



46th Northwest Turfgrass Conference and Exhibition Planning Progressing

Preparations for the 1992 NTA 46th Northwest Turfgrass Conference, which is scheduled for September 21-24, 1992 at the Sunriver Lodge and Resort, meeting facilities and golf course reserved; lodging space blocked; speakers confirmed and scheduled; booking of exhibitors; and, all the other numerous details pertaining to planning and preparation for such a conference are coming together.

Planning and preparations are in the able hands of the following NTA conference committee chairmen: **Don Clemans**, Program (education, tours and hospitality) Committee; **David Jacobsen** and **Norm Whitworth**, Golf Tournament Committee; and, **Jon Hooper**, Table-top Exhibit Committee. These committee chairs, working within the parameters established by the NTA Board of Directors and with the professional, technical and logistical support of the NTA staff, make-up the network responsible for this year's conference.

Conference Education Program Looking Good

The education program, for the Sunriver conference, is looking great. Some of the speakers and their topics include: **Dr. Tom Watschke**, Pennsylvania State University, "Environmental Fate of Fertilizers and Pesticides;" **Dr. Steve Cockerham**, University of California-Riverside, "Turf Management on Modified Root Zones;" and, **Dr. Larry Helms**, "Dealing with Difficult People or How Not to Sprain Your Brain." Also included on the program will be reports on the status of on-going turf-related research and a variety of other timely subject. The program will continue to offer two tracks one for golf and one for grounds folks.

Conference Golf Tournament Will Be A Must

Sunriver in the autumn can be golfer's dream come true. With their clear dry climate and 4000 foot elevation, many players find their drives fly just a little further. They also find out why Indian Summer in Central Oregon just might be the best season of the year.

The Sunriver complex offers two golf courses. The **North Course**, a Robert Trent Jones II design, ranks within the top 15 of the famed golf architect's worldwide plans.

Plotted with intricate challenges, the course has doglegs on nearly every hole, numerous manmade and natural hazards...abundant thrills for all golfing levels. The longest way through the tees measures 6823 yards, but...at the minimum par of 5417...the most skillful golfer will be pushed for the par 72.

Lush fairways and true, smooth greens are masterfully set amid hilly terrain, lava rock outcrops, plentiful native shrubbery and pine trees, augmented by seven reflecting lakes and over fifty sculptured swirls of whitest sand. All this within the spectacular surroundings of Central Oregon's high desert country and a magnificent resort complex.

The **South Course** is the longer of the two courses at 6944 yards. With its more level terrain, mid-fairway mounds and elevated greens and tees, the course meanders amid Sunriver's beautiful meadows and mountain pines, with majestic Mt. Bachelor in the background. You'll enjoy the smooth putting greens, a variety of tee placements, groomed fairways and the clean, sunny mountain skies.

Kick-off Reception and Table-top Display

For the last two years, one of the highlights of the conference has been the combined conference Kick-off Reception and supplier Table-top Display the first evening of the conference. The event goes on all evening the first day of the conference and always draws (and holds) a full house. Suppliers, and other corporate sponsors-members and nonmembers alike-donate a variety of offerings for door prize drawings held throughout the evening; supplier display tables dot the reception hall; golf tournament winners are announced and trophies awarded; a grand selection of heavy hors d'oeuvres; and, the opportunity to rekindle old acquaintances and make new ones, all contribute to an evening of fun and enjoyment.

Sunriver Amenities Great For The Family, Too

There's plenty of action afoot at Sunriver for those family members not attending the education sessions, too. The clear, dry climate assures bright days and there is plenty to do for all ages and interests. Guests of Sunriver Lodge receive more free amenities and recreation than ever before. Whatever the length of your stay you'll find a choice of activities that will make your visit a memorable

President's Message

Returns from the **Northwest Turfgrass Association Survey** recently sent to over 4,000 Pacific Northwest turfgrass industry-related individuals have been coming in very well. The data, once compiled and analyzed, will provide information for the NTA Board of Directors as they do their 1992/93 and beyond planning and budgeting.

We were looking for guidance from the membership and industry pertaining to a number of areas of the associations involvement, including but not limited to, membership, conferences and meetings, research and scholarship activities and publications. With the results of the survey, your board directors will rework our mission statement and make necessary changes to improve our association. You can bet that not all criticism is positive; but, you can also bet that all ideas in writing or otherwise are being seriously considered with one goal in mind—identifying what will help our membership, association and industry.

