#### LETTERS TO THE EDITOR

### Keep It Up

I just completed reading the article "How Much Must Be Spent For Turfgrass Irrigation" by Dr. William W. Wood (Feb. WTT, p. 14) and was so impressed with the approach that I felt committed to write and acknowledge same. There is no question that this type of approach has long been over-due in the field of parks and recreation. As a result, you can well understand that I was impressed with the information contained in the article.

I would only encourage you and your staff to continue to seek out individuals who are willing to provide direction in obtaining data that provides a realistic approach in the establishment for the expenditure of dollars. The article points out how negligent we have been over the years in not collecting data that provides a means to honestly substantiate dollar costs. It further emphasizes our responsibility to work and solicit information from the user as to what they in turn are willing to pay.

I look forward to reading fu-

ture articles containing this same approach and concept. John P. Perkovich, director of parks and recreation, City of South St. Paul, Minn.

#### **Answer To Tules**

As an agronomy student at California State Polytechnic University, Pomona, I look forward to my issue of WEEDS TREES AND TURF each month. I find the articles to me both timely and informative.

In answer to a letter in the November issue regarding what tules are and how to get rid of them, I have found that they are an aquatic weed, generally ditchbank or pondside in growth characteristic. To control, use a combination of dalapon with 2,4-D at a rate of 10 pounds of 85 percent dalapon plus two pounds 2,4-D ester per acre. This control should be followed as soon as all annual weeds have germinated in the spring.

The above information came from the Oregon Weed Control Handbook. Gary Kaplan, Arleta, California.

## TIME TO RENEW: Your Renewal Card Is Bound In Above

We need your okay to continue sending you WEEDS TREES AND TURF magazine on a *free* basis. In fact, we must have it.

Subscriptions are free to bonafide members of the industry such as yourself. If you operate commercially in the "Green Industry," you qualify. Please check the type business you are engaged in and return the post-paid card to us. We'd appreciate your prompt reply.

We maintain circulation at 35,200. No additional magazines are mailed except at the published rate of \$10 per year in the U.S. and Canada.

MAY WE HEAR FROM YOU TODAY? Simply sign and check the card and drop it in the mail. We want your continued support.

Thank you,

Arthur V. Edwards, Publisher

(This renewal notice is a requirement of our national auditing service to verify that you are a member of the industry and that you wish to receive the magazine).



Ship \_\_\_\_\_\_ cases (12 Aerosol Containers per case) @ \$15.60 per case Prices f.o.b. Boston less normal trade discounts

For More Details Circle (105) on Reply Card

# NEW... Scotts Victa... another tough, healthy, fast rooting sod from Scotts.

Scotts Victa is a new improved variety of Kentucky bluegrass that produces compact, robust sod with outstanding disease resistance. Victa yields more healthy, high quality sod than most other bluegrasses because it's sturdier, resists leaf spot, stripe smut, rust, dollar spot, and mildew, and germinates quickly and vigorously. Low growing, Victa produces dense, dark green, fast developing turf that adapts well to various mowing heights. Victa, like Windsor Kentucky Bluegrass, responds beautifully to fertilizers, and performs consistently well under varied environmental conditions. These same characteristics are found in hardy Victa and Windsor sod grown straight or in the following blends.

■ Victa Blend 635–Combines Victa and Windsor Kentucky Bluegrasses for top notch turf in sunny or lightly shaded areas. ■ Victa Blend 640–Combines the features of Victa and Nugget Kentucky Bluegrasses for use in sunny and light to moderately shaded areas.

■ Victa Blend 532-Combines Victa and Nugget Kentucky Bluegrasses with C-26 Hard Fescue to produce standout turf in light to moderately shaded areas.

■ Windsor / Newport – Combines Windsor Kentucky Bluegrass, a proven variety, and Newport, a variety that does quite well in moderately warm and dry climates.

■ Victa/Baron Blend—Combines the characteristics of these two new Kentucky Bluegrasses with improved disease resistance.

■ Victa/Merion Blend-Especially blended for sod production, shows excellent establishment, dark green color and pleasing blade texture, good fertilizer response and improved disease resistance.

