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Editorial

There appears to be general agreement that water hyacinth and water lettuce in Florida are under maintenance control. As aquatic plant managers we have planned well and spent our money wisely. Now both managers and researchers have painted the bullseye on hydrilla. Continued research, interagency planning and an unwavering purpose will be necessary for success. At the same time we must ensure prudent use of our resources. To this end, the U.S. Army Corps of Engineers (Jacksonville District) sponsored a June workshop to provide recommendations for developing a five-year hydrilla management plan for Florida waterbodies receiving Federal aquatic plant management funds.

Both operations and research personnel participated. Operations personnel provided maps of hydrilla-infested waterbodies, costs and results of management activities the past five years, and their anticipated treatment priorities. Herbicide and biocontrol researchers provided treatment recommendations for specific waterbodies.

Specific recommendations from the workshop, and subsequent follow-up comments, are being considered during the development of the Corps five-year plan which will serve as the foundation on which Federal funding allocations are based. The plan should assist cooperators in formulating their Annual Work Plans (AWP) and increase both the efficiency and effectiveness of hydrilla management operations.

In a related effort to enhance management technology options, operational biocontrol agents are now being included in the AWP protocol in Florida. Aquatic plant managers and researchers both agree that stable cost-shared resources for release, establishment, and follow-up surveillance of operational agents need to be available.

As managers, we cannot allow newly-designated operational biocontrol agents to be orphaned. Expenses associated with maintaining nursery colonies, dispersal, establishment, and surveillance continue long after the research phase is concluded. Inclusion of these agents in the AWP protocol will provide a shared funding structure and a more efficient and objective program, thereby expanding the benefit of each Federal tax dollar spent for exotic aquatic plant management.

—Bill Zattau



About The Cover
Summertime and the living is weed-sy on the Chatsahawiska River, Citrus County.

Photo by Jim Kelley,
Dept. of Natural
Resources, Floral City

Aquatics

June 1991/Vol. 13, No. 2



CONTENTS

Pickerelweed by Frank Melton and David L. Sutton 4

LAKEWATCH by Sandy Fisher 10

Handy Hints on How (and How Not) to Give a Talk by Alison Fox 14

FAPMS Applicators' Paper Competition 19

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Figure 1. Flowers of pickerelweed

(Photo by Dave Sutton)

Pickerelweed

By
Frank Melton and David L. Sutton

I. Introduction

What's in a name? When the term "weed" is used, one immediately thinks of an unwanted plant, a plant that causes problems, a plant out of place, a plant with uncontrollable growth, a plant that

must be managed, or some similar meaning. Thus, when a plant contains the term "weed" as part of its common name, does this imply that the plant is a weed? For example, the common name "Pickerelweed" is used for one of our native aquatic plants found throughout

much of Florida. Does anyone really consider Pickerelweed (Figure 1) to be a problem plant?

It is well known that a plant may be considered a weed by some individuals but a desirable plant by another. Furthermore, a plant may be considered a weed under one set of conditions, but a desirable species under another.

In pickerelweed, we have a native plant of Florida, but one with a name that suggests it is a weed or problem plant. How did this plant receive its name?

A check with Dr. John Kartesz, Director of the BIOTA OF NORTH AMERICAN PROGRAM of the North Carolina Botanical Garden, provides us with the following explanation: "In the case of pickerelweed (*Pontederia cordata*), it is reported that someone observed pickerels (or pike-like fish) living, and perhaps laying eggs, among these plants. The use of the word "weed" suggests that the plant is quite prolific. Although the plant may not be considered a weed in the sense of being an invasive or problem species, its commonness, and prolific reproduction may have earned it this title" (John Kartesz, 1991. Personal correspondence).

II. Classification

In 1737 Carolus Linneaus gave pickerelweed plants the genus name *Pontederia* in honor of G. Pontederia, an Italian botanist (1688-1757). Pickerelweed (*Pontederia cordata* L.), a perennial, emergent, aquatic plant, is a member of the family Pontederiaceae. Included also in this family is waterhyacinth (*Eichhornia crassipes* (Mart.) Solm), an exotic troublesome floating aquatic weed.

Three common varieties of pickerelweed have been identified: *Pontederia cordata* L. var. *cordata*, *Pontederia cordata* L. var. *lanceifolia* (Muhl.) Torrey, and *Pontederia cordata* L. var. *albiflora* Raf.

*Nursery Manager, Conservation Consultants, Palmetto, FL and Professor, Fort Lauderdale Research and Education Center, IFAS, University of Florida.

**Pontederia* line drawings reprinted from Godfrey, R.K. and J.W. Wooten, 1979. *Aquatic and Wetland Plants of Southeastern United States*: Monocotyledons. University of Georgia Press, Athens. 712 pp.



Figure 2. White pickerelweed flowers in Paynes Prairie (Photo by Howard Adams)

III. Range and distribution

Pickerelweed is one of the more common aquatic plants in Florida. It is found in all sections of Florida, but is more abundant in central and south Florida. Variety *cordata* has a glabrous floral tube that is shaggy pubescent in the bud stage. The leaf blades are deltoid-ovate to triangular lanceolate with bases deeply cordate to truncate. It ranges from South America to Ontario, Canada, including much of the Eastern United States.

Variety *lanceifolia* has a floral tube that is persistently pubescent with glandular hairs. The leaves are narrowly to broadly lanceolate with bases typically unlobed. It ranges from South America and the West Indies to Tennessee, including the Southeastern United States.

A third variety, *albiflora*, has white flowers (Figure 2). It is found in areas around Louisville, Kentucky, and in Pinellas County and the basin marsh of Paynes Prairie in Florida.

Pickerelweed flowers exhibit tristylly. Tristylly means three kinds of flowers on the plants: 1. Flowers having short style (the slender upper portion of the female organs), three medium length stamens (male organs), and three long stamens; 2. Flowers having three short stamens, a medium length style, and three long stamens; and 3. Three short stamens, three medium length stamens, and a long style.

Pollination of styles the same height as the stamens is called legitimate pollinations and result in

significantly higher seed set than other illegitimate pollinations. Pollen grain sizes are also different. Pollen grains from taller stamens are larger than pollen from shorter stamens. Significant levels of legitimate pollination occur in all three morphs. Populations of pickerelweed in the southern United States are pollinated by bumblebees (*Bombus* spp.) and by long-tongued solitary bees of which the genus *Melissodes* may be the most important. Frequency of legitimate pollination in the long-styled morph is highest, intermediate in the mid-styled morph, and lowest in the short-styled morph.

IV. Growth characteristics

All three varieties of pickerelweed occur in streams, marshes, ditches, swamps, ponds and lakes in up to 3 feet of water. When pickerelweed plants are planted in lakes, they become established in water from 3 inches to 2 feet in depth if they are not submersed. These plants grow well in sediments high in nutrients and spread quickly to cover the littoral shelf (Figure 3).

Pickerelweed grows in a wide range of water quality. It may completely fill small ponds and drainage ditches, even to the point of impairing water movement. It spreads from seed and also vegetatively from creeping rhizomes rooted in the substrates. It flowers year round if not frost damaged, but most flowers are formed in summer and fall. Seed may be collected after the pollinated flower spike has bent downward. Mature seeds will shatter from the flower stalk.

A recent article in *Aquatics* magazine by Sutton (1990) provides a method for germination of seeds

collected from plants in South Florida. Field observations indicate that the best time to germinate pickerelweed seeds is from April through July. However, the germination of pickerelweed seeds collected from plants growing in temperate climates may be somewhat different from those collected in Florida as seeds from cooler regions require a period of moist, cold storage before they will germinate. The wide variation in germination percentages could be explained by tristylly.