Local preemption of pesticide regulation is an issue that we all must be concerned with. Many of our members have been involved with drafting state legislation and testifying before the legislatures in Washington, Oregon and Idaho. Individuals from golf courses, lawn care companies, nurseries, equipment companies and others have been working together to address this issue. There has been a major effort from all parties to bring forth workable legislation for both industry and end user. Handling and use of pesticides are subjects that cannot be taken lightly. We must stay on the forefront of this issue keeping our "house must be in order," our employees well informed and in compliance with all agency requirements.

Tom Wolff
President

Sunriver Amenities (cont. from page 1)

one. In addition to the golf described above, amenities include: tennis, racquetball, swimming, bike trails galore, whitewater rafting, canoeing, running, nature walks, horseback riding, fishing, hot tubing, shopping, and much more.

Sunriver Lodging Accommodations

The Sunriver Lodge and Resort offers two type of lodging accommodations in a variety of sizes—either **Lodge Village Bedrooms and Suites** or **Private Resort Homes and Condominiums**.

The Lodge Village Bedrooms and Suites are newly remodeled accommodations located adjacent to the lodge. The **Lodge Village Bedrooms** come in two configurations—"Kings," with a king sized bed accommodating 1-2 people or "Doubles," with two double beds which accommodates 2-4 people. Conference rates for king or double bedrooms will be \$100.00 per night.

The **Lodge Village Suites** accommodates 2-6 people with three queen sized beds and a well-equipped conti-

mental kitchen, dining and living area, open loft-sleeping area and two private baths. Conference rates for suites will be \$149.00 per night.

All bedrooms and suites feature stone, wood-burning fireplaces, private bath and deck, and many offer a view of the golf course or mountains. Sunriver/Racquet Club privileges are available with all Lodge Village accommodations. Daily maid service and in-room amenities are included.

The **Private Resort Homes & Condominiums** will also be available spacious enough to accommodate families or groups. **Two-bedroom units**, for a conference rate of \$158.00 per night, **2-bedroom with loft units**, for a conference rate of \$176.00 per night, or **3-bedroom units**, for a conference rate of \$203.00 per night, feature completely equipped kitchen facilities, living and dining area, a minimum of two baths, fireplace, private deck and colored cable TV. Sleeping arrangements vary in each unit, some sleeping four people, others sleeping up to 10. Sunriver Racquet Club privileges are available with all Lodge Village accommodations. Daily maid service and in-room amenities are included.

A limited number of **Executive home units**, for a conference rate of \$307.00 per night, offering the newest and finest Sunriver accommodations, featuring three or more bedrooms, hot tub, VCR, stereo, microwave oven and exception interior design are also available for the adventuresome spirit. Executive home unit amenities also include daily maid service, daily newspaper, fruit basket, coffee and souvenir mugs upon arrival.

Reservation information and cards for lodging accommodations will be included with conference registration packets which will be mailed later this year. For accommodation reservations made prior to August 20, 1992, the rates described above will be honored by Sunriver. After that date, reservations will be accepted on a space available basis and rates will increase approximately 10%.

Getting to the Conference and Sunriver

Sunriver Lodge and Resort is located 15 miles south of Bend, Oregon, just off Highway 97. From Portland, a 3 and 1/2-hour **drive** on major state highways takes you through a variety of spectacular Northwest scenery. Horizon Airlines and United Express offer daily **flight** service to Redmond Airport approximately 40 minutes from Sunriver. AMTRAK provides **train** service into Chemult, just 45 minutes from Sunriver. Car rental, taxi and limo services are available from the airport and train station.

Sunriver Airport is open year-round, with a 5,500 foot paved and lighted runway, nightly hangar rental and car rental services available.

1992 Research and Scholarship Fund Raising Campaign Kicks Off

Jon Hooper, chairperson of the **NTA Research and Scholarship Fund** committee, recently announced the kick-off of the 1991/92 R&S fund raising campaign.

Intimately involved with turfgrass management, we realize more than most, that today's turfgrass quality is the result of knowledge and technological gains resulting from research and education accompanied by hard work and effort. We owe our thanks to those who gave their time and money to make the research and education possible, for without them we would have to rely on our own slow trial and effort methods.

Few of us are independently capable of, nor prepared to conduct the research or development necessary to keep the industry on the leading edge. Recognizing this, the Northwest Turfgrass Association created a research and scholarship fund to help make it possible for each of us to financially contribute to industry research and education advancements.

