

CalEPPC News

A quarterly
publication
of the California
Exotic Pest Plant Council

Volume 9 • Number 2

Spring 2001

U.S. Fish & Wildlife Service

**"Help us fight
America's
least wanted."**



John Walsh



John Walsh, best known for tracking down "America's Most Wanted" fugitives has joined the U.S. Fish & Wildlife Service to ask your help in a new fight: against "America's Least Wanted" – invasive plants and animals that are threatening our waterways, our crops, and even our public safety.



Poster for U.S. Fish & Wildlife Service's invasives' outreach campaign, featuring John Walsh of *American's Most Wanted* TV fame. Walsh is also featured in Leif Joslyn's new video *Yellow Starthistle: Managing an Invasive Alien Species*. See p. for a review of this new educational video.

U.S. Geological Survey
& CalEPPC CoSponsor
Workshop on Ecology
and Management of
Invasive Plants in the
Deserts of
Southwestern North
America

CalEPPC 10th Annual
Symposium in San
Diego
Achievements & Chal-
lenges in Wildland
Weed Management

CalEPPC Election
Ballot. Please vote &
mail in.

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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.



Please Note:

The California Exotic Pest Plant Council is a California 501(c)3 non-profit, public benefit corporation organized to provide a focus for issues and concerns regarding exotic pest plants in California, and is recognized under federal and state tax laws as a qualified donee for tax deductible charitable contribution.

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Submission Dates for CalEPPC News

If you'd like to submit a news item, article, meeting announcement, or job opportunity for publication in the CalEPPC News, it must be received by the deadlines listed below. Editor reserves the right to edit all submissions. Send your text/disk/email to editor's address above.

Submission Dates:

Spring . . . May 15 Summer . . . July 15 Fall . . . October 15

The articles contained herein were contributed to the CalEPPC newsletter. These articles represent the opinions of the authors and do not necessarily reflect the views of CalEPPC. Although herbicide recommendations may have been reviewed in contributed articles, CalEPPC does not guarantee their accuracy with regard to efficiency, safety, or legality.

International Broom Initiative

A Comprehensive Broom and Gorse Biological Control Effort

The Problem

French broom, Scotch broom, Spanish broom, Portuguese broom, and gorse are all leguminous shrubs native to central and southern Europe that are impacting millions of acres in California and western North America. Infested forest lands result in higher regeneration costs, increased risk of wild-fire, and reductions in sight safety distance along access roads. Infested pastures and meadows result in reduced forage for livestock and wildlife due to the high levels of quinolizidine alkaloids in their leaves and stems. Dense stands of these leguminous shrubs prevent establishment of native and desirable plant species, especially after fires where their ability to fix nitrogen allows these exotic weeds to out compete and exclude native chaparral species.

The seed bank in the soil commonly ranges from 30,000 to 100,000 seeds per square meter and seeds remain viable for many years. Brooms present an increased fire hazard and thus are a serious threat to homes. Millions of dollars are spent annually in control costs against these invasive exotic weeds. These exotic legumes occur from British Columbia to southern California, generally occurring at elevations less than 3,500 ft (1,000 m). In California, infested areas occur in the Sierra Nevada foothills and the western side of the Coast Range. Over the last decade, they have extended their range and increased in density in established areas. Scotch broom is estimated to infest over 1 million acres in California alone; in Oregon, it now occurs in 20 counties. This same trend has been observed for the other brooms and gorse.

The Culprits

The genera to which these exotic brooms and gorse belong are closely related and weakly differentiated. Consequently, many species have been moved back and forth between genera several times. The current taxonomic designations are as follows:

Scotch broom (*Cytisus scoparius* L.)