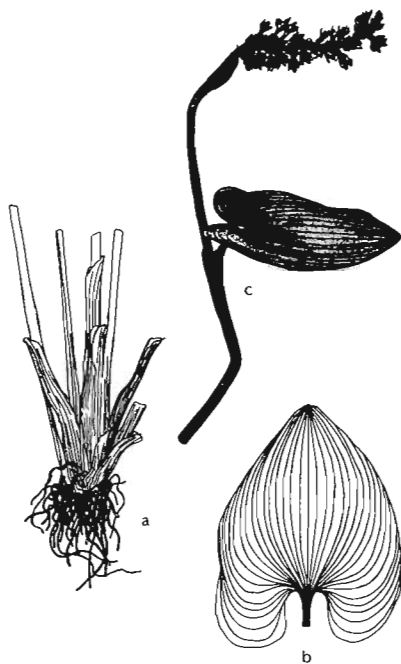
Nursery production of pickerelweed may be accomplished with seeds or vegetative material. A root section approximately 1.5-inches in length is suitable vegetative material. These may be collected from field sites. Uncut roots remaining in the ground send up new shoots within 3 to 4 weeks during the summer growing season. The seedlings or root sections may be cultured in potting soil in standard 2-, 4-, or 6-inch commercial pots. The use of sand amended with commercial fertilizer is one way to culture weed-free plants.

One of the problems involved in planting nursery container grown plants is the height of plants in relation to water depth. Small pickerelweed plants submersed at the time of planting or within a few weeks afterwards generally die. It is important to be able to grow tall nursery plants. One way of doing this is to use 2-inch square by 6 inch deep pots. Of course, large plants will require more production space, fertilizer, etc., and will be more difficult to transport than small plants. But the increased survival of large plants will help offset the need to replant those that die.

Nursery grown plants may be



Figure 3. Use of pickerelweed plants in restoration of shoreline areas. Left, young plants 2 weeks after planting, and right, plants after 4 months of growth (Photos by Frank Melton)



Pontederia cordata var. *lancifolia*: a, base of plant; b, leaves; c, upper portion of flowering stem with bract leaf and inflorescence

damaged by leaf miners in the leaves or mealybugs on the roots. An insecticide, such as malathion,

may be necessary to control these pests. When plants are grown in the same container over a prolonged period of 120 to 180 days, the older leaves die and may cause disease in the stems just above the roots. The old leaves need to be removed to prevent disease problems.

Tissue culture is also being used for propagation of pickerelweed. One of the top priorities of the future is to grow as many plants as possible from seeds, vegetative material, or tissue culture to reduce the number of mature plants harvested from wetlands. Commercial production of pickerelweed will help preserve natural wetlands. This is important because it takes many years for a man-made wetland to perform the same function as a natural one.

V. Uses of Pickerelweed

Pickerelweed is valuable in that it provides food and shelter for fish, ducks, many other species of wildlife, and for domestic livestock such as cows, pigs, goats and sheep. One

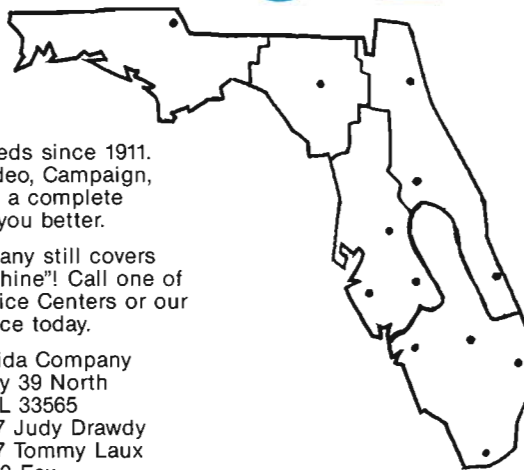
species of bee, *Dufourea novae-angliae* Robertson), apparently visits no other flower. Pickerelweed



Pontederia cordata var. *cordata*: a, base of plant; b, leaf; c, upper portion of flowering stem with bract leaf and inflorescence



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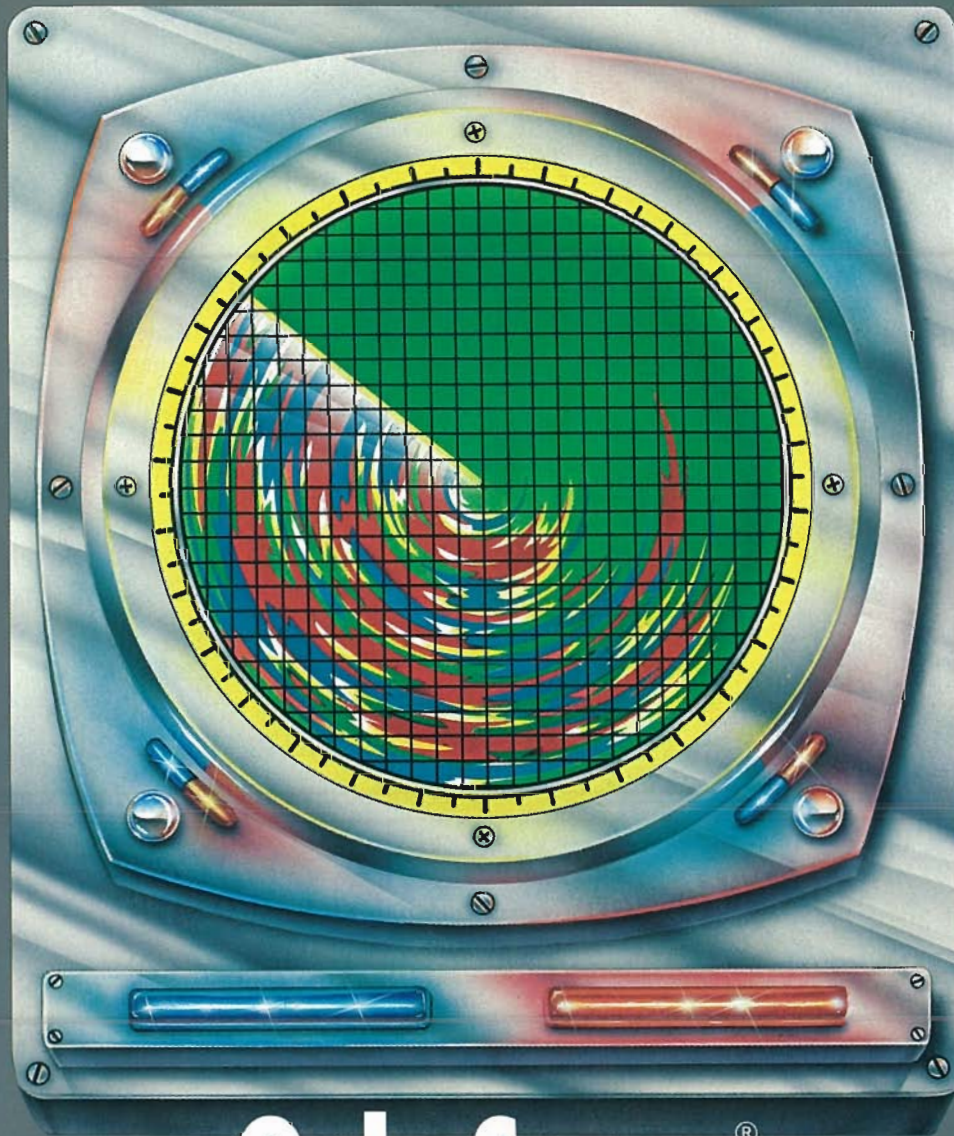
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plants also have ornamental value. The purple flowers are very attractive when plants are grown in groups. Pickerelweed is used for water gardens and ponds in home landscapes as well as indoor aquaria.