Donation forms will be mailed to members and industry supporters with the next month or so. Contributions are tax deductible and those contributing to the research and scholarship fund are recognized in the NTA Directory of the Northwest Turfgrass Association.

Buy a share today in better turfgrass for tomorrow.

Annual Membership Dues Billings

The second dues notice for 1992 was just recently mailed. Notices were mailed to those who have held membership in the past but have not renewed yet for 1992. Those who have already paid their membership dues for 1992 should not receive a second notice.

The NTA is a non-profit corporation founded in 1948 to help all people involved with and interested in turfgrass culture in the Northwest. The association has grown in the last few years from around 200 members to over 400 individuals involved in turf facilities development and maintenance in public schools, universities and colleges, parks, golf courses, cemeteries, sports fields, commercial facilities, home lawn care operations and others.

If you haven't renewed your membership for 1992 already, do it today.

1992 NTA Turfgrass Scholarship Announcement

The Northwest Turfgrass Association (NTA) is now accepting applications for turfgrass scholarships for 1992/93. Scholarships generally range from \$500 to \$750.

Scholarship applicants should complete a copy of the attached Scholarship Application Form. Applications should be typed. Along with the application form, applicants are asked to provide: an explanation of the reasons for requesting the scholarship; a statement of their sources of financial support; a statement regarding their commitment to the turfgrass industry in the Pacific Northwest, and a summary of their future goals. Applicants are also asked to provide a brief autobiography.

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3. Applicants shall have outstanding qualities as individuals, and students.
4. Applicants shall have initiative, leadership qualities and a desire to be contributors to the turfgrass industry and profession in the Pacific Northwest.

The schedule for consideration of applications is as follows:

December-January Scholarship announcements

February-April Scholarship applications received

May Scholarship applications reviewed

June Scholarships approved by NTA

July-August Scholarship applicant notifications

August-September

Scholarship disbursement to school registrar

All applications for 1992/93 scholarships should be submitted to the NTA office (P.O. Box 1367/Olympia, WA 98507) no later than April 30, 1992. Questions relating to scholarship applications should be directed to the NTA office (206) 754-0825.

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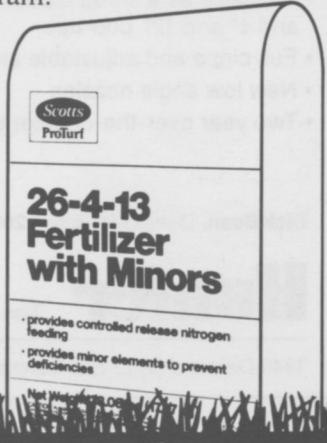
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Mark Jones
(509) 255-6033

Rick Styer
(206) 859-6610



Turfgrass Scholarship Applications Sought

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Roy Goss Turfgrass Endowment Gets Major Boost

A house and land on Anderson Island (Washington, Pierce County) in Puget Sound, valued at about \$566,000 from Roy L. Goss of Kailua Kona, Hawaii, adds significantly to the Roy L. Goss Turfgrass Endowment in the WSU College of Agriculture and Home Economics. The endowment was established in 1987 with a gift from Goss, a former WSU agronomist in Western Washington and holder of three WSU degrees, and his wife, Marcella. The Gosses formerly lived on Anderson Island and now make their home in Hawaii.

Goss is an extension agronomist emeritus from the WSU Puyallup Research and Extension Center, where he worked from 1958 until he retired in January 1988. He earned bachelor's degrees from WSU in 1950 in agriculture and 1951 in education. In 1960, he received his doctoral degree from WSU in agronomy.

It has been said that whenever someone enjoys a great lawn at home, work or play in this country and around the world, they have Roy Goss to thank. His turfgrass work brought him and WSU international recognition and set standards for maintenance and establishment of both commercial and home turf.

The major emphasis of Goss' research programs was turfgrass nutrition. He developed nutritional ratios for all types of turf including specialized turfgrasses for golf course putting greens and sports fields.

Guidelines and specifications for sand-based putting greens and sports field construction which are standards in the trade today, including those used by the Seattle Seahawks professional football team at its practice facilities, were begun by Goss.

He also conducted weed control projects and developed control measures for nearly all broadleaf weeds in Pacific Northwest turfgrasses.

His many honors for his turfgrass work include being Northwest Turfgrass Association honorary lifetime member. He was association executive secretary for 25 years. He is also an honorary member of the Northwest Association of Golf Course Superintendents, Inland Empire Association of Golf Course Superintendents, and the Western Canada Turfgrass Association.