# Victa and Windsor, proven in years of rigid testing, are available from these sod growers, coast to coast:

CALIFORNIA Cal Turf, Camarillo 805/485-6757 The Grass Farm, Morgan Hills 408/226-977 Nunes Turf Grass Nursery, Patterson 209/892-8776 **COLORADO** Big John's Sod Farms, Inc., Pueblo 303/545-5033 Big Valley Sod Farms, Inc., Calhan 303/683-2599 Denver Turf, Inc., Keenesburg 303/732-4802 Emerald Bluegrass Sod Farm, Platteville 303/785-2819 Jim Gardner Turf Farm, Colorado Springs 303/632-8153 Green Acres Turf Farm, Henderson 303/288-4969 Green Valley Turf Co., Littleton 303/288-4964 Northern Colorado Sod, Boulder 303/532-2597 John Palombo, Commerce City 303/288-8460 Richlawn Turf Farm, Denver 303/771-5611 Scien-Turf-Ic Sod Farms, Inc., Henderson 303/288-6695 Turf, Inc., Grand Junction 303/243-4767 Variety Ldspg. & Turf Farm, Engelwood 303/794-4955 West Turf Farms, Inc., Fountain 303/382-5626

#### **ILLINOIS**

Beaver Run Sod Farm, Poplar Grove 815/765-2288 Evergreen Sod Farm, Peotone 312/258-6600 Greenview Nursery, Peoria 309/243-5115 H. & E. Sod Farm, Tinley Park 312/798-2210 Harvard Sod Nursery, Skokie 312/334-5353 D. A. Hoerr Nursery, Peoria 309/691-4561 Wiewel Sod Farm, Quincy 217/222-5966

INDIANA Green Acres Sod Farm, Columbia City 219/693-3750 Si's Welding, Excav. & Turf, Inc., Jasper 812/482-1210

KANSAS Brown's Country Nursery, Goddard 316/794-2440 Cranmer Grass Nursery, Wichita 316/943-5676

MARYLAND Dayspring Farm, Germantown 301/428-3422 Summit Hall Turf Farm, Gaithersburg 301/948-2900 Turf Center, Inc., Silver Springs 301/946-3767

MICHIGAN ABC, Lansing 517/372-2310 Beck Sod Farm, Palms 517/864-3549 Belle River Sod Farm, Warren 313/759-5252 Bluegrass Sod Farms, Inc., West Olive 616/842-4972 del Gaudio Sod Farm, Cohoctah 517/546-3569 Halmich Sod Farms, Brown City, and E. Lansing 313/346-2180 Northland Sod Farms, Pinckney 313/784-5347 Rogala Sod Farm, Romeo 313/784-5443

MISSOURI Keeven Sod Farm, O'Fallon 314/272-5151 Princeton Turf, Kansas City 816/741-4800 Sac Valley Sod Farms, Inc., Springfield 417/756-2790

MONTANA Domingo Sobrepena, Bozeman 406/586-5055

NEBRASKA Grassland Farms, Inc., Hastings 402/463-4040 Hansen Sod, Kearney 308/234-3515 Hendrick's Sod, Lincoln 402/477-5473 Loveland Lawns, Omaha 402/391-2569 Turf World, Omaha 402/556-8784 Wattles Sod Co., Inc., Omaha 402/342-3904

NEVADA Unruh Turf Farms, Minden 702/832-4247

NEW HAMPSHIRE Gold Star Sod Farms, Inc., W. Franklin 617/861-1111 Kimball Farm, Exeter 603/772-3858

NEW JERSEY Clarksville Sod Farm, Princeton 609/896-0336 Pine Island Turf Farm, Sussex 201/875-5125

NEW MEXICO Green Chapparrel Ranch, Moriarty 505/832-4247

NEW YORK Batavia Turf Farms, Batavia 716/343-2828 Beresford Farms, Delanson 518/895-2345 Lakeside Sod Supply, Clarence Center 716/741-2877