Pickerelweed is one of the most commonly used aquatic plants for mitigation, shoreline restoration, and roadside revegetation projects. The main reasons for its use are (1) availability of plants, (2) its ability to grow in a variety of habitats, and (3) its ability to grow in the shallow and deeper areas of the littoral shelf in many aquatic habitats.

One disadvantage of using pickerelweed is the high rate of transpiration which wastes precious water. Also, it uses nutrients from the soil substrate, but unlike floating aquatic plants, it does not absorb many nutrients from the water. Therefore, it does not purify water in that way. The plants do have the advantage of aiding stabilization of the shoreline and thus reducing the effects of wind and wave action that help resuspend nutrients.

Pickerelweed will continue to be one of the most widely used native aquatic plants for mitigation and restoration projects because of its value for wildlife habitat and as an ornamental. The addition of pickerelweed in home water gardens and in lakes in residential subdivisions and golf courses will enhance the water resources in the State of Florida.

Acknowledgements

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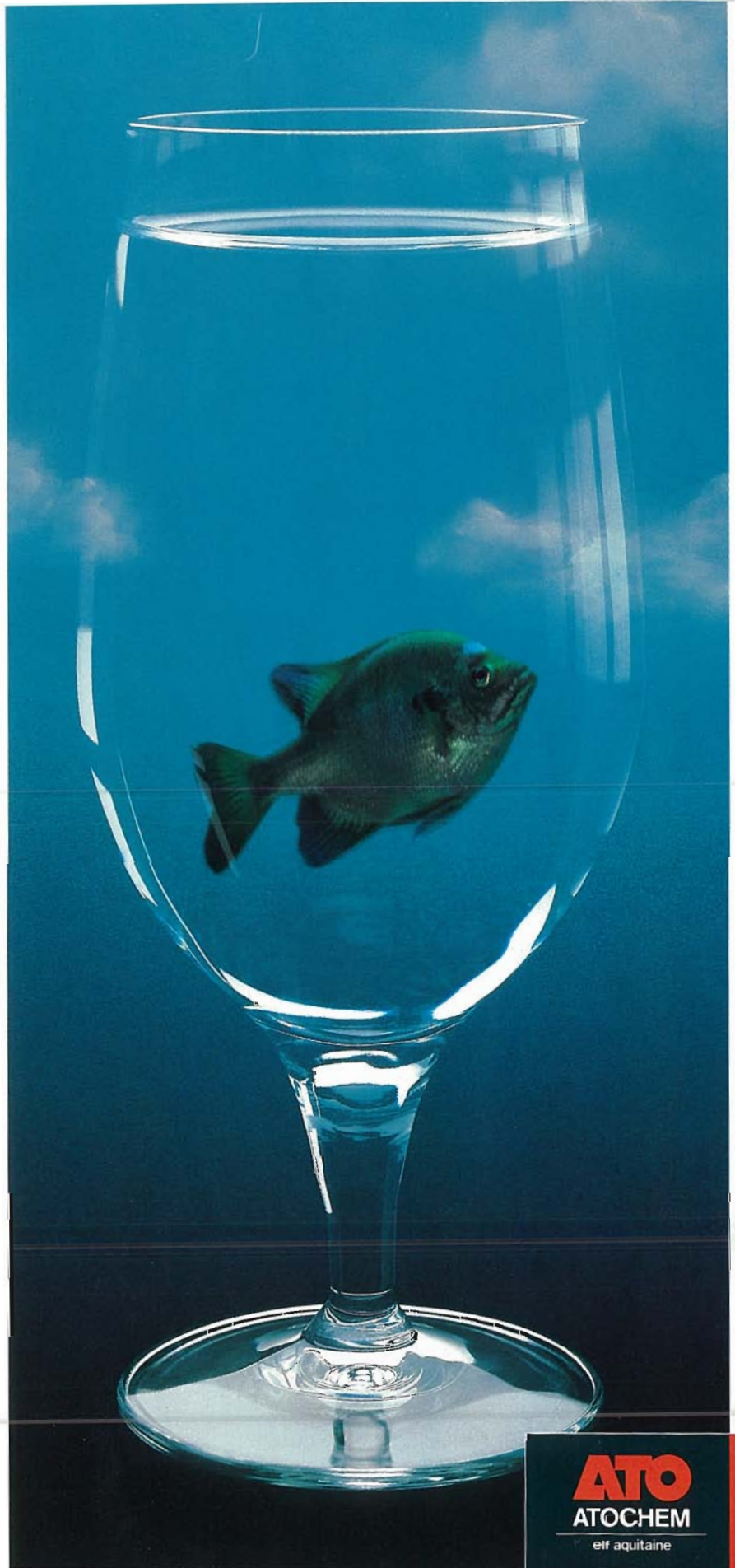
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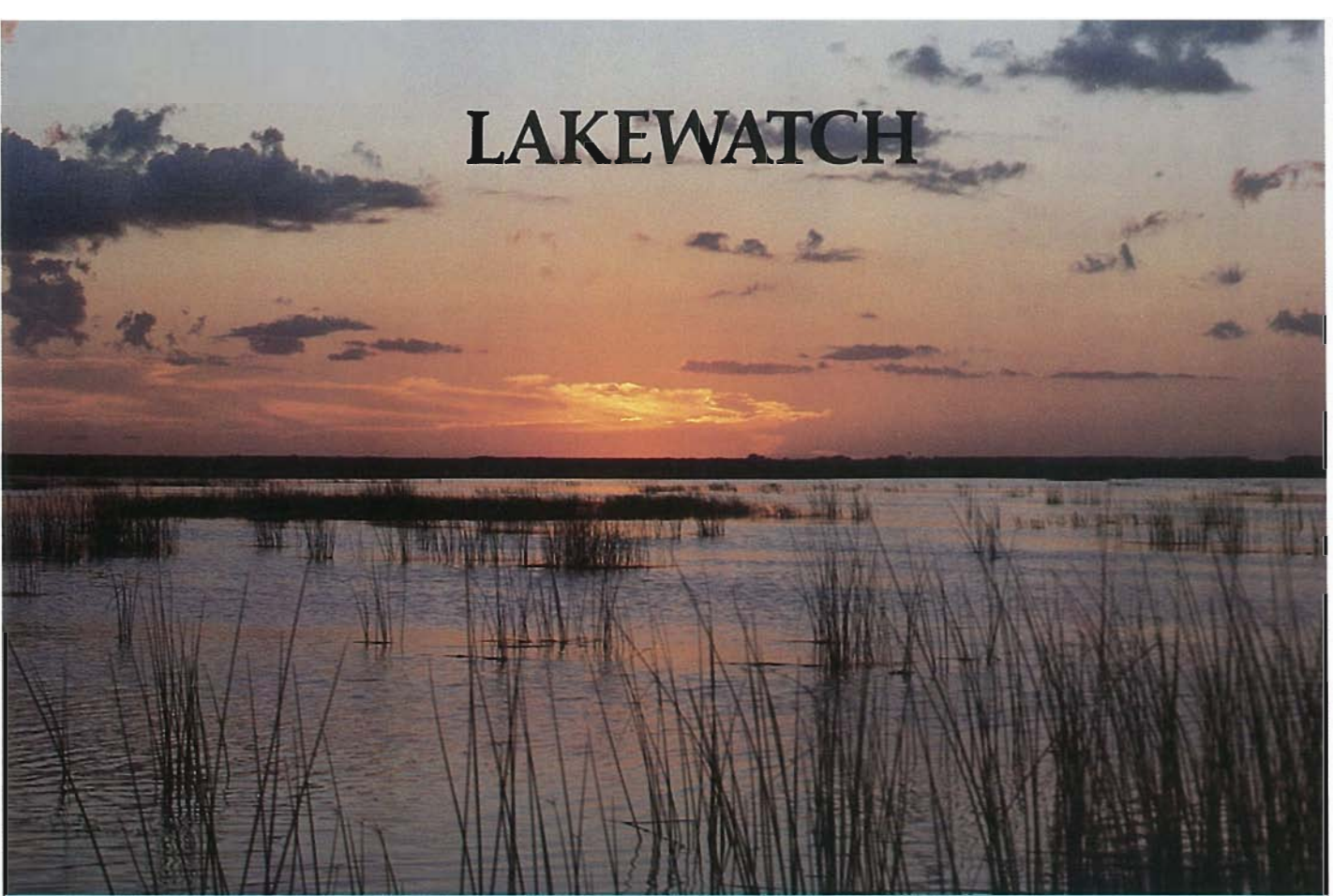