Link CalEPPC: A-1, State list: noxious weed

Portuguese broom (*Cytisus striatus* Hill) Rothm. CalEPPC: A-2,

French broom (*Genista monspessulana* L.) L. Johnson CalEPPC: A-1, State list: noxious weed

Spanish broom (*Spartium junceum* L.) CalEPPC: B

Gorse (*Ulex europaea* L.) CalEPPC: A-1, State list: noxious weed

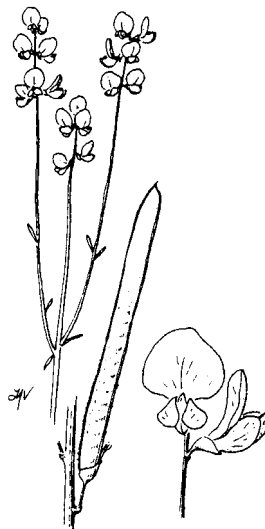
All are shrubs to 3 meters tall with green stems and yellow pea-like flowers. They were originally introduced as landscape ornamen-

tals, for erosion control, and natural barriers. Brooms have escaped cultivation and have aggressively invaded many natural areas. French broom and gorse are evergreen; the other brooms are deciduous. Unlike the brooms, gorse has long spines along its stems. All colonize open disturbed areas, such as logged or burned sites, roadsides, and pastures, and can invade undisturbed grasslands, coastal scrub, oak woodlands, and open forests. They do not tolerate heavy shade but can tolerate minimal shade along the edges of forest canopies. Most are drought-resistant.

Limitations of Current Control Methods

Established infestations are difficult to eliminate because large, long-lived seedbanks accumulate under the canopy. Removing plants by hand pulling, with machinery, or herbicide applications is very expensive. Prescribed burns can eliminate above ground growth, but do not prevent resprouting from the crown and may stimulate a flush of seed germination. Herbicides are not permitted in some areas heavily infested with brooms. Also, Scotch and French brooms can grow in physically challenging environments such as streamside thickets, willows, and poison oak. Given this sobering picture, and the high biological stakes, we need every feasible treatment method under the Integrated Pest Management (IPM) approach available to combat these species.

Development of safe and effective biological control programs against these invasive weeds has become an urgent priority. Success-



French broom (*Genista monspessulana*) Illus. from *Invasive Plants of California's Wildlands* (2000)

Continued on next page

ful biological control may give land managers an extremely cost-effective tool for controlling brooms and gorse with the added benefit of minimizing the use of herbicides in the environment. Biological control offers the best chance, within a framework of integrated pest management, to protect forest and riparian habitats from extensive degradation due to these invasive weeds.

Biological control has already been successful in controlling several exotic weeds in California, including Klamath weed, tansy ragwort, and puncturevine. The exotic brooms and gorse are not considered a problem in their native range, and one of the explanations for this is the number of insects and diseases that attack them in their native habitats. These insects and diseases reduce plant size and density and some may be suitable for use as biological control agents.

Why attack these brooms as a group?

Any natural enemy considered for introduction as a biological control agent must undergo a series of host specificity tests to ensure their safety; that is, that they do not attack any of our agricultural crop plants, ornamental plants, or our native plants. Typically, this testing takes at least 2 years to complete. Because these exotic brooms and gorse are closely related, the same group of test plants, both economic and native species, can be used to test any potential biological control agents. Of the native plants, lupines are the most closely related group and thus, the most susceptible to be attacked by natural enemies of these brooms and gorse. By growing all of the test plants in mass, the host specificity testing will be performed more efficiently and at lower cost.

A second reason to develop a program against the exotic legumes as a group is to prevent re-invasion by another noxious species follow-

ing successful control efforts. If one broom species is controlled, but other broom species fills the void, little will have been accomplished. Instead, all of the brooms need to be controlled together. In that way, one weed problem is not exchange for another.

Action Needed

Currently, there is an international cooperative research project among Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO), New Zealand's Landcare Research Ltd., and the Oregon Department of Agriculture to develop biological controls for Scotch broom. This cooperative project provides an excellent opportunity to expand efforts to other noxious legume species. Much of the basic biology and natural enemy attack in the native habitats of Europe and North Africa have been worked out for Scotch broom. It would be expedient to build upon this knowledge and include research efforts for the other broom

species and gorse. Current funding and in-kind contributions total \$166,800 (Table 1). Recent discussions with CSIRO's lead scientist for brooms, Dr. Andrew Sheppard from Australia's "Cooperative Research Centre for Weeds" (Weeds CRC), indicate that expansion of the Scotch broom research effort could be achieved by bringing the current part-time staff up to full time and adding a post-doctorate position to oversee the host specificity testing at the CSIRO biological control laboratory in southern France.