OHIO Able Landscape Service, Dayton 513/426-4474 Beauty Turf Nursery, Lebanon 513/424-2052 Buckeye Bluegrass, Ostrander 614/666-2082 Cincinnati Turfgrass Nsy., Inc., Cincinnati 513/683-3505 Culler Sod Farm, Medina 216/723-7264 E.R.I.C., Circleville 614/548-6497 Eastside Nursery, Columbus 614/837-5566 Paul Florence Turfgrass, Marysville 513/642-7487 Green Velvet Sod Farms, Dayton 513/848-2501 Sands Turf Farm, Troy 513/335-4731 Utica Peat & Sod, Utica 614/745-2415 Medina Sod Farm, Seville 216/769-2555

PENNSYLVANIA Comly's Turf Farms, Wycombe 215/598-7492 Sporting Valley Turf Farm, Manheim 717/665-5586 Waltz Turf Farm, Limerick 215/489-7839 Alex Rohoza, Sewickley 412/266-4138 Vic Nor Sod Farms, Connoquenessing 412/789-7115

RHODE ISLAND Kingston Turf Farm, W. Kingston 401/789-0630

UTAH Forest Hills Nursery, Salt Lake City 801/277-2664

VIRGINIA Virginia Turfgrass, Inc., Richmond 703/353-7952

WASHINGTON Emerald Turf Grass Farms, Inc., Sumner 206/863-1003

WISCONSIN ABW Sod Farm, Green Bay 414/437-8390 Boutwell, Inc., Mazomanie 608/798-2560 Capital Lawns, Hales Corners 414/425-5535 Long Island Sod Farm, Marshall 414/655-3600

Specialists in seed and sod blends . . . with a 100-year reputation for top-quality.



ProTurf Division, O. M. Scott & Sons, Marysville, Ohio 43040



The McFarland Park Golf Course lies on a floodplain separating the business and residential section of Florence, Ala.

## 18 Greens In The Air

THERE may be another golf course in the nation that can boast of being downtown. That would be enough distinction for any course. But a new course in north Alabama goes one better. It's not only less than 7 blocks from the heart of a city of 36,000, but it was designed to survive more than 6 feet of fast moving flood water.

These are the reasons a lot of people are talking about the McFarland Park Golf Course in Florence, Alabama. Completed last summer, the 18-hole municipal course is part of a park complex bordering the Tennessee River. Besides the course, there is a driving range, baseball playing fields, a boat harbor, swimming areas, picnicking, and a large



The maintenance and equipment building is elevated and equipped with a ramp. During high water, tools are moved from below to the upper part of the building.

camping area.

The entire park is on a flat wooded floodplain designated by the Tennessee Valley Authority as an overflow area which is part of TVA's flood control system. From the beginning, park planners knew that the course would have to be "waterproofed."

All 18 greens with a total area of about 160,000 square feet are elevated to an average of about 7 feet above the surrounding area. That's high enough, say the engineers, to keep them out of the water under almost any conceivable high water condition along the Tennessee.

But even in dry weather, golfers aren't too far from water. The course has 10 lakes averaging about an acre in size; the largest covers 4 acres. Water comes into play on 13 of the 18 holes.

If that weren't enough of a challenge, the course also has 4 mud flats. They're mud for about 3 winter months when the Tennessee River is normally at its lowest. The rest of the year, they're covered with shallow water.

Water levels in the lakes are controlled by valves equipped with trickle tubes to allow water to flow (continued on page 32) it's a SPRAYING machine it's a SEEDING machine it's a FERTILIZING machine it's a SPRIGGING machine it's a MULCHING machine it's a TIME SAVING machine

## it's a MONEY SAVING machine



it's a .

HYDR

There are SO MANY WAYS a Bowie Hydro-Mulcher can serve you



MULCHER

Bowie's exclusive features give you the capability TO DO MORE



Models sized and equipped for ALL REQUIREMENTS



Write today for details on the Bowie Hydro-Mulcher

P. O. BOX 931 BOWIE, TEXAS 76230 AC 817 872-2286

For More Details Circle (104) on Reply Card



Corps crews spraying water hyacinths in Lake Natchez, La.