Photo by Mike Bodle

**By
Sandy Fisher, Lakewatch
Field Director
University of Florida
Gainesville, Florida**

From the sound of Billy's voice on the phone, I could tell he was a young teenager. That concerned me, because I needed volunteers for Florida LAKEWATCH who would make a commitment to work with the program month after month, year after year. When I asked Billy about his intentions, he paused a moment and said, "Well, Ma'am, my great granddad owned this property on the lake. He left it to me and I plan to be buried here." Billy has been in the program ever since. His attitude is typical of the way people feel about *their* "lake places." One volunteer has over 100 years worth of pictures of *his* lake, which was named after his mother. A retired doctor built a transit so he could record the changing water levels during the past 20 years.

Article reprinted with permission from "Florida Wildlife," Jan. 1991.

Lakes are special to those people who live there. Lakefront living means watching the bass bed along your shoreline, seeing the awkwardly regal walk of the wading birds stalking fish, watching osprey dive after a glint of silver, being awed by the beauty of the sunsets across the water, teaching kids to water ski, and taking photographs of the youngsters when the fish they catch are almost as big as the kids.

I live on a lake, so I know. And I have been monitoring my lake's water quality through the Florida LAKEWATCH Program for almost two years. The program began unofficially in the mid-1980s under the direction of Dr. Dan Canfield, Professor of Limnology at the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida. While traveling around the state gathering data on lakes, Dr. Canfield saw the need for regularly scheduled data collection on the thousands of Florida lakes that were not being monitored by any agency. Knowing that the cost of having professionals do the job would be prohibitive and that other states have had successful citizen monitoring programs, Dr. Canfield

began by training lake residents informally by himself.

Volunteers in Florida LAKEWATCH are taught how to take "grab samples" of surface water. Some of this water is frozen and later sent to the IFAS labs for measurement of nitrogen and phosphorus contents. Nitrogen and phosphorus are important because they fertilize plant growth (including algae growth) in lakes. The rest of the sample water is filtered, and the filter paper collects the suspended solids. These are later analyzed to find out how much algae is in the water. Since algae is the base of the food chain, it affects the numbers and sizes of fish and wildlife the lake can support. Volunteers also learn to use a Secchi Disk, an instrument that looks like a frisbee, and gives an indication of the clarity of the lake water.

The volunteer gets information on the basic lake management techniques and, after a year of taking monthly samples, also receives a report on trends and changes in his lake.

While in the program, the volunteer has access to experts at IFAS who can answer questions about

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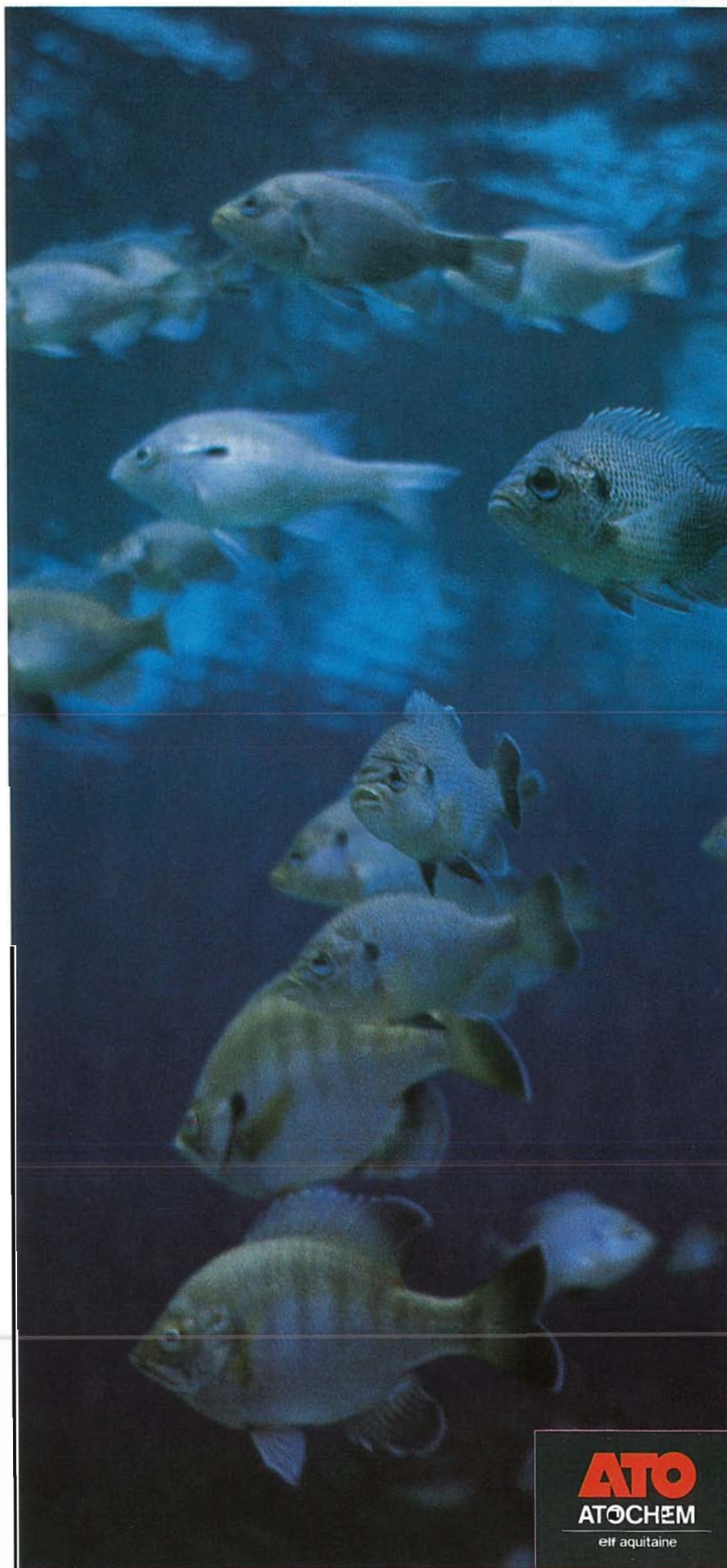
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specific problems. So far the range of inquiries has been impressive. People have asked about the identification of specific plants, the oil scum on their boat's water line, the suds that form along the shore, the source of reddish water after a rain, how to get rid of "punk" trees, controlling snakes, causes of fish kills, lawn irrigation and fertilization techniques, stormwater management, registering eagles they see — and the list goes on. Instead of getting general information about lakes, people in Florida LAKEWATCH can get specific information about their lake and its unique problems.

