nutritionally beneficial to tortoises than exotic plants examined. The fact that desert tortoises (particularly those with Upper Respiratory Tract Disease) may prefer low-quality vegetation over higher quality foods suggests that habitat restoration and revegetation must be considered as potential methods for enhancing recovery of tortoises within declining populations.

Understanding the Use of Post-Emergence Herbicides

David E. Bayer, Weed Science Program, UC Davis

A person desiring to use a herbicide should first decide whether they wish to effect a complete and permanent kill of the plant they consider undesirable, or whether they just wish to tip the competitive balance in favor of the more desirable species. Each application of herbicide should be a part of a larger, planned program. To indiscriminately remove a plant (even a weed) without a plan to establish or release a more desirable plant in its place will very likely culminate in a more serious situation than was present at the beginning. The plan should include a desirable species that is well adapted to the area so when the competitive edge is tipped by the use of the herbicide, the desirable plant will dominate. If the desired plant is less well adapted to the area than the weed, a competitive pressure, such as a herbicide, will have to be continually applied.

It is important to know whether the weed you wish to control is an annual, biennial, or perennial. In warm and moderate climates, many annuals live for more than one season and may even be mistaken for a perennial by rooting at stem nodes when allowed to contact the soil. Control by herbicides should be aimed at the seedling or very early juvenile growth stage. As annuals begin to mature, they become more difficult to control, requiring more herbicide. Biennial plants complete their life cycle in two years, and under ideal environments, they may live to be short-lived perennials. The first year the plants form rosettes. Control has been most effective and economical when plants are sprayed as seedlings or young rosettes, and less effective when sprayed after the flower stalk has started to elongate, a stage referred to as bolting.

Perennial plants live for more than two years, and are frequently grouped into simple perennials that reproduce only by seed, and creeping perennials that not only reproduce by seed but by vegetative means, such as bulbs, corms, tubers, rhizomes, stolons, and creeping roots. Control of established perennial weeds with herbicides requires knowledge of the biology of the plant. Application of a phloem mobile post-emergence herbicide must be timed to coincide with the movement of carbohydrates from the foliage to the storage organs.

Understanding the Use of Post-Emergence Herbicides (Cont'd)

This would be in the later part of the vegetative phase and early reproductive phase, and would correspond to the period following rapid stem and leaf development. The vegetative reproductive organs of perennial weeds often have apical dominance and bud dormancy that makes it nearly impossible to obtain 100% control with a single application of any post-emergence herbicide. The potential for properly timed repeat applications should always be part of any control program.

The phytotoxicity of a herbicide depends on the plant, the herbicide, and the environment. Three general rules describe the response of plants to herbicides. Rule 1: susceptibility decreases with age and maturity; Rule 2: rapidly growing plants under little or no stress are most susceptible; Rule 3: established perennials are best treated with phloem-mobile herbicides when carbohydrates are being translocated to the vegetative storage system. Water-soluble herbicides are absorbed more readily when the plant is not under moisture stress. If plants are under moisture stress, uptake is enhanced by more oil-soluble herbicides. Adjuvants or surfactants are often used with water-soluble herbicides to enhance uptake.

An Artichoke Thistle Success Story

Bill Tidwell, Supervisor, Orange County Public Works, Environmental Management Agency

Artichoke thistle (*Cynara cardunculus*) was first introduced into the U.S. by southern European immigrants who wanted it for their vegetable gardens. It escaped and spread over the hill pastures and fields of 31 California counties. Contra Costa, Solano, and Orange counties are currently infested with this thistle. Parts of San Diego County and the bay area also sport heavy infestations. Some land is so heavily infested that cattle grazing is no longer possible, and on one ranch over 60 employees work nine hours a day, six days a week to control it during its active growing season.

Artichoke thistle is well-suited to the California environment. Its deep root system, which can reach to a depth of eight feet, allows the plant to obtain water long after winter rains have passed. Inch-long spines protect the plant from cattle grazing.

In 1985 the Orange County Environmental Management Agency started a control program, under my direction, for the thistle in wilderness parklands using Roundup® herbicide. The three-year program was successful in eradicating artichoke thistle from hundreds of infested acres. Treatments were timed so that the native grasses had set seed but the thistle had not. Thus, not only was the thistle eradicated, but native grasses were promoted at the same time.

Certification for Herbicide Application

Joel Trumbo, Environmental Specialist, California Department of Fish and Game

Regulations enforced by the California Department of Pesticide Regulation (DPR) require that the application of restricted use pesticides be supervised by certified persons. Except in crop production settings, this certification is obtained by successfully completing a written examination offered by DPR. The DPR Qualified Applicator Certificate (QAC) examination includes a required section of pesticide laws and regulations. Additionally, each exam applicant must choose at least one examination section based on a specific pest control category. Examples of the 13 pest control categories include landscape maintenance, right-of-way, and aquatic pest control. The exam applicant must successfully complete the laws and regulations section, and at least one pest control category in order to obtain certification.

The California Department of Fish and Game (CDFG) uses herbicides to maintain wildlife areas, ecological reserves and fish hatcheries throughout the state. Herbicide use projects include general vegetation management, exotic vegetation control and eradication, and the reestablishment of native plant species. CDFG policy requires that all pesticide applications made on CDFG properties be supervised by a person who holds a valid QAC issued by DPR. The CDFG Pesticide Use Program, administered by the Pesticide Investigations Unit, provides QAC exam preparation classes, an annual Pesticide Applicators Seminar, and prepares CDFG QAC holders to provide pesticide safety training to non-certified applicators.

CONFERENCE ANNOUNCEMENT!

THISTLE MANAGEMENT IN CALIFORNIA

Thursday, February 16, 1995

7:30 a.m. to 5:00 p.m.

Atascadero Lake Pavilion

6315 Pismo Avenue, Atascadero, CA

$20.00 Pre-registration; $35.00 at the door.

Includes: Lunch and Proceedings/Manual

To request a registration pamphlet, send a legal size, self-addressed envelope to: Brenda Ouwerkerk, SLO County Department of Agriculture, P.O. Box 961, Paso Robles, CA 93447

The Perils of Paperwork:

The Regulatory "Must Do" List for Herbicide Applications

JOEL TRUMBO
Pesticide Use Coordinator, California Department of Fish and Game

Before you strap on your backpack sprayer, make certain you've complied with these important "paperwork" requirements.

One word of advice; Don't hesitate to contact your county agricultural commissioner regarding the specifics of what is presented below. The agricultural commissioner is, without question, your best information resource.

1) **Pesticide Use Recommendation** - With few exceptions, herbicide uses to control exotic species must be recommended by a licensed pest control adviser (PCA). This PCA must put his/her recommendations in writing.

2) **Operator Identification Number** - The herbicide user must obtain this number from the local county agricultural commissioner. The process is simple and there is no cost.

3) **Restricted Materials Permit** - If restricted herbicides will be used, you must obtain this permit from the local county agricultural commissioner. You cannot obtain this permit unless you possess a Qualified Applicator Certificate (see Item 4 below). Garlon®, Roundup® and Rodeo® are **NOT** restricted herbicides.

4) **Qualified Applicators Certificate** - The Qualified Applicators Certificate (QAC) is only necessary if you will be using restricted herbicides. However, many regulatory agencies that use herbicides require that ALL pesticide applications be supervised by an individual who is certified.

5) **Pesticide Safety Training** - All employees that use herbicides must receive annual training. With regards to volunteers, it is probably best to treat them as if they are employees. This training must satisfy the requirements of Section 6724 of the California Code of Regulations. Employers must have a written training program. Record of that training must be kept. Specific details regarding employee training can be obtained from the local county agricultural commissioner.

6) **Record of Pesticide Use** - Section 6624 of the California Code of Regulations requires that pesticide use records be maintained. Unfortunately, this required information is more specific than that required for Pesticide Use Reports (see Item 7, below).

7) **Pesticide Use Reports** - These reports must be submitted on a monthly basis to the local county agricultural commissioner. There is a required form that must be used (DPR 36-060). This form can be obtained from the county agricultural commissioner.

CalEPPC 1995 ELECTION RESULTS

Editor's Note: Although the CalEPPC 1995 Election was non-competitive, the By-laws do require a vote of the membership. The following officers were elected for the calendar year 1995. Board members are elected for alternate two year terms.

Officers:

President	Carla Bossard
Vice president	Ann Howald
Secretary	Mike Kelly
Treasurer	Mike Pitcairn
Past president	John Randall

Board Members:

Two year term: 1995-1996

Greg Archbald David Boyd Charles Turner

One year term: 1995

Sally Davis Nelroy Jackson Jeff Lovich

EXOTIC PEST PLANTS OF GREATEST ECOLOGICAL CONCERN IN CALIFORNIA
September 1994

CalEPPC's 1994 list of exotic pest plants of greatest ecological concern in California reflects information derived from our members and many other sources. This list focuses on exotic plants that are serious problems in wildlands (natural areas that support native ecosystems). Published here is List A-1; Most Invasive Wildland Pest Plants: Widespread. Send any comments, suggestions, or new information to Ann Howald, CDFG, P.O. Box 47, Yountville, CA 94599, or to Jake Sigg, 338 Ortega Street, San Francisco, CA 94122. The editor has a limited supply of the full listing which were distributed at CalEPPC Symposium '94. If interested please contact Sally Davis, P. O. Box 1045, Cambria, CA 93428.

MOST INVASIVE WILDLAND PEST PLANTS: WIDESPREAD		
Scientific Name	Common Name	Comments
Ammophila arenaria	European beach grass	Invades coastal dunes
Arundo donax	giant reed	Invades riparian areas
Bromus tectorum	cheat grass	Invades sagebrush, pinyon-juniper woodlands, desert shrub communities
Carpobrotus edulis	freeway iceplant	Invades dunes/coastal communities
Centaurea solstitialis	yellow star thistle	Invades grasslands
Cotoneaster (all species & hybrids)	cotoneaster	Invades coastal communities
Cortaderia jubata	jubatagrass, Andean pampasgrass	Invades coastal habitats, sandy sites
Cortaderia selloana	Pampas grass	Invades coastal dunes, coastal scrub, Monterey pine forest
Cynara cardunculus	artichoke thistle	Invades grasslands
Cytisus scoparius	Scotch broom	Invades coastal scrub, oak woodlands
Cytisus striatus	Portuguese broom	Often confused w/*S. scoparius*
Foeniculum vulgare	wild fennel, anise	Invades grasslands, esp. SoCal, Santa Cruz Island. Also on roadsides.
Eucalyptus globulus	Blue gum	Spreads in riparian areas, grasslands, dunes, moist slopes
Genista monspessulana	French broom	Invades coastal scrub, oak woodlands
Hedera helix	English ivy	Spreads in riparian areas, oak woodlands
Pennisetum setaceum	fountain grass	Invades grasslands, desert canyons. Also on roadsides
Rubus discolor	Himalayaberry, blackberry	Invades riparian areas, marshes, oak woodlands
Senecio mikanioides	German ivy	Invades coastal and riparian areas
Tamarix chinensis (and all other species except T. aphylla)	tamarisk, salt cedar	Invades desert washes, riparian areas
Ulex europaeus	gorse	Invades north and central coastal scrub

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CalEPPC is pleased to recognize contributions for 1994 of $100 or more from our private and corporate sponsors. Thank you for your generous sponsorship.

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Our membership continues to grow!
CalEPPC warmly welcomes the following people who joined in September and October:

Mary Aldrich
Tim Allen
Tracey Alsobrook
Maria Alvarez
Steve Arrison
Victoria Ausen
Jim Barry
Bill Becker
Carol Bell
Robert J. Berman
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Chris Bramham
Adolf L. Braun
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1995 Calendar Year Dues

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❑ Regular	$25	$100
❑ Contributing	$50	$250
❑ Sustaining	$250	$1,000
❑ Lifetime	$1,000	

❑ Other Gift $ _____

Please make check payable to: **CalEPPC.**

Mail your membership application form and check to:

CalEPPC Membership
c/o Sally Davis
P.O. Box 1045
Cambria, CA 93428

Join CalEPPC Today!

If you would like to join CalEPPC, please remit your dues using the form provided below. 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 _____

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CalEPPC NEWS
c/o Friends of Los Peñasquitos Canyon Preserve, Inc.
P.O. Box 26523
San Diego, CA 92196

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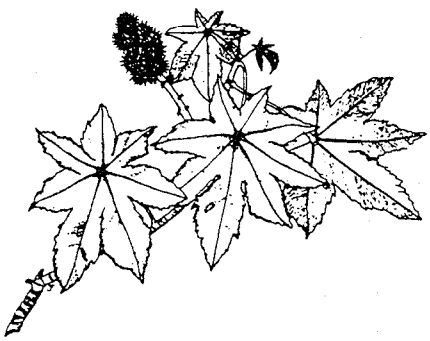

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