### LOUISIANA'S FIGHT FOR CONTROL

## **Operation Aquatic Weeds**

## By WILLIAM E. THOMPSON

Chief, Aquatic Growth Control Section U.S. Army Engineer District New Orleans, La.

THE GROWTH and spread of aquatic vegetation has been a continuing problem in Louisiana since the late 1880's. There are approximately 8 million acres of lakes, reservoirs fresh water streams and marshes in the state which are subject to infestation by aquatic plants. More than 230 genera of vascular aquatic plants and 25 algae species

have been collected in the state.

Over the years, numerous physical, chemical and biological controls have been used to combat adverse effects from aquatic vegetation on navigation, drainage and water supply, recreation and public health. These include harvesting, drawdowns, herbicide treatments, use of nutria, alligatorweed flea beetles



Feeding damage by Alligatorweed Flea Beetle.

and, recently, water hyacinth weevils.

There has been a wide variance in results obtained from the different methods. Harvesting of water hyacinths and alligatorweed has been partially successful but progress is very slow and disposal areas along stream banks often become unavailable. Harvesting or cutting submersed vegetation in most water areas is not practical because of numerous snags and large amounts of debris that result from a lack of clearing prior to formation of lakes and reservoirs.

Drawdowns have been employed in many of the lakes for fisheries management and to control the growth of submersed vegetation. Some have proven successful, but in many cases it has not been possible to control the water level to the degree necessary to achieve effective results.

Biological controls have been tried without any marked success until recently. Within the last two years, the spread of the alligatorweed flea beetle Agasicles hygrophila, which was introduced into the United States as a result of research funded by the Aquatic Plant Control Program of the Corps of Engineers, has begun to reduce the total alligatorweed infestation in the state.

Clearance was obtained in August 1972 for release of the water hyacinth weevil, *Neochetina eichhorniae* and they will be introduced and distributed throughout the state as soon as sufficient populations are available.

At present, in Louisiana, the most effective and economical method of combating problems associated with undesirable aquatic plants is with environmental protection chemicals. Applications are generally accomplished by two man crews who either work in waterways within commuting distance of their home stations, or, in isolated areas, from a quarterboat with complete living facilities. Each crew is equipped with an outboard motorboat and motor, spray pump driven by an aircooled gasoline engine and other necessary equipment.

Until recently, 10 gallon per minute piston type pumps were used, but within the last year several crews have been furnished 20 gallon per minute pumps. This is permitting these crews to treat areas more quickly and has increased the distance that the spray pattern can reach.

In order to permit our crews to spray continuously and eliminate (continued on page 66)



Overhanging edges, steep slopes, traps, and bunkers





Under benches, close to trees, buildings

R

Problem spots trimmed quick and clean with...

# the world's only airborne mower

Riding on a controlled cushion of air, the Flymo mower cuts smoothly through the toughest jobs. In wet grass or dry, long or short, and on flat surfaces or steep inclines, Flymo maneuvers easily, trims clean and close.

In use on golf courses and institutional grounds throughout the world, and meeting with enthusiastic acceptance in the U.S., the job-proven Flymo cuts expensive hand trimming by gliding under bushes and benches, and by floating right up to trees and posts. Cutting height is adjustable from  $\frac{1}{2}$ " to more than  $2\frac{1}{2}$ ".

Designed for safety and ease of operation, the Flymo is ruggedly constructed throughout. And a nation-wide network of distributors and dealers stands behind Flymo with prompt, dependable service.

Flymo — a cut above.

Flymo Division, Keltec Inc. P.O. Box 939, Elkhart, Indiana 46514 Telephone 219/293-8661



For More Details Circle (122) on Reply Card

sucks in air and presses it to the edge of the hood covering the cutting blade. An air cushion is formed, lifting the machine and making it float. Under the cutting blade the upward return airstream raises the grass so that it is cut to uniform height.

The Flymo impeller

**P**ROBABLY the hottest golf market in the west at the present time is the greater Phoenix area. In the past year, a number of new courses have been opened or planned by all types of developers. Many of the suburbs are planning municipal courses and the ever present sunshine has attracted retired persons in record-breaking numbers. New industry is a daily occurrence in this desert city and more and more housing developments are starting, many with golf courses planned or under construction.