Having specific information that documents trends in their lakes has made residents more effective in communicating with regulatory agencies. For example, LAKEWATCH data gathered on Lake Santa Fe in Alachua County show that the algae levels have quadrupled in the past eight months after having remained rather steady since 1986. This information will be used by the homeowners association to enlist the aid of the Suwannee River Water Management District.

Florida's tremendous population growth means tremendous impact on the state's 7,700 lakes. The Putnam County Board of Realtors reported that lakefront property makes up 80 percent of their sales. It's a race against time. Water quality in many Florida lakes is changing rapidly with the influx of lakefront residents. Baseline data should be gathered before the opportunity is lost.

Unfortunately, many people who purchase lakefront property do not know that their everyday actions may have a direct effect on water quality. A lake is not a swimming pool; it is a living, breathing organism with many interrelated parts. Besides water, a lake has many types of plants, fish, birds, insects, snakes, alligators and other wildlife. If one part of a lake's ecosystem is altered, it will affect another part, whether we see the consequences or not.

For example, to control plants that are sometimes perceived as a problem, herbicides, bio-controls, or harvesting techniques can be used. In some lakes this works fine.



LAKEWATCH volunteers are provided with a two-hour session on their lake and given a sampling kit and an instruction booklet.

In others, if too many plants are removed, algae often proliferate and the water becomes "pea-soup" green. Lake residents aren't always aware that this might be one of the consequences of their actions, and

ironically, often find themselves attempting to replant the lake's vegetation.

In Florida LAKEWATCH lake residents can learn what their range of options is and the consequences

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of each one. They can make informed decisions based on the specifics of their lake.

Since everyone agrees on the need for environmental information, the LAKEWATCH Program has proved to be an exciting and unifying catalyst for homeowners associations that are springing up around the state.

By donating about an hour of their time each month, the use of their boats, and transportation of the samples twice a year to Gainesville, lake residents are accomplishing what would otherwise cost thousands of dollars per lake. It is truly effective volunteerism at its best.

If you are interested in joining, send your name, address, phone number, lake name and county name to: Ms. Sandy Fisher, Florida LAKEWATCH, Department of Fisheries and Aquaculture, 7922 NW 71st Street, Gainesville, FL, 32306. Or, call (904) 392-9613.



Florida LAKEWATCH helps the people who care most about a lake look after it. Here, LAKEWATCH volunteers monitor nutrient levels and water quality.

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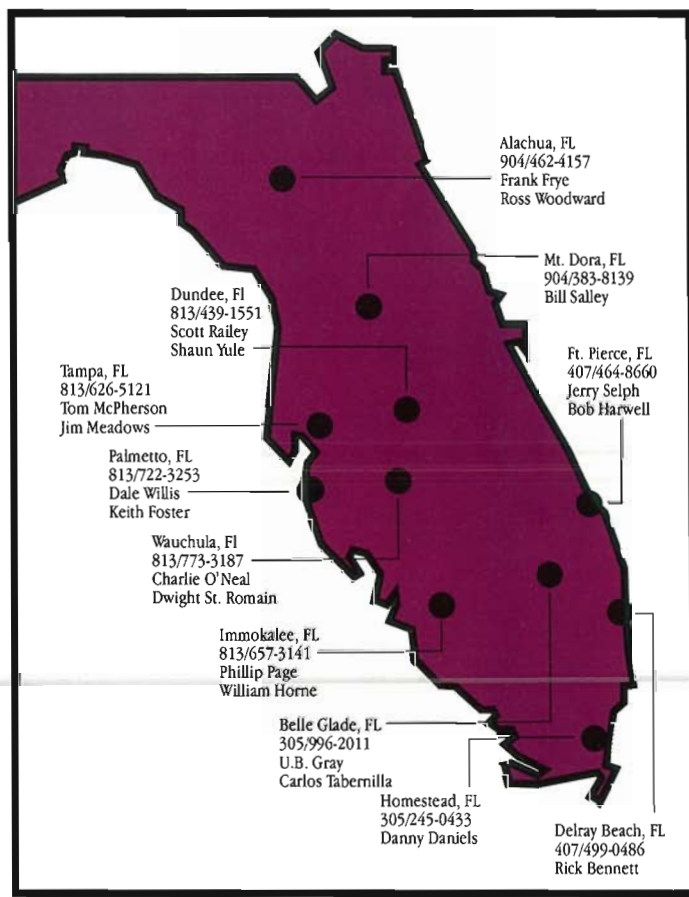
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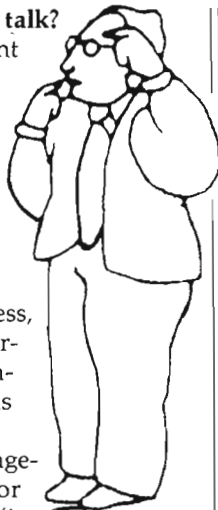


Handy Hints on How (and How Not) to Give a Talk

By
Alison (do-as-I-say-not-as-I-do) Fox
 Center for Aquatic Plants
 University of Florida

Who should give a talk?

Despite a confident appearance that many public-speakers manage to display, there are very few people who can stand up in front of an audience without some preceding nervousness, that occasionally verges on a gut-wrenching panic. While this may not sound like much of an encouragement to volunteer for such an experience (i.e., the FAPMS Applicator competition), the point is that with sufficient preparation almost anybody can reduce these anxieties and give a successful talk.



When to give a talk?

Anybody who wants to advance within an organization, whether at work or in a social or sporting environment, sooner or later is likely to be called upon to speak "publicly." Many people will happily hold forth to work-mates or fishing-buddies, but dread the idea of giving a more structured talk to a larger group of their peers. Since public speaking becomes much easier with experience, it's as well to bite-the-bullet and get some practice early.

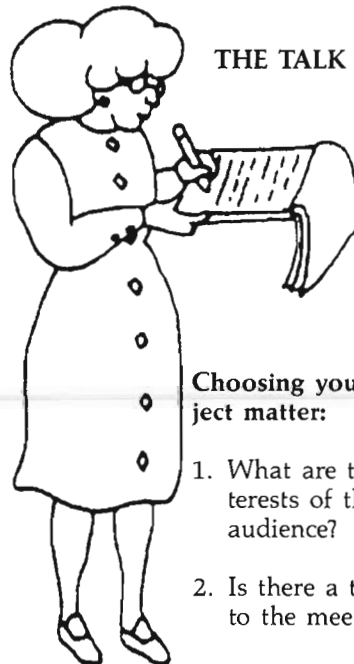
The following article is intended

as a guide to approaching that first talk, wherever it may be. *Details of how to enter the FAPMS Applicator Paper competition (which is a good place to start your speaking career) will appear elsewhere in this issue.*

The secrets to successful public speaking.

Of course, there are no secrets at all, but simply some common sense that is too frequently forgotten or put-off.

**PREPARE YOUR MATERIAL
 PREPARE YOURSELF
 MAKE LIFE EASY FOR THE
 AUDIENCE**



THE TALK

Choosing your subject matter:

1. What are the interests of the audience?
2. Is there a theme to the meeting

that you should follow?

3. How long will you have to speak? (The shorter the period, the simpler should be your subject).

Answers to these questions should be provided by the program chairman, or someone who has been to such a meeting before.

4. Who are you representing? Are you presenting a point of view of which your organization approves? (*If not, check that this will be acceptable, or that you have another job lined-up!*)
5. Most importantly, choose something in which **you** are interested. Speakers who are enthusiastic about their subjects are much easier and more memorable to listen to. You will also have more incentive to prepare the talk if you **want** others to share your interests.