He has received the O.A. Vogel Faculty Award given

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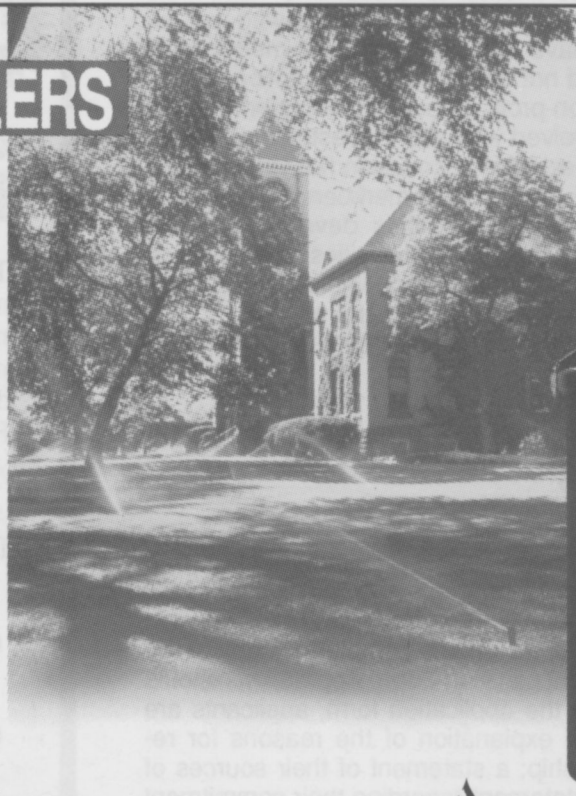
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by the WSU College of Agriculture and Home Economics, and major honors from the U.S. Golf, Golf Course Superintendents of America and the Pacific Seedmen associations.

His research resulted in numerous scientific papers and speaking engagements around the world.

Sam Zook Dies

A memorial service for Sam Zook of Woodburn, Oregon was held at 11:00 a.m., Saturday, October 12 at the Portland Memorial Funeral Home. Interment was in the Willamette National Cemetery.

Mr. Zook died of complications from an open heart surgery operation on Wednesday, October 9, in a Portland hospital. He was 72.

Sam Zook was born June 29, 1919, in Portland, and attended Portland schools one of which was Jefferson High School. He married Anna Louise "Jerry" Chapelle on November 24, 1939, in Vancouver, Washington. Sam worked for several golf courses in Oregon and Washington, starting as a shag boy for Clark County Golf Course in 1931. He then worked on the crew for Columbia-Edgewater Country Club, and later as superintendent for Pendleton, Waverly and Eugene Country Clubs. He retired in 1986 from Overlake Golf and Country Club in Medina, Washington. He moved to Woodburn in 1986.

He served in the U.S. Navy during World War II. He belonged to both the Oregon Golf Course Superintendents Association and the Western Washington Golf Course Superintendents Association as well as the Northwest Turfgrass Association and the Golf Course Superintendents Association of America.

His son, Sam G., died in 1985. Survivors include his wife; son Frank of Milwaukee; Daughter, Sandra King of Portland; and sisters Vivian Lechner of Lincoln City and Barbara Johannsen of Portland.

The family suggest that remembrances be contributions to the Oregon Golf Course Superintendents Scholarship Fund, 10804 NW 11th Avenue, Vancouver, Washington 98685.

Many superintendents in the Northwest counted upon Sam as a friend, an associate, a worthy opponent in a golf match, a source of help in turf management problems. He will be missed by his many friends.

Weiser Named Head of OSU Ag College

Conrad J. (Bud) Weiser, head of Oregon State University's horticulture department, was named dean of the OSU College of Agricultural Sciences and began that position Nov. 1. Weiser replaces Roy Arnold, who recently was selected to serve a two-year appointment as OSU provost and vice president for academic affairs. Weiser, like Arnold, holds a two-year appointment to his new post.

Weiser, 56, has a bachelor's degree in horticulture from North Dakota State University and a Ph.D. in horticulture from OSU. He began a teaching and research career in 1960 in the University of Minnesota's horticulture department.

He joined OSU as horticulture department head in 1973. Since then he has coordinated teaching, research and extension work that serves the state's nursery industry.

OSU will begin a national search to replace Weiser as head of the horticulture department.

Strategies for Maximizing