This spurt in activity comes on the heels of a golf course development slowdown in 1971. That's all changed now. The curve is definitely rising and this upward trend should continue for the next five years, at least.

The west has always been a precedent setting region of the U.S. in many arenas. The same seems to hold true in golf course development. It has witnessed the overwhelming number of recreation-residential developments like most other sections of the country, seemingly a phenomenon produced because of the willingness of people to pay an extra premium for homesites adjacent to lush green fairways. Yet other trends seem to be growing without signs of abatement.

One of these is a rapidly growing number of "executive" type golf courses. This type of course has a wide range of flexibility and can be satisfactorily used by golf course developers of all kinds to suit their particular needs and available space. Most 9-hole executive courses range in length from 1800 yards to 2800 yards, using 25 to 50 acres. Their new-found popularity is not surprising when one considers the kinds of options open to the owners.

They use a smaller area than the regulation course. This means that many sites not ordinarily usable can be considered for this type of short course.

They are less costly to construct, require less maintenance and can be played in half the time of a regulation course. In addition, the executive course offers the dedicated golfer the opportunity to hit wood shots on several holes, unlike the par-3 which is usually played only with irons.

This type of course also is a good facility for the "impromptu" market, made up of those who cannot afford the time it takes to play regulation golf.

Examples of this type of course include: The Tucson Estates Golf Course, a new 18-hole layout surrounded by a mobile home development. It was designed by GCA Robert Lawrence of Tucson; The Maricopa Country Parks and Recreation Dept. under the leadership of Tom Wardell, Recently opened their 9hole Paradise Valley Executive Course in Phoenix, Ariz.; Rancho Bernardo, Calif., a massive new town development in San Diego County, has 27-holes of executive golf to complement their two 18-hole courses, one private and one open



# WEST COAST GOLF COURSE DEVELOPMENT

By BUDDIE A. JOHNSON National Golf Foundation West Coast Facility Development Consultant

for public play. Ted Robinson of Palos Verdes, Calif. designed the new Executive tracks; Monterey Park, Calif., in the heart of metropolitan Los Angeles, opened its new 9-hole executive course in 1971. Built on a garbage fill, this course is heavily played every day the weather permits; a new 27-hole Ted Robinson designed Executive layout is under way in Wilsonville, Ore. just south of Portland; a new 18hole Executive course is nearly finished on Salt Lake City's east side. It was designed by Bill Neff, Salt Lake City GCA and is being developed by Vaughan Barker.

Many others are in the planning stages and will add to the growing popularity of this newly-discovered type of golf course in the future. Another emerging trend is the golf course that is related to a mobile home development. With vast numbers of our nations population escaping higher taxes and rising home costs, the mobile home has become a haven for the consumer. Many of those living in these types of dwellings have migrated to the western states, seeking lower retirements costs, year-round good weather, and recreation. Some representative developments are:

Palm Springs, Calif. — The Palm Springs Mobile Home Country Club, offering Palm Springs living at reasonable prices.

Hemet, Calif. — The Colonial Country Club Estates is new and offers many amenities to its residents.

Ogden, Utah — A huge new mobile-home development by local physician, Rex Alvord, is now under construction and should open in 1973.

Federal Way, Washington — The Belmor Park C. C. is part of a large mobile home park.

This trend will continue. Most are being planned on low-cost acreage in order to justify the expense of a golf course, and the relatively low cost of mobile home space.

In terms of new openings, The Western States kept a good pace during the last year. Between Oct. 1, 1971 and Sept. 30, 1972 new course openings in the following states were: Arizona — 12; Idaho — 2; Oregon — 3; Utah — 3; California — 18; Nevada — 2; Washington — 9.

There are indications that the California market is leveling off. Giant companies like Boise Cascade are halting all development in California. So many new second-home housing developments now compete for the consumers money that competition is fierce. California has led the nation in establishing new environmental laws restricting flagrant development of the land, particularly coast-line and mountain properties, prime targets for developers.