In addition to work performed overseas, there is important work to be done in California. This additional work includes field studies to determine the current distribution, phenology, and reproduction of brooms and gorse in the western United States, their current utilization by endemic and introduced insects, collection of seed of native plants for anticipated host specificity testing, and training on the damage and biology of the new biologi-

Table 1. Budget for current and expanded biological control research for noxious legumes by Australia, New Zealand, and the US International Broom Initiative.

Project Costs	Current	Proposed
Salaries		
Principal Research Scientist (Dr. Andrew Sheppard)		
Salary, overhead, and travel	108,500	108,500
Post Doctorate Position		
Salary, overhead, and travel	0	76,200
Senior Technical Officer	23,800 (50%)	47,700 (100%)
Technical Officer	8,700 (20%)	43,600 (100%)
Casual labor	0	10,000
Operating		
Laboratory and Greenhouse space	24,300	54,300
Travel	18,000	38,000
Total	183,300	378,300

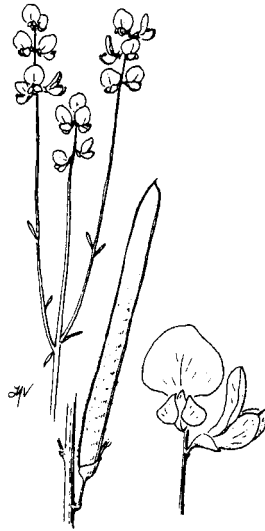
Difference between current and proposed = \$195,000 per year.

cal control agents to facilitate their release and establishment in the western United States. While an exact dollar amount cannot be assigned to this work, a conservative estimate of the value would be at least \$50,000 per year.

Proposed Work Plan

Our goal is to find \$245,000 (195,000 + 50,000) to \$265,000 (to account for inflation) per year for a ten year period for biological control of French broom, Scotch broom, Spanish broom, Portuguese broom, and gorse. Under this proposal, scientists with CSIRO and CABI Bioscience, two of the world's premier organizations for research in biological control of weeds, would carry out the work at CSIRO's research facility at Montpellier, France. Over the next four years, CSIRO staff would conduct continent-wide survey of targeted broom and gorse populations focusing on native habitats in southern France, northern Spain, Turkey, and North Africa where most of these species are found. Dr. Andrew Sheppard will continue to lead the foreign exploration effort. With funding from the Australian Weeds CRC, Dr. Sheppard has already found many promising natural enemies of Scotch broom and French broom. He will begin exploration for natural enemies of Spanish and Portuguese brooms. His experience with the natural enemies of Scotch and French brooms will facilitate the natural enemy exploration for these two new broom targets and will greatly increase chances of success. The surveys, while focusing primarily on arthropods, would also include identification and assessment of possible pathogens. Through these intensive surveys it is estimated that most or all of the natural enemies of the five noxious legumes would be identified in four years.

At the CSIRO facilities in Montpellier, France, potted broom and gorse plants will be grown under



Scotch broom (*Cytisus scoparius*)

Pictures from Invasive Plants of California's Wildlands (2000 UC Press)

glasshouse conditions and used to rear collected insects through adult life stages including oviposition (egg laying). This is essential to identify and curate the collected insects, a substantial portion of which are expected to be unknown to science or not previously identified to species. Species identification and biology, including library research, would be a key part of this effort.