Structuring the talk:

1. **Introduction.** Starting off with simple general comments either about yourself (try not to repeat how the moderator may have introduced you) or your subject matter, will help you to relax. This is the time to explain how your talk is relevant to the

meeting/session/audience. If that is not clear people quickly lose interest.

2. **Ending.** A good ending provides a clear cue to the moderator and audience for applause etc. rather than an embarrassed silence. Examples include:

briefly, sum up the main points made in your talk;

outline future projects needed or planned;

acknowledge your colleagues/ employer;

use a slide of a sunset/your agency's logo etc.

Once you have indicated the end is near, be brief; it is very frustrating when a speaker says "...and finally..." only to continue for another 10 minutes!

3. **Questions.** Many people worry about these more than giving the

talk. If you do not want to accept questions from the floor at the end of your talk, discuss this with your moderator before your session. You, or they, can then



explain that you would prefer to receive questions and comments personally after the session.

Alternatively, arrange with your colleagues or supervisor (*don't throw this at them unexpectedly*) to help deal with questions from the floor.

4. **Humor.** Never as easy at 9am in front of 400 tired faces as it was last night in the bar. Humor is always good in a talk when it works, but can severely dent your confidence if it doesn't. Some people can get away with telling actual (hopefully relevant) jokes, but not many. Humorous slides or comments are much easier, and less disappointing if not appreciated, if used in moderation. Common mishaps with which the audience can sympathize are often amusing.

Be sensitive to the composition of the audience. It should be common sense to avoid being sexist, racist, etc., but sometimes there is a fine line between what is and isn't acceptable to the whole audience. Similarly, only pick upon individuals who can take a joke (*especially if it's your*

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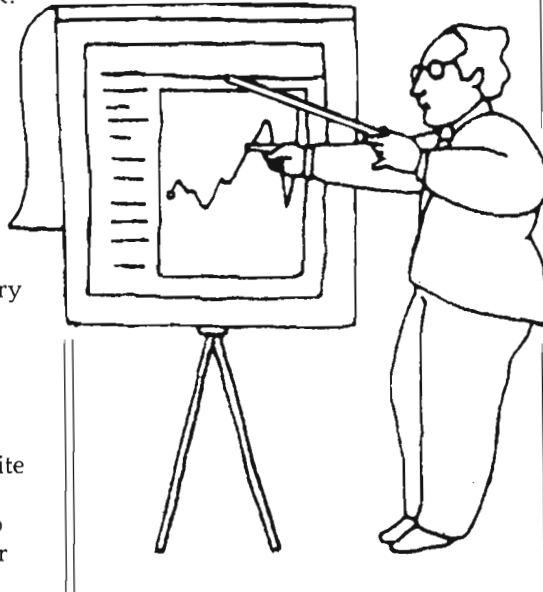
Phone (813) 533-8882

boss) and who won't feel humiliated by humorous comments or pictures about them. None of the important or interesting things you had to say will be remembered by anyone who felt offended by even the briefest comment in your talk.

VISUAL AIDS

Quality.

1. Try to use only one type of visual aid (e.g. slides, overhead, video, etc.). If you need to use two types, try to only change over once and have someone ready to help to do that smoothly.
2. Make sure slides, etc. can be clearly seen or read from quite a distance. Use a large bold type-face for writing with no more than 12-16 numbers per slide.



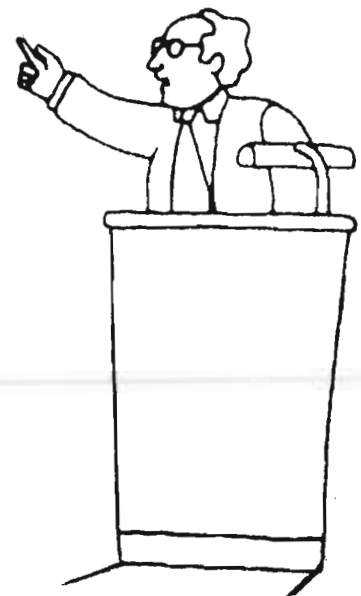
3. Make tables and text simple and brief. A complex table may show-off how much work you've done but is pointless if the audience cannot understand or be bothered to read it.

4. White (or light colored) lettering on a dark background shows up best on slides. Avoid dark picture slides as the room may not be totally dark and these will not show up. Check slides for visibility on a large screen and look in the background for any embarrassing activities that you may not have noticed when you took the picture!

5. If the whole of the slide must be seen, use a horizontal format because on some screens the top and bottom may be chopped off vertical format ones.
6. Pictures of logos, product labels, etc. are most interesting and often easier to get, than type-written slides.

Quantity.

7. Slides can be a useful prompt, rather than notes, for your talk but don't try to fit too many in and race through them. You should be so familiar with the slides by the time of your talk that it is tempting to rush them but the audience needs plenty of time to work out what each one is about. Expect to include about 1-1.5 slides per minute, so that a 12 minute talk would have 12-18 slides.



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8. Avoid loading in many slides of similar examples. They may all relate a different story to you but one canal looks pretty much like another to the audience, especially after the fifteenth example. Choose one or two diverse examples, and summarize your other results in a table or list.
9. You **do not** have to pad-out your talk with repetitive slides to fill your allotted time. There usually are enough long-winded speakers that the moderator will be thankful for a short, interesting talk.

PREPARING YOURSELF

Practicing:

You do not need to be able to recite your talk like a parrot (that gets boring for everybody) but it will become easier with practice. **Everybody** needs to practice, however experienced they are at public speaking, so that their talk, and the transition between slides, will flow smoothly. The other important reason for practicing is to build your confidence. **Remember**, you are the only person who knows what the next slide will be, and you probably know more on the subject about which you are speaking than anyone else in the room.

Start practicing with a colleague, or at home, with someone you can trust to tactfully suggest improvements. Try it on your supervisor (who is most likely to notice any technical errors) and then, if possible, practice a more formal presentation in front of a group of colleagues. After all this, talking to a sea of indistinguishable faces will seem much less daunting than was talking to the folks you work with.



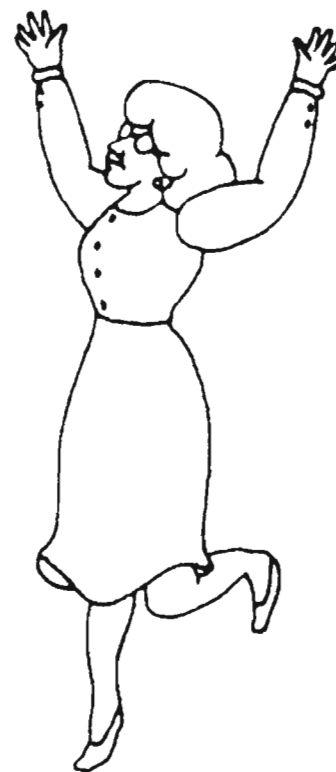
Timing:

Always plan to run under, rather than over, your allotted time. Thinking you can speed up to get everything in never works. Many people speak more slowly or have more

pauses if they are nervous. Practice with a watch (that can be seen in dim light) so that you can tell if you need to change your pace.