Conversely, the Northwest is rebounding from its own economic depression and golf course development, especially in Washington, is going strong once again.

Utah has emerged as a relatively strong golf market, with a strong push in municipal courses. The Bureau of Outdoor Recreation funds in that state have gone to many cities, with 23% of the grants going for golf courses.

Idaho has a long way to go in terms of meeting the demand for new courses. The city of Boise (continued on page 44)

# Question: How do you clear a right-of-way adjacent to herbicide-sensitive crops and ornamentals? Answer: Very, very carefully.

and brush that infest roadsides and utility rights-of-way. Doubly so since you have to protect bordering private property at the same time.

With normal spraying techniques, no matter how careful you are, it's impossible to control drift. This can result in damage to crops and ornamentals and lead to costly damage suits.

So it's important that an effective weed control program also be an effective drift control program. And of course, economical as well.

The Visko-Rhap program was designed to minimize the spray Peace of mind through effective

It's a tough job clearing weeds drift problems while economically and effectively controlling weeds and brush.

Visko-Rhap herbicides are special formulations made to resist drift and withstand wash-off. They're applied in thick, controllable streams that break up into heavy, oil-coated droplets before contact. So when they hit, they stick. And you control only the growth you want to control. You'll also be able to see where you've sprayed.

And surprisingly, the cost of

Visko-Rhap<sup>™</sup>

drift control.

the equipment is not at all prohibitive.

There are many advantages to the Visko-Rhap program. We'd like to give you a more comprehensive picture. And since it's difficult to do in an ad, we have a 14 minute film available for viewing in your office.

We'll also be happy to set up a demonstration for you or send one of our experts to talk with you. Or, we'll just send literature.

But by all means spend some time and find out all you can about Visko-Rhap. It's the spray program that offers you effective weed control and drift control. And peace of mind.







Completed N-Bar installation near near Tampa, Fla.



Max Farnham and Bill Boren (r) work on a barrier. Note type of construction.



Work crews install a barrier by floating it into place and then tying it down to concrete blocks. Barrier is easy to maneuver.

# Weed Wall For Aquatics

Mechanical methods of containing aquatic weed growth are being considered increasingly where undesirable vegetation cannot be controlled with chemicals. Indeed, chemical and mechanical as well as biological means are often necesary to bring prolific species of aquatic weeds under control.

One of the newest mechanical systems to be introduced is N-Bar floating barrier. It has successfully been used to control the movement of water hyacinths in Florida. Presently, installations can be seen in Lake Apopka and in the Hillsborough River near Tampa.

How does N-Bar work? The barrier combines features of a floating boom and an underwater fence. It is constructed in 50 foot lengths of plastic-coated metal mesh, 4 feet high, to which risers of polyethylene pipe are attached using nylon tiewraps. An inflatable rubber boom protected with a sleeve of polyester, rubber coated fabric extends the length of the unit and floats the barrier. Barrier is anchored to concrete blocks. Weeds are contained behind the barrier while water is permitted to travel across the system.

Douglas W. Troll, president of Sea

Guard, Inc., manufacturers of the product, says that the plastic and rubber coated system is essentially rust proof. Once installed, the barrier permits passage of water, conforms to wave and wind action, but will screen out most solids. Position of the barrier can be changed when desired. "It can be removed and placed in other desired areas with minimum effort," Troll told WEEDS TREES AND TURF.

Pleasure craft can still use water, notes Troll. By making a series of turns, boats can enter and leave a baracaded area without damaging the barrier or disrupting the weed screening action.

"Our first installation was at the Tampa Water Plant Intake," recalls Troll. "Aquatic weeds had been breaking loose upstream in the Hillsborough River and fouling the plant intake. Pump suctions were restricted. Placing the barrier ahead of the intake area kept unwanted vegetation back yet permitted water to pass."

Sea Guard suggests that other uses for the N-Bar would be in ponds used for irrigation. Algae and weeds could be contained and kept away from intake pumps.

For more details, circle (719) on the reply card.  $\Box$