# Wildland Weeds

SPRING 2001

Give me your invasive, your noxious,

Your tangled masses yearning to grow free,

The wretched species of your teeming shore.

Send these, the pest plants, tempest-tost to me,

l lift my lanp beside the golden door!

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#### Cover

Unfortunately, the United States does little to prevent the introduction of potential weeds. Extensive screening exists for plant pests, but essentially none exists for pest plants.

## opinion

new kind of invasive pest has slipped into the woods and swamps of South Florida. This pest is well camouflaged. On first encounter, it is welcomed by most land managers. Yet this pest ultimately causes the worst environmental damage I've ever encountered. If not monitored closely, this pest can destroy the very natural resources we all strive to protect. Heed my warnings before it's too late, or you too may see your favorite wildland haunts visited by this destructive nudnik. I regret to report that it's not just a South Florida problem, either. If it is not already, this pest will soon be a national problem. This problem must be corrected without delay, before public confidence in our resource management skills is permanently harmed. What is this awful pest and how did it get here? Believe it or not, we (us; that is, invasive plant managers) introduced it and we are responsible for it - it is us!

We have done a good job of educating the general public and our legislators about the invasive plant problem in this country. We can finally see our efforts paying dividends from the local board rooms to the highest levels in our Federal government. In Florida, the Legislature has appropriated millions in recent years to fund control programs. We have developed solid management programs and set out to destroy these pests with the best of intentions. So what's the problem and where did we go wrong? We have unwittingly created an industry to do battle against these pests where no industry existed previously, and we have done so without establishing the appropriate performance standards for excellence. With governmental acceptance of low bids for contractual labor, and no uniform

What is this awful pest

Non-target herbicide damage to native slash pine.

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standards for training and experience, we have put our natural treasures in the hands of untrained laborers. This has not always been the case, but it has been the recent trend. I'll give two examples, both in Palm Beach County.

While these stories are true, the names have been changed to protect the guilty. We'll call the first site Dimpled Chad Park. Dimpled Chad Park was purchased as part of a larger "greenway" project which connects a series of natural areas owned by various local and state agencies. The property contains wetlands that are critical to the health of Florida's first Federally designated Wild and Scenic River. Shortly after acquisition, a contractor was hired to control invasive plants on the property. Herbicide applications controlled most of the invasive plants. Unfortunately, control also extended to most of the surrounding native forbs and trees (top photo). Apparently, application approach and herbicide overspray caused the damage.

The second site we'll call Butterfly Ballot Park. Butterfly Ballot Park was purchased as mitigation for a nearby development. One of the botanical jewels of the property is (or should I say, was) the large number of mature dahoon hollies (*Ilex cassine*). The devel-

oper was required to treat the invasive pest-plants (mostly Brazilian pepper) on this property as a con-



photo: www.newleafgraphics.com

Native dahoon holly (*llex cassine*) with mature red fruits.

dition of their permit. To save money, day-laborers were hired and instructed to "kill anything with red berries." Oops! At last count, 5,155 native trees were chopped down and

herbicided (see photo). The company is facing a fine of up to \$2.6 million for their mistake. Lack of supervision and qualified help the culprit.

These are only two recent examples from a long list of growing problems. We can fix these problems, but we must do it collectively. We must insist

that only qualified companies get this work. We must develop educational resources so more companies can



Non-native Brazilian pepper (*Schinus terebinthifolius*) with mature red fruit.

advance cadres of qualified staff. For instance, Florida is in the final phase of developing a certification program for invasive plant control in natural areas. Once established, we should all insist that only applicators certified for this

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The stump of a large dahoon holly, *left*- it was mistakenly cut and treated with a herbicide. Mix of native dahoon holly, wax myrtle, myrsine and red bay, *above* all dead or dying from a herbicide application intended for exotic Brazilian pepper.

We all know that you can't. Only we can bring a halt to such failures. As leaders in this field, we must insist that this growing industry meet the highest standards. These standards will, of necessity, raise the bar to another level. Getting there will be no small feat. I think we have no choice.