Notes etc.:

1. Sufficient practices and a comprehensive collection of slides may alleviate the need for notes at all.
2. Sometimes, however, names, dates and numbers that you could recite in your sleep, evaporate once you're behind the podium. Have such data handy, just in case.
3. If you prefer to have notes with you, try to avoid reading them. Highlight key information that you may need to refer to so that it is easy to find without reading the text.
4. Cards are usually much easier to handle than sheets of paper, and are less obtrusive when you turn



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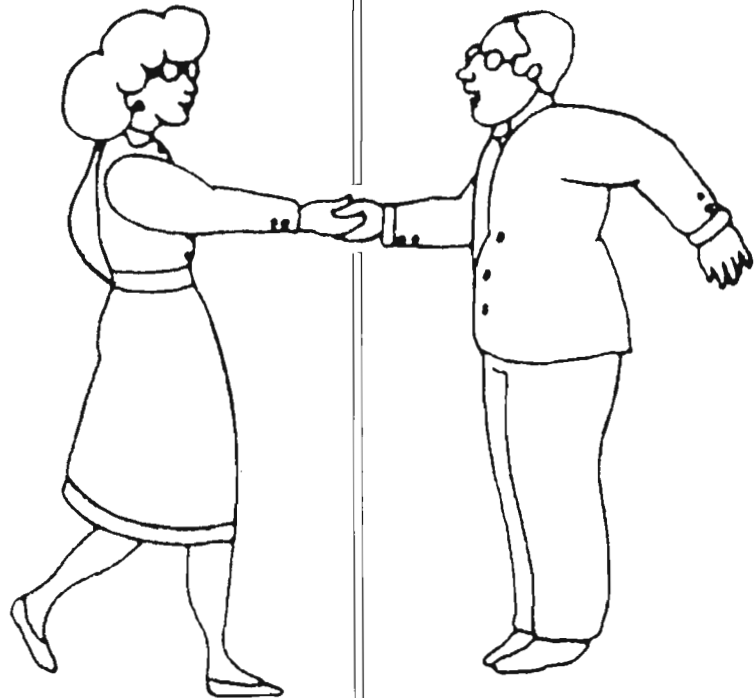
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them over. Choose, and practice with, whichever **you** prefer.

Delivery:

1. If you are really brave, having someone video-tape a practice run will help you to become aware of your delivery. Most of us hate to hear just our voice on tape, so this technique is not to be recommended if it's only going to make you more self-conscious.
2. Obviously, a clear voice is essential. Find out in advance how best to use the microphone and try not to keep moving too close and far away from a fixed one. Be aware of any tendencies you may have to drop your voice or mumble. Ensure that you don't speak too fast, especially if anxious.
3. Try to keep your hands under control. A little movement is fine but wild gestures can become comic and distracting. If



you tend to put your hands in your pockets, remove all coins and keys from them. You may not notice the jangling noise but

the front few rows may start hearing nothing else.

4. Pacing back and forth can become distracting, especially if the audience is more interested in seeing if you trip up, or fall off the stage. A relaxed stance is ideal, and the podium can provide useful support, but try to avoid leaning on it and giving the impression that you've spent too many evenings propping up bars.

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ON THE BIG DAY

1. **Appearance.** Dress appropriately for the meeting and whomever you are representing. Most importantly, feel comfortable and try to practice in those clothes. You won't be conscious of your



repeated pulling at a tight collar once you are speaking but the audience will be fascinated by it.

2. **Your moderator.** Make yourself known to the moderator of your session so that they know you are ready and can warn you of any program changes. Arrange with them any special needs for visual aids, and who will be responsible for dimming the lights. Let them know where you will be sitting, which should be near the podium. Rushing up to the stage from the far side of the room waste time and can lead to some pretty heavy breathing.
3. **Familiarity with equipment.** Before your session try out all the equipment; microphones, remote controls for slides, pointers, light switches, etc. Fumbling with these things can not only waste time and put you off your stride but a pointer illuminating your stomach instead of the screen may cause inappropriate laughter! Try to replace equipment after your talk so that the next speaker can find it. Run through your slides once more to ensure they are still in the correct order and orientation.

This all may seem a lot to remember but it really all boils down to those first three "secrets" and common sense. So get up there and do your best. When you hear that applause, it will all seem worthwhile. Who knows? You may even find yourself looking forward to the next time!



FAPMS Applicators' Paper Competition

If the preceding article on "How to give a talk" didn't fill you with wild enthusiasm to volunteer for a paper at the 1991 FAPMS Annual meeting, then perhaps a reminder of the cash prize for the best Applicator's paper will help. This contest is run every year and provides a good incentive for applicators to talk about their work and aquatic interests. Such papers are an essential and enjoyable part of these meetings.

This year, to make life easier for the contestants and judges, a specific, but simple, set of criteria based on the content and delivery of each talk will be evaluated. Any **QUESTIONS** you may choose to answer **WILL NOT BE INCLUDED**. Arrange with your moderator if you would prefer not to face questions from the floor.

When you submit your paper-title to the Program chairman (Mike Hulon) indicate if you are eligible (supervisors who do not work largely in the field are not) and wish to enter the contest. You will be sent a copy of the scoring sheets by which you talk will be judged so that you know what will be assessed. Aim for a concise, informative paper that is relevant to the meeting, and which you can clearly deliver.

After the results are announced, each contestant will receive a copy of the judges' comments, which will be confidential within the judging panel. You are encouraged to discuss these with a designated judge and/or your supervisor so that you will know what your strengths are and, maybe, how to win (again) next time.

Call for Papers — FAPMS 1991 Annual Meeting

October 14-17, 1991 are the dates. Daytona Beach Ramada Inn Surfside (formerly Holiday Inn Surfside) is the place. And now is the time to submit your paper for the 15th Annual FAPMS Meeting.

DEADLINE FOR SUBMISSION IS JULY 31, 1991.

Title: _____

Authors: _____

Organization: _____

Address: _____

Telephone: _____

Abstract (75 words or less): _____

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AQUAVINE



JUST THINKING OUT LOUD

Recent field research and technology advances have made maintenance control of *Hydrilla verticillata* a workable and affordable reality. Yet, aquatic plant population changes accompanying recent successful hydrilla control in the Withlacoochee River, Pasco County, and Lake Kissimmee, Osceola County are food for thought. In both cases, other exotic aquatic plants have expanded following hydrilla controlled with fluridone (SONAR herbicide brand name). This demonstrates that this control method can selectively control hydrilla. Neither exotic species poses a serious problem now, but could they expand in the future?

For several years only a small infestation of hygrophila (*Hygrophila polysperma*) was found in the Withlacoochee. Now, hygrophila can be found along several of the fifteen newly-opened miles of river. After hydrilla treatments in Lake Kissimmee, *Egeria densa* expanded. In both cases, navigation improved, native aquatic plants returned, and the hygrophila and egeria are minor components of a more diverse plant community. But, could the exotics expand to become major weeds? Hygrophila has repeatedly shown tremendous resistance to treatments that control hydrilla and other aquatic weeds. Tremendous technology advances now provide tools for effective hydrilla management when funding is adequate. Could hydrilla come to be known as a wimpy weed? If so, what plants would then be the big weed problems? All that this seems to show that is that it's critical to remain continually alert and support advancing technology and research.

UPCOMING MEETINGS

July 14-17

Aquatic Plant Management Society annual meeting, Hyatt Regency Dearborn, Dearborn, Michigan. For more information contact William Rushing, P.O. Box 2695, Washington, DC 20013-2695.

August 4-7

Florida Entomological Society 74th annual meeting, Ritz Carlton Hotel, Naples, Florida. For more information contact David Williams at (904) 374-5982.

November 11-16

11th Annual International Symposium, North American Lake Management Society, Sheraton Denver Tech Center, Denver, CO. For information contact NALMS, Lorraine Duncan, 1 Progress Road, Box 27, Alachua, FL 32615-9536. Phone: (904) 462-2554.

October 25-26

Indiana Academy of Science international symposium on control and impacts of exotic plants and animals, University Place Conference Center, Indianapolis. For information contact Bill McKnight, Indiana State Museum, 202 North Alabama, Indianapolis, IN 46204. Phone: (317) 232-8178.

CATCLAW MIMOSA (*MIMOSA PIGRA*) UPDATE

Call it catclaw mimosa. Call it the giant sensitive plant. Call it *Mimosa pigra* var. *pigra*. But whatever you call it keep on the



Mimosa pigra seeds, leaves and flowers.

look out for it. Mimosa is still causing concern in South and Central Florida. Although contained within three known locations, a mild winter with ample rainfall has resulted in large numbers of new plants. The Florida Department of Natural Resources has entered into a contract with Biological Research Associates, Inc. to continue mimosa treatments at the Sebring, Loxahatchee River, and St. Lucie River infestations.

Awareness of the threat posed by *Mimosa pigra* continues to grow. It is listed as a U.S. Department of Agriculture federal noxious weed and as a prohibited aquatic plant by the Florida DNR. If anyone sees this plant running amok in previously unreported sites please contact the nearest DNR Aquatic Plant Bureau regional biologist or Rob Kipker in the Tallahassee office.

1991 FAPMS PLANT MANAGER (APPLICATOR) OF THE YEAR AND DISTINGUISHED SERVICE AWARD NOMINATIONS

A year has passed and 1990's winner, Terry Warson, is prepared to pass the sash for Aquatic Plant Manager of the Year to the next winner. But there have to be nominations! Sit back for a minute and remember... who was it that got the work done anyway even though it was a record cold January day? Who took care of the airboat tour your boss' boss called about that had to be organized right away for those Tallahassee big wigs? Who keeps their equipment so clean you can (and do) always eat off the airboat prop? Who keeps your clients' waterways looking so great that they always renew their contracts? Think about it and then write it down and mail it or FAX it to:

Wayne Jipsen, Awards Committee Chairman

7900 Baymeadows Circle East, #59

Jacksonville, FL 32256

Phone: (904) 791-2219

FAX: (904) 791-3696

Also, think about any truly exceptional feats which occurred during the last year. The FAPMS Distinguished Service Award is

presented to recognize acts which may involve outstanding heroism, civic responsibility, environmental or other actions which save lives, prevent serious environmental damage or generally make us feel warm and fuzzy inside. But seriously, this award has been given when lives were saved because FAPMS members acted wisely and bravely in an emergency. If you know of FAPMS members whose acts were truly deserving of recognition and acclaim, write 'em up and submit 'em to Wayne.

Also, keep your cameras with you in the field so you'll have those award winning photos ready for October's FAPMS meeting. Cash awards are presented to winners in two categories: Operations and Aquatic scenes/Wildlife.

Finally, Wayne is accepting volunteers to participate in the judging of all of the above contests. Call him if you're interested.

TWO NEW IFAS VIDEOS AVAILABLE

"How to Determine Areas and Amount of Aquatic Herbicide to Use," is a new video which outlines the math calculations needed for accurate herbicide application and calibration. It is a companion to Chapter 9 of the new Training and Reference Manual for Aquatic Applicators.

Thirteen floating and floating-leaved aquatic plants are identified in the first of four planned aquatic plant identification videos. The entire series will identify eighty species and is written in everyday language for a general audience.

Both videos are available for \$10.60 each (\$10.00 for non-Florida residents) and the aquatic training manual is available for \$7.00. All are ordered from:

IFAS Publications Office
IFAS Bldg. 664
University of Florida
Gainesville, FL 32311-0001

AQUATIC PLANT CULTURE AND PRODUCTION CLASS OFFERED

"Culture and Production of Aquatic Plants," will be taught by Dr. David L. Sutton at the Univer-

sity of Florida Fort Lauderdale Research Center in the fall semester beginning August 26, 1991. The class covers basics of aquatic plant anatomy, physiology, identification, and ecology along with lab culture and production of native and aquarium plants, aquatic plant nutritional needs, aquatic weed control, permitting, and aspects of lake restoration and mitigation.

The class is part of the Fort Lauderdale Center's Ornamental Horticulture Bachelor of Science program most courses of which are taught one evening or Saturday each week of the 16-week semester. This program has allowed many South Florida horticulturalists to continue their full-time work and earn B.S. degrees without having to relocate to the Gainesville Univ. of Fla. campus. Individuals interested in professional advancement, but not seeking a degree, may take courses for credit or audit. More information can be requested from:

Dr. Stephen Verkade
Univ. of Florida-IFAS
3205 College Avenue
Fort Lauderdale, FL 33314
Phone: (305) 475-8990.

JOB OPENING

Florida Environmental Consultants, Inc., have an opening in Palatka for an experienced aquatic plant control applicator. The individual should have (or be willing to get) a Florida Department of Agriculture commercial aquatic plant applicator license and have airboat operation experience. The position has a highly competitive salary. Information available from Beth Layer. Phone: (800) 342-2580.

CORRECTION

Photos showing treated and untreated spatterdock were reversed in the March 1991 "Aquatics" article, "The Effect of 2,4-D Amine on the Growth of Spatterdock," by C. Hanlon and W. Haller. Any confusion caused by this exchange is regretted.



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Fresno, CA 93717
(813) 752-1177

Van Waters and
Rogers, Inc.
2256 Junction Avenue
San Jose, CA 95131
(408) 435-8700

Westchem Agricultural
Chemicals, Inc.
1505 Lockwood Road
P.O. Box 31772
Billings, MT 59107-1772
(406) 252-3834

Western Exterminator
Company
d/b/a Target Specialty
Products Company
17710 Studebaker Road
P.O. Box 1117
Cerritos, CA 90701
(213) 773-8912

Wilbur-Ellis Company
3145 NW Yeon Ave.
P.O. Box 8038
Portland, OR 97208
(503) 227-2525



Rodeo clears the way to better water management.

No other herbicide offers such effective performance.

You can clear away more than 170 emerged grasses, broadleaf weeds and brush species with Rodeo® herbicide. And once they're gone, they won't grow back. That's because Rodeo moves through the entire plant and kills it – roots and all.

Some herbicides provide only a temporary burndown. And mechanical efforts are also ineffective at providing lasting control. With Rodeo, however, maintenance becomes an economical spot treatment that takes minimal time.

There's no longer any reason for wetland sites or ditchbanks to become



eyesores, health hazards or unsuitable as wildlife habitat. Rodeo is an effective, economical way to care for these areas. Just apply Rodeo a half mile or farther from a potable water intake. When this is done, treated water has no use restrictions.

Plus, with no residual soil activity, Rodeo won't leach into non-target areas. Use it with confidence to treat vegetation in and around lakes, rivers, streams, ponds, seeps, irrigation and drainage ditches, canals and reservoirs.

It's clear to see why you should use Rodeo. See adjacent list for your agent.

ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR RODEO HERBICIDE.

Run a cleaner operation with DIQUAT Aquatic Herbicide.

If undesirable aquatic weeds have you in troubled waters, make them disappear with DIQUAT Herbicide.

DIQUAT is a highly active, water soluble contact herbicide that controls a broad spectrum of floating, submerged and marginal aquatic weeds, like hydrilla, salvinia, water hyacinth and cattails.

Not only is DIQUAT fast-acting and



biologically inactivated when absorbed through soil, it has no fishing restrictions.

So don't get tangled up with a bad crowd. Put them out of the picture with DIQUAT.

DIQUAT Herbicide H/A

Avoid accidents. For safety, read the entire label including precautions. Use all chemicals only as directed. Copyright © 1990 Valent U.S.A. Corporation. All rights reserved.



**DON'T
ASSOCIATE WITH
POND SCUM.**