Once a complete list of insects and pathogens is produced for a target species, a provisional prioritized list of biological control agents will be produced. These natural enemies will undergo host specificity testing at the CSIRO facility in Montpellier, France. There is great advantage to performing host specificity tests where native plant species closely related to the brooms and gorse can be inspected in the field and tested under non-quarantine conditions in the laboratory. If the candidate insects listed above do not oviposit or develop on closely related plant species, they will be considered suitable for further specificity testing, evaluation, and possible release in the United States. At this time, non-target host plants native to California will be tested in quarantine using no-choice feeding and oviposition tests to evaluate possible risk. If

a natural enemy shows high specificity to its target host and is considered safe for introduction, a petition for release summarizing the host specificity data will be submitted for approval by USDA-APHIS. Upon approval, the natural enemy will be collected by CSIRO staff and shipped to the USDA-ARS quarantine facility in Albany, California, for clean-up, inspection for parasites or diseases, and confirmation of species identification. When released from quarantine, the natural enemies will be released at identified field nursery sites for establishment.

Request for Support

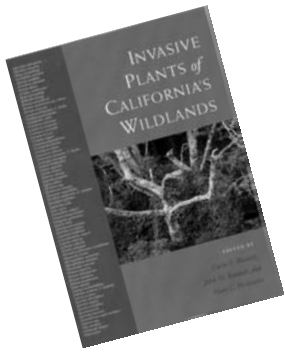
The International Broom Initiative could potentially provide one biological control agent per year once the first few years of prospection and agent selection have been completed, at a cost between \$195,000 and \$240,000 per year. This represents only a fraction of the cost already being spent to control brooms and gorse in California. A single depository would simplify the cooperative agreement and transfer of funds to CSIRO. The California Exotic Pest Plant Council (CalEPPC) has agreed to serve as a depository and accept donations from all interested parties and set up the necessary agreements with CSIRO. CalEPPC is a California not-for-profit organization and has the ability to receive grants and enter into contract agreements with other public agencies. Donations from individuals and private organizations would be entirely tax deductible.

Prospective contributors are requested to consider this proposal and work plan and become a partner in the International Broom Initiative by making a donation to CalEPPC for all or part of the balance needed to fund completely the first year of the project.

For Further Information

For any general inquiry regard-

Continued on next page



Special Offer Continued — \$5 Off

Invasive Plants of California's Wildlands

edited by: Carla C. Bossard, John M. Randall, & Marc C. Hoshovsky

360 pp., 7 x 10, 133 color photos, 76 line illust., 79 maps / Published by UC Press

Paperback. ISBN 0-520-22547-3 / **Common name index shipped with book**

----- Order Form (Please print) -----

Send order form to: **KW Publications, POB 26455, San Diego CA 92196.** Or call 858-566-6489 or Fax 858-271-1425 or email mkellysd@aol.com. Profits from each book sold go to CalEPPC. MC / Visa excepted Qty.

_____ *Invasive Plants of California's Wildlands* at \$24.95 each (\$29.95 less \$5 off = \$24.95).

_____ Sales tax for California residents: \$1.87 for each book.

_____ Shipping and handling, \$5.00 for first book, \$2.00 each additional book.

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(Broom Initiative cont'd)

ing the International Broom Initiative or the proposal described here, please contact:

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California Dept. of Forestry
and Fire Protection
802 N. Main Street
Fort Bragg, CA 95437
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walt_decker@fire.ca.gov

For details regarding CSIRO and the biological control research, please contact:

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California Department of Food
and Agriculture
Biological Control Program
3288 Meadowview Road
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(916) 262-2049 Office,
Fax (916) 262-2059
mpitcairn@cdfa.ca.gov

Sierra Club Tamarisk Bashing

Mike Kelly

Larry Klassen just can't help himself. Before arriving for a recent San Diego County Weed Management Area meeting near Lake Hodges, this Sierra Club leader just had to go down to the lake and warm up for the meeting by bashing a few saltcedar (*Tamarix ramosissima*). And, after the meeting, a rather large tamarisk outside the meeting hall seemed to be calling to him and soon it went down!

For four years now Larry has been organizing Sierra Club volunteers to go out to Anza-Borrego State Park in the desert to kill tamarisk in sensitive sites, especially Jacumba Jim Canyon, home to the Federally endangered Big-horn sheep, a species quite dependent on the often ephemeral water sources in the desert. Jacumba Jim Canyon, which

has one of the few year round creeks in this section of the desert.

Larry has seen first hand just how much water infestations of this exotic shrub use up. In an article in the Hi-Sierran newsletter of the San Diego Sierra Club (Sept. 2000), Larry reported:

"Last year we had a group of Sierra Club volunteers, the CCC [California Conservation Corps] and BLM [Bureau of Land Management] rangers. We cut some large trees and about 50 yards of small tamarisk bushes. The next morning when we went back into the canyon, we could see more water less than 16 hours later."

Despite taking some heat for using herbicide to treat the tamarisk, Larry continues to organize his bashes.

Cautionary Note for Land Mangers & Stewards

Viable Seed Production by Cape Ivy in California Finally Confirmed

Joe Balciunas

Tests of the seeds produced by Cape ivy (*Delairea odorata*) in California have generally shown that they are not viable – they generally will not germinate and produce a seedling. For instance, Carla Bossard [see *Invasive Plants of California Wildlands*] reports that none of the thousands of seeds, from 26 California populations, examined by her and her students, were viable. Young, Balciunas, and Clements [Proceedings, 2000 CalEPPC Symposium] likewise report that although Cape ivy seeds from South Africa and Hawaii germinated readily, those from California failed to germinate.

Nevertheless, new Cape ivy populations keep appearing at locations where it seems highly implausible that they generated from fragments of Cape ivy. Thus many weed warriors, e.g. Jake Sigg [*Fremontia* Oct. 1993] have insisted that Cape ivy in California must at least occasionally produce viable seed.

To help resolve this question, during last year's CalEPPC Symposium in Concord, I offered a one hundred dollar reward to the first person who could provide me with viable Cape ivy seeds from California. I recently paid this reward to Matthew Simone of Mill Valley. In February, Matthew was one of the volunteers at Ft. Cronkite, who was inspecting a recently cleared infestation of Cape ivy in the Marin Headlands for resprouts and overlooked plants. He noticed some tiny Cape ivy plants that appeared to be seedlings. He brought these to the attention of National Park Service Cape ivy team leader, Ellen Hamingson. She was aware of my reward offer, and phoned me about Matthew's discovery. A few days later, on February 15th, I met Ellen at Ft. Cronkite, and, accompanied by Mona Robison, inspected some of the seedlings,

both in pots and at the field site. By this time, the plants were several inches high, and had a half dozen true leaves. It was, therefore, difficult at that time to confirm that these small plants had grown from seeds, rather than plant fragments.

However, less than 50 yards from the site, we found some Cape ivy that had just finished flowering. We collected some of the most promising heads – with the receptacles mostly brown and senescent, but still closed and clasping the white "powder puffs" of pappus, the silky hairs to which the seeds, if any, would be attached. Back at my laboratory in Albany, my assistant Eve Lednicky, split the heads from this sample. As usual, the heads contained mostly shriveled seeds, but this time, there was an occasional large, plump seed. We planted several dozen of these promising, plump seeds in commercial potting mix. Within two weeks 11 seedlings had sprouted. The photo below shows one of



these seedlings after about month. It has put out its first true leaves, but beneath these, the dicotyledon leaves are still apparent. It unquestionably sprouted from a seed.

Mona Robison is currently in the process of testing the viability of Cape ivy seeds collected from dozens of different sites in California and Oregon. Until her results are known, it would be best that those persons who are trying to control Cape ivy, complete their control efforts before Cape ivy finishes flowering. This will re-

duce the chance of reinfestation from seed. In California, the flowering period of Cape ivy varies from site to site, and from season to season. However, the first flowers can appear as early as October, the peak flowering is usually in December and January, and the 1st flowers linger into March.

More about Italian Thistle

Jack Massera, Massera Farms

My family has several ranches in northern Monterey County, and I can remember hoeing and shoveling Italian thistle (*Carduus pycnocephalus*) in the 1950'. So Italian thistle as been around for a while, at least in Monterey County. In the 50s milk thistle (*Silybum marianum*) was the worst weed, and Italian was around, and we cut it when we had the time and energy. It didn't seem to be too bad in those days.

We moved to a new ranch in 1975 and it had no Italian thistle.



Italian thistle (*Carduus pycnocephalus*) Pictures from *Invasive Plants of California's Wildlands* (2000 UC Press)

Within a few years, however we had thistle and again not too much and we didn't treat it as too big a deal. At the new ranch however the thistle numbers exploded and got worse and worse. Today it is all along the roadsides and in all the neighboring properties. I spend a lot of time trying to control it. In the 1980s I noticed Italian thistle growing on Fort Ord. Since then it has increased considerably, not only on Fort Ord but on neighboring properties as well. I read in the *CalEPPC News* (Winter 2001) that Bruce Cowan is saying that it is ex-

panding down the coast towards Big Sur.

My take on Italian thistle is that in the early infestation stages it is not much of a problem. It hangs around and nobody spends too much effort on its control. At some point one begins to think, hey, this weed is getting out of hand. Perhaps it is already too late, especially if it is also growing in the neighbors fields, on roadsides, etc. My recommendation is that this is a bad weed and when you first see it kill it. Don't let it get away.

I start controlling Italian thistle around the first of March, when the thistle rosettes are big enough to see. I use Garlon or Remedy which are both broad leaf weed killers and spray using a 2 gallon hand sprayer which I carry around the field looking for the thistle.

I hate to use roundup early as it will also kill the grass. I prefer not to hoe or dig them out early in the spring because it also kills the grass and if you don't get all of the thistle root it will grow back. If the grass has dried out and the thistles are still relatively green, I will change to Roundup. Garlon and Remedy don't do well on thistles once they begin to bloom. I won't kill the grass with Roundup if the grass has already died and reseeded.

Sometimes I take a shovel out to control the Italian Thistle. Usually the ground is too hard for a hoe, and if you use a Polaski the handle is too short and you will get "bit" by the thistle. Just hit the thistle stem right above the ground with the shovel and you will cut off the stem. It will be too late for the thistle to grow back this late in the spring. If there are a lot of thistles, I use the shovel like a sythe. I believe the Fort Ord Weed Warriors use machetes on the thistles. If there are a really lot of thistles and it is too

late to spray you can use a weed eater or a tractor mower. We have sheep, and they will eat some thistle heads in the spring, and a lot of the plant after it dries up, but not nearly enough to control the plant. I have been seeing more and more of a seed eating weevil on the thistle. Maybe they will help.

I agree with Bruce Cowan on his two main principles of weed control.

1. Eliminate the seed source.
- 2.. Be more persistent than the weeds.



Italian thistle (*Carduus pycnocephalus*) Pictures from *Invasive Plants of California's Wildlands* (2000 UC Press)

**North American Weed
Management Assoc.
Conference & Trade
Show**

Aug. 14 – 16, 2001

**Wyndham Colorado
Springs Hotel
Colorado Springs,
Colorado**

**Adena Greene
gunweed@rmi.net**

Review: Educational Materials

Yellow Starthistle Video

Mike Kelly, president

Yellow Starthistle: Managing an Invasive Alien Species is the latest in a series of videos on invasive weeds brought out by Leif Joslyn's Xenobiota Xposures. It's an excellent educational tool for wildland managers, volunteer land stewards and the lay public.

In Part I, the 50 minute video introduces the general subject of invasives and how they change the landscape, then details the historical introduction of Yellow Starthistle (*Centaurea solstitialis*). Another section tells how to identify the plant and reviews its basic life cycle.

John Walsh, best known for tracking down "America's Most Wanted" fugitives has joined the U.S. Fish & Wildlife Service to ask your help in a new fight: against "America's Least Wanted" — invasive plants and animals that are threatening our waterways, our crops, and even our public safety.
— U.S. Fish & Wildlife Service

Part II reviews all the known control methods, including manual control, mowing and grazing; the biological control agents already in the field, prescribed burning, and chemical control. Other techniques such as competitive reseeding and restoring, including a special section on using native grasses, are explored.

Joslyn also discusses the relatively new Weed Management Areas in the State of California and the role they are playing in combating this weed.

In a somewhat confusing transition, Part II ends with credits, but then invites you to continue on with a Part III. The videographer

was undoubtedly wrestling with the fact that Parts I and II tell a tight, coherent story in the roughly 30 minutes "experts" say is the public's attention span for educational videos, and the fact that Part III takes up some miscellaneous Yellow Starthistle (YST) issues and examples. I thought the transition could have been done more smoothly. Part III looks at YST and water, YST Mapping Projects, Adaptive Land Management and more. This is a minor quibble with an otherwise excellent video. Another such quibble is not to have used the John Walsh portion more prominently (see this newsletter's cover). Perhaps Joslyn was a bit commercially conservative and uneasy about using such a mass market approach to this subject. In any case, the U.S. Fish & Wildlife's "America's Least Wanted" poster with John Walsh is just the sort of device we need to use to reach the broader public.

Land stewards can use this to get up to speed to confront the new explosion of YST in Southern California.

The video is available for \$23 including sales tax and shipping from Xenobiota Xposures,
62 Stratford Rd.,
Kensington, CA 94707.
Phone 510.524.3031.
Email: leif@xenob.com.

I highly recommend that any group or individual confronting this highly invasive weed obtain this video and use it aggressively in your educational efforts.

P.S. Be sure to obtain copies of the John Walsh poster from your local U.S. Fish & Wildlife Office.

Other Educational Materials

Videos

Available from Xenobiota Exposures (see Yellow Starthistle Video story):

Pampas Grass; Managing an Invasive Alien Species, 1999, 23 minutes, \$23 including tax and shipping.

Invasion of the Tamarisk, 11 minutes, 1997, \$15 including tax and shipping

Invasive species fact sheets online (Nationwide)

From: Jil Swearingen
(Jil_Swearingen@nps.gov)

The Plant Conservation Alliance weeds web site has forty-four fact sheets on different weeds. The most recent additions are:

English ivy (*Hedera helix*)

Porcelainberry (*Ampelopsis brevipedunculata*)

Cogon grass (*Imperata cylindrica*)

Tree of heaven (*Ailanthus altissima*)

Oriental bittersweet (*Celastrus orbiculatus*)

Exotic bush honeysuckles (*Lonicera maackii*, *morrowii*, *tatarica*, etc.)

Leafy spurge (*Euphorbia esula*)

Lesser celandine (*Ranunculus ficaria*)

Salt cedar (*Tamarix ramosissima* & others)

Giant cane (*Arundo donax*)

If you want to see these (or the other 34), point your web browser to:

<http://www.nps.gov/plants/alien/index.htm>

2001 CalEPPC Membership Form

If you would like to join CalEPPC, please remit your calendar 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 symposium and participate in selecting future board members. Your personal involvement and financial support are the keys to success. Additional contributions by present members are welcomed!

Individual

- Low Income* \$15
- Regular 30
- Family 40
- Contributing 50
- Sustaining 100
- Lifetime 1000

Institutional

- N/A
- Regular \$100
- Contributing 250
- Patron 500
- Sustaining 1000

* Includes students

Please make an additional contribution in my name to:

Student/Low Income membership \$ _____
Cape Ivy Biocontrol Fund \$ _____

Please make your check payable to CalEPPC and mail with this application form to:

CalEPPC Membership
c/o Sally Davis
32912 Calle del Tesoro
San Juan Capistrano, CA 92675-4227

Name

Affiliation

Address

City/ State/ Zip

Office Phone Home Phone

Fax email

*Students, please include current registration and/or class schedule

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