- Dan Thayer, dthayer@sfwmd.gov

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# Are we on the cusp of a significantly enhanced national effort to counter bioinvasion?

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The answer depends on whether the people President-elect George W. Bush appoints have any familiarity with this issue. The new secretary of agriculture, Ann Veneman, has worked on Medfly and other issues in California – so we can hope for an understanding ear there. The other major player, the Congress, will remain in Republican control, although with a narrowed majority.

Of course, many Republicans are concerned about invasive species. Prime examples are Governor Dirk Kempthorne of Idaho and his colleagues in the intermountain states, where rangeland weeds cost the livestock industry millions of dollars annually. More broadly, however, I think we can expect a Republican administration and congress to be more skeptical of government programs, and less willing to adopt regulations that restrict activities by economic interests. I anticipate that any Republican-led program will focus on those invasive species that harm economic interests including the aforementioned rangeland weeds. There may be considerably less interest in those introduced organisms that threaten natural areas.

Recent years have seen a muchheightened awareness of the costs imposed by bioinvasion — including but not limited to within the federal government. Much of the credit for this progress goes to Don Schmitz, Phyllis Windle, Jim Carlton, and others who organized the 1997 letter to Vice President Gore that was endorsed by more than 500 scientists. It was this letter that led to adoption of Executive Order 13112, creation of the Invasive Species Council and Advisory Committee, and preparation of the draft invasive species management plan that was released for public comment in October. While we are all probably seeking more! from the Council and Plan, these developments still represent major steps forward.

he "system" is now poised to act — although probably less boldly that we wish.

The "system" is now poised to act — although probably less boldly that we wish. At this crucial moment, the federal administration is changing hands and the Congress is distracted.

So, once again, the burden is on us to make sure the process moves forward instead stagnating. The Exotic Pest Plant councils, their members, and other concerned organizations and people need to begin immediately to educate officials in the new administration and the Congress.

The draft management plan unfortunately does not yet provide a strong rationale for curbing bioinvasion. Even the economic costs are downplayed. Therefore, we must remind decisionmakers that the present federal control effort pales beside the need. Federal spending — now \$631.5 million (GAO 2000)— constitutes less than half of 1% of the \$137 billion in annual losses tallied by Dr. David Pimentel and colleagues of Cornell University (2000). International trade is the principal "pathway" by which damaging invaders enter the U.S. yet our Nation's trade policy is dominated by efforts to increase the \$50 billion earned annually by agricultural exports (Seattle Post-Intelligencer) rather than to protect us from an increase in the \$90 billion cost imposed by animal weeds, plant pests, and animal diseases introduced by trade (Pimentel et al.2000).

The Plan also does not specify how the National Invasive Species Council and concerned public will exercise oversight to ensure that the agencies comply with the Executive Order.

One obvious lapse is the failure of any agency to carry out its duties under Section 2(3) of the Executive Order. This section says no agency may authorize, fund, or carry out actions that it believes are likely to cause or promote introduction or spread of invasive species unless, "pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions." It is particularly important that those agencies that introduce and recommend plants for various uses comply with this requirement.

Among such agencies are the USDA Natural Resources Conservation Service, Cooperative State Research, Education, and Extension Service, Agricultural Research Service, and the U.S. Department of Transportation Federal Highway Administration.

The evidence is that these agencies have some progress to make. Horticultural Guides issued through the extension program of the University of Missouri are still recommending Hall's, Tatarian, and Amur honeysuckles (*Lonicera japonica* 'Halliana', *L. tatarica*, *L. maakii*), wintercreeper (*Euonymus fortunei*), and other species known to be invasive.

From the perspective of the EPPCs, one of the strongest aspects of the draft management plan is its promise to close various pathways for deliberate introductions for horticultural plants, pets, aquatic animals used in aquaculture and mariculture, etc. The Invasive Species Advisory Committee that assists the Council felt strongly that the screening mechanisms for various taxonomic groups or geographic regions should conform to common principles; it therefore recommended formation of a joint government-committee task group to ensure that this occurs.

Unfortunately, top federal officials have not put the same priority on closing off such deliberate introductions. Will this position result in a change to the Plan? Will agencies simply drag their feet? The EPPCs should be prepared to educate all levels of the administration, as well as the Congress, on the importance of curbing deliberate introductions.

Our hand is probably strengthened by the fact that considerable preparatory work has already been done with regard to pre-import screening of horticultural imports. Scientists and representatives from Exotic Pest Plant councils met in 1997 with representatives of the nursery trade to increase communication and discuss ways to reduce the introduction of invasive species. Government officials and the trade have studied the systems developed by Australia and New Zealand. The USDA is planning a workshop with the horticultural industry in January 2001. With this start, I believe a screening system for plants should be operational well before the deadline of January 2007 set in the draft plan. Soon, I hope, people involved in protecting natural areas — governmental and non-governmental — will join the negotiations.

Parallel discussions in some states and regions have resulted in agreement on in short lists of plants that should be removed from the trade.

If the government does limit its

efforts to those species that cause harm to economic interests, this will perpetuate a longstanding challenge to those of us concerned about the impact of "weeds" (and "plant pests") on natural systems — wildlands. The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) has traditionally confined itself to protecting agriculture. This stance has been reinforced by the committees to which the agency reports in Congress. While there has been a little progress in recent years, my perception is that some in the APHIS leadership and probably many of the staff are not willing to expand APHIS' efforts to control wildland weeds unless the agency is guaranteed significantly more money.

The draft management plan released in October 2000 contains no specific mechanism to improve protection for natural areas from such introductions. The Plan does promise to ask Congress for more funds — but realizing this promise might be difficult. Even if more money is made available, Congress might continue to focus on pro-

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tecting agriculture. If that is the case, weeds and pests that invade primarily natural areas will continue to enter the country and spread without an effective response.

The draft plan does not provide for applying screening procedures to the hundreds of invasive plant and animal species that are already in trade. The only strategy to reduce use of such plants-or to prevent the spread of weeds from one state to another is a recommendation to expand access to supplies of seeds of native plants. This approach enjoys considerable support in the Advisory Committee and Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW). In addition, the U.S. Department of Transportation, Florida DoT, and University of Florida are sponsoring a workshop on techniques for growing seeds of native plants in coming months.

The draft plan commits the government to few specific steps to improve early detection. The Advisory Committee pushed strongly for concrete steps to bring about faster assessment and dissemination of information about newly detected invaders. The Committee also stressed the important role that the public can play by reporting new infestations.

Again, those of us working on "weeds" may be ahead of the "plan". For several years FICMNEW has been developing an early detection system for invasive plants. Working from the recommendations of a workshop held in June 2000, FICMNEW will write a draft implementation plan and actively seek input from weed organizations during the first half of 2001.

Meanwhile, CSREES has stated its intention to develop programs to train people to detect invasive species. The program would be modeled on the Master Gardeners program; CSREES staff would develop the content, while land grant universities would it carry out.

Don Schmitz' proposal to create a leading institution modeled on the Center for Disease Control is not mentioned in Plan. Such a center could be valuable from many points of view raising awareness, providing advice, and pointing fingers at those agencies that fail to prevent introductions or respond to newly detected invaders. Some activists believe such a center would function best if it were not part of government — rather, an independent watchdog. This approach would require an appropriate institution to obtain funding probably from foundations. Until a center is created, can nongovernmental organizations including the EPPCs work together to carry out some of the tasks?

There remains the difficult question of ensuring that information spurs needed action. It iswidely agreed that

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agencies need more funding for rapid response, and that the funds must be accessible on a priority basis, not tied to a particular species or agency. The Plan calls for legislation to create such a fund, but postpones submitting the proposal to later years. The Advisory Committee and Council staff have agreed instead to get that legislation drafted by January 2001. That would just be the first step, however. Concerned non-governmental organizations and individuals must carry out an active campaign to persuade the Congress to adopt the legislation.

To address control of established invasive species, the plan relies heavily on grants and cost-share programs. This approach is popular; Senators Craig (R-ID) and Daschle (D-SD) introduced a bill to establish such a program in the final weeks of the 106th Congress, and expect to re-introduce the bill early in the new Congress. This approach is probably more useful for "weeds" than for some other categories of invaders (e.g., forest pests). However, we must all be vigilant to ensure that the program applies sound criteria in selecting recipients and requires follow-up monitoring and reports on the projects' results.

Furthermore, will the Congress fund both the cost-share program for private lands and the federal land-managing agencies? These agencies still need substantial new money to address weeds and other invaders on lands under their jurisdiction — which include some of America's conservation "crown jewels".

In the international arena, the Plan calls for close cooperation with the Global Invasive Species Programme (GISP), which aims to

- 1) build countries' capacities to address the invasive species issue;
- 2) develop best practices for prevention and control in various scenarios;
- provide useful information through a global clearing house, facilitating research that unites agricultural and biodiversity concerns; and
- 4) promote cooperation with international bodies that have responsibilities in this area including the International Plant Protection Convention (IPPC), World Trade Organization (WTO), and International Maritime Organization (IMO).

One of the "best practices" initiatives will be a global workshop on horticultural plants, which will be cosponsored by The Missouri Botanical Garden, The Royal Botanical Garden at Kew, and perhaps others. Sarah Reichard is one of the experts planning the meeting. The purpose of this workshop is to begin developing codes of conduct for botanical gardens, nurseries, and landscape architects, to discuss screening methods, and to promote identification of non-invasive alternatives for particular invasive plants.

The Plan ignores several opportunities to address invasive species, most notably the March 2001 meeting of the scientific body for the Convention on the Conservation of Biodiversity, which will focus on invasive species.

The Plan and APHIS put great emphasis on "engaging" states and affected industries but say little about interacting with the public more broadly, environmental conservation groups etc. The public will provide the funds; it must also understand and cooperate with the Plan if it is to succeed. Furthermore, the public can help in numerous other ways, including by

- alerting authorities to new introductions
- participating in volunteer control and management efforts
- raising awareness about invasive species problems and solutions.

In addition, the public is concerned about the environmental ramifications of control techniques, such as use of herbicides and pesticides, and must be consulted about programs that rely on these methods.

The Research section of the Plan recognizes the importance of strengthening agencies' "core" programs and the need for both basic and applied research. Some consider the Plan to be weak on technology transfer. FIC-MNEW plans a conference on weed control techniques in the coming year. I would like to see greater emphasis on developing and testing "exclusion" methodologies for pathways in addition to ballast water, among them living plant imports as vectors of forest pests. The Plan should also provide for research into the economic impacts of invasive species and the cultural or societal choices that promote imports of foreign goods — goods that can either be invasive themselves (e.g., plants and pets) or be vectors for pests and disease organisms.

The Plan also delays the outreach or education effort while assembling a marketing team to design a major national program. Surely a number of ongoing programs should be continued, even expanded, during this hiatus? The aquatic invasive species information system tied to Sea Grant colleges appear to warrant emulation. I hope the designers will remember the need to educate the business executives, economists, politicians, and trade officials who are promote programs and actions that contribute to invasivespecies problems worldwide.

Meanwhile, agency activities proceed and include some promising developments.

APHIS & the Department of Interior's U.S. Geological Survey Biological Research Division are jointly developing a system to accept reports of new weed infestations on the Web, or via telephone or fax. This system will allow for various levels of credibility voucher specimen, photograph, publication in a peer-reviewed journal, or even hearsay report. The report will be validated before being accessioned. Once the report is accepted, notices would be sent interested people, perhaps by a listserve. APHIS is also trying to develop or adapt "invasiveness models" for use in assessing likely weediness of plant species. The agency has contracted with the Weed Science Society of America to develop a list of 40 top-priority weeds. The contractor is trying to include natural area concerns.

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Australia carries out assessments of weed potential on all new plant imports. New ornamental plants in particular are assessed as they are the major source of new naturalised plants that, in time, may become weeds that impact on our environment.

#### Why does AQIS regulate plants?

The Australian Quarantine and Inspection Service (AQIS) is the Commonwealth agency responsible for carrying out the government's plant quarantine policies. Substantial changes have occurred in these policies in the last five years. They reflect the rising awareness of the impact weeds have in Australia, including the impact of exotic plants on non-agricultural ecosystems, and changes in plant quarantine standards at an international level.

#### What is a weed?

Only plants that do not occur in Australia, and which are assessed to be quarantine pests, can be prohibited importation under international agreements. A 'quarantine pest' is defined as 'A pest of potential economic importance to the area endangered thereby and not yet present there or present but not widely distributed and being officially controlled'. The definition of a pest includes weeds.

The government now requires that (1) the potential environmental impacts of new species, varieties and lines of plants should be assessed including their propensity to become weeds, and (2) that regulations governing plant importation be based on a permitted list approach. These actions will prevent new weed introductions.

#### Ornamental plants as new weeds

Many of the plants introduced into

Australia over the last 200 years have been beneficial to us and ecologically benign. But a small percentage has run rampant. Gaining a foothold in areas disturbed by human activities, they have moved into natural areas where they may radically alter the ecosystems they have invaded. 65% of the plants that have naturalised in Australia over the last 25 years have been introduced deliberately for ornamental purposes (Groves 1997). The sources of these introductions include botanical gardens, government and private nurseries and private importers.

#### **Ornamentals turned invaders**

Some examples of plants imported for ornamental uses that have become or have the potential to be serious weeds are the aquatic plants hydrilla (*Hydrilla verticillata*) and water hyacinth (*Eichhornia crassipes*), creeping plants such as bridal creeper (*Myrsiphyllum asparagoides*) and rubber vine (*Cryptostegia grandiflora*), and garden plants such as Miconia (*Miconia calvescens*), brooms (*Cystisus* spp. and *Genista* spp.), blackberries (*Rubus fruticosus*) and lantana (*Lantana* spp.).

#### A new approach to plant imports

New legislation under the Quarantine Act, resulting from a review of quarantine in 1996, will prohibit all plants until assessed and/or permitted. The need for weed assessment relates only to new plants; all plants already growing in Australia will generally continue to be permitted. Seed imports are permitted if the species or genus is listed on the existing plant permitted list.

Live plant material, either rooted stock or tissue culture, is permitted, with conditions, if listed on the same list. All plants not on this list, however, will be prohibited until they have been assessed for weediness. The permitted list stands at over 4000 taxa and will be reviewed and added to over the next two years to make it a list of all plants naturalised in Australia.

#### How does AQIS assess plants?

The assessment of new plants for addition to the permitted list is a threestep process. Firstly, the taxonomic status of a new introduction is checked. If the species is a synonym, variety or line of a permitted species it can be imported unless it has characteristics that may alter its weed potential, such as herbicide resistance. A species that is not listed proceeds to the second step, the weed risk assessment. AQIS has assessed new plants for weed potential since 1991, and the Weed Risk Assessment system (WRA) adopted in August 1997 is a measure for strengthening the pre-entry assessment of new plant imports.

#### The WRA system

The WRA is a question-based scoring system, in which 49 questions are asked about the new species. The questions include details of the plants climatic preferences, biological attributes, reproduction and dispersal methods. A minimum number of questions must be answered before an assessment is made. The WRA uses the responses to the questions to generate a numerical score. The numerical score determines an outcome: accept, reject or further evaluate for the species.

Species which score further evalu-

ate in the system proceed to the third tier assessment. This involves postentry evaluation of species in greenhouses or in field studies to examine more directly the weed potential (or verify the potential benefits) of the species.

Prohibited plants may be imported for destructive analysis or research. Plants in breeding programs may have their status revised if invasive characters are removed during the program.

#### The bottom line

Under new legislation, all new plants imported into Australia will be assessed by AQIS for their potential to become weeds. The aim of these assessments is to reduce the number of ornamental plants that escape to become new weeds.

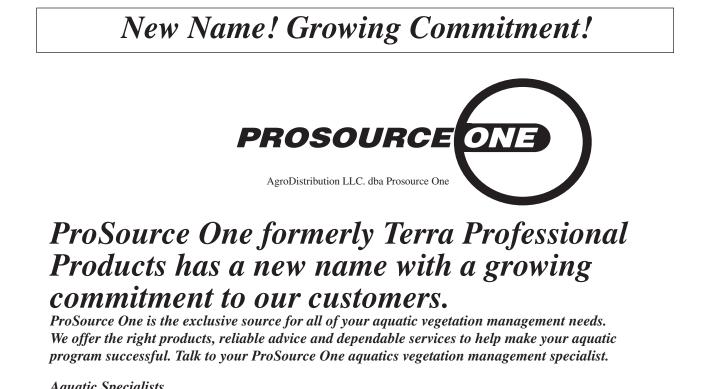
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Eichhornia crassipes

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# NAEPPC Meeting at NAA

The National Association of EPPC's met at the 27<sup>th</sup> Annual Natural Areas Conference in St. Louis on October 19, 2,000. Representatives were present from TN-EPPC, Mid-Atlantic EPPC, Michigan Invasive Plant Council, Wisconsin (newly forming EPPC), PacNW-EPPC, FLEPPC and CalEPPC. Updates on organization actions were given from state and regional organizations. CalEPPC reported that their invasive species list had been recently revised and published. TN-EPPC reported that their list was being revised and nearly complete. Kelly Kearns reported that Wisconsin would be hosting a meeting in March and that they were in the process of establishing an Invasive Plant Council. Nelroy Jackson, who is a member of the Invasive Species Advisory Committee and a former CalEPPC BOD member, informed everyone about the up-coming 2<sup>nd</sup> Annual National Weed Awareness Week February 26-March 2, in Washington, D.C. He encouraged all EPPC's participation to become more visible on the national front.

A discussion of national issues gave rise to actions we decided were appropriate for NAEPPC to take. Jil Swearingen (Mid-Atlantic EPPC), who chaired this meeting, agreed to write a letter on behalf of the NAEPPC to the National Invasive Species Council. The letter is to inform the NISC about the purpose of EPPC and to express our support and interest in participating in the implementation of the National Management Plan. There was concern expressed at this meeting (and previous meetings) about how EPPC's have been ignored as the issue of invasive species has risen to national prominence, and how we have not been recognized as a stakeholder by the feds. In writing this letter, we want to bring to the NISC's attention that the Exotic Pest Plant Council has much expertise to provide on all aspects of natural area weed issues and that EPPC wants to be recognized as a cooperating partner at the regional and state level. As a stakeholder, we should have a voice at the table in state and regional invasive species councils that the feds are trying to institute.

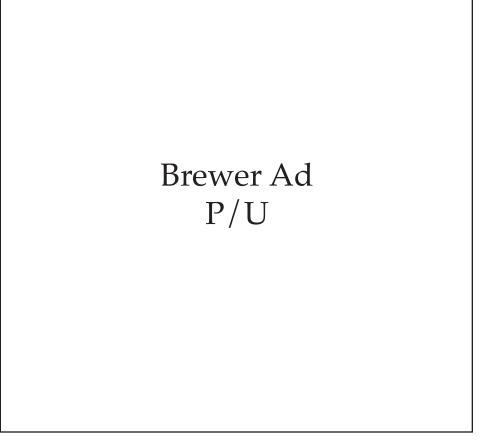
We also decided to revise the 1995 MOU that established the NAEPPC. The revision will emphasize the organization's purpose, and state EPPC's mission goals. The revised MOU will identify NAEPPC's focus on natural area and wildland weed issues. Mike Kelly, President of CalEPPC volunteered to write the revision. It will be sent to all EPPC's for review and approval. The MOU will provide NAEPPC a formal legal documentation that will describe our common interest. The MOU can be presented to the National Invasive Species Council, and it will have all participating EPPC organization's signatures. The mission statement in the MOU will also provide the necessary framework for newly forming invasive plant councils to adopt if they choose to participate as a member of the National Association of Exotic Pest Plant Councils.

The NAEPPC also agreed to host an invasive exotic pest plant symposium at next year's Natural Areas Conference at Cape Canaveral,

Florida. As a Natural Areas Association Board member, I had the opportunity to participate with the local planning committee for next year's NAA Conference to arrange our participation. The Natural Areas Association and EPPC have many common goals and should collaborate in our efforts whenever possible.

The NAEPPC meeting adjourned after approximately 2.5 hours. This particular meeting was difficult to schedule and conduct because of conflicting events at the NAA conference. It occurred after daylong field trips. Because they ran late, conducting business at this meeting proved to be very challenging. We will rectify this problem at next year's meeting with appropriate planning. Our symposium next year at NAA should provide much interest and should be a springboard for a productive NAEPPC meeting.

- Brian Bowen, Southeast EPPC Coordinator, nighttrain0@home.com.



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# Internodes XenoNET

## Weed Calendar now available on the Web

An electronic calendar has been created to help us all keep track of important meetings, workshops and events related to invasive plants.

To access the **Weeds Gone Wild** calendar, go to:

http://www.eventcal.net/ weeds\_gone\_wild

You can select which month you want to view by selecting a month, a week or a day from the strip on the right hand side of the screen.

If you wish to print a page:

- 1. Click somewhere on the actual calendar you want printed (on left-side of the screen) or you will print the strip of calendars on right.
- 2. Changing your fonts setting, through the "View" menu, to smaller or smallest, so you get the whole calendar on one page.
- 3. Go to Page Setup, in File menu, and select "landscape" orientation
- Select Print, in File menu, and "only the frame selected"

If you have important weedy events, please send Jil an email with

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all the pertinent information, including an email for a contact and a url to a web site for the event if available.

Links to the Plant Conservation Alliance and the Alien Plant Working Group's "Weeds Gone Wild" web page are provided at the top of the calendar.

For more information, contact Jil Swearingen, U.S. National Park Service, 202-342-1443, ex. 218, jil\_swearingen @nps.gov

#### MARK YOUR CALENDAR

Southeast Exotic Pest Plant Council "2001 Conference: A Weed Odyssey". Georgia Center for Continuing Education, University of Georgia, Athens. **March 21-24, 2001.** Contact: Cheryl McCormick, cheryl@uga.edu.

League of Environmental Educators in Florida (LEEF), annual conference, **March 22-25, 2001**. Leesburg, FL. Contact: eileen\_ tramontana @ d i s t r i c t . s j r w m d . state.fl.us

Association of Southeastern Biologists/Southern Appalachian Botanical Society/SE Chapter of Ecological Society of America/Tri-Beta: 62nd Annual Meeting, **April 4-7, 2001**. New Orleans, LA. Contact: www. loyno.edu/~asb

41<sup>st</sup> Annual Meeting of the Aquatic Plant Management Society, **July**  **12-15, 2001**, Minneapolis, MN. Contact: David Tarver, davidptarver @worldnet.att.net.

16th Annual Symposium, Florida Exotic Pest Plant Council, **September 12-14, 2001**, St. Augustine, FL. Contact: Kathy Burks, kathy.burks @dep.state.fl.us

11<sup>th</sup> International Conference on Aquatic Invasive Species, October 1-4, 2001. Hilton Alexandria Mark Center, Alexandria, VA. Contact: Contact: Elizabeth Muckle-Jeffs, profedg@rencigs.netwww.aquatic-invasivespecies-conference.org.

28<sup>th</sup> Annual Natural Areas Conference, 2001: A Spatial Odyssey, October 3-6, 2001. Radisson's "Resort at the Port," Cape Canaveral, FL. Contact vickie.larson-1@ksc.nasa.gov, www.natareas.org.

Annual Membership Dues Include: Quarterly magazine, Wildland Weeds • Quarterly newsletter Legislative updates regarding exotic plant control issues. Membership:

INDIVIDUAL Student - \$10 • General - \$20

Contributing - \$50 • Donor - \$51-500

INSTITUTIONAL General - \$100 • Contributing - \$500 Donor - \$501-\$10,000 • Patron - \$10,000 or more

Wildland Weeds subscription - \$15/year (does not include other membership benefits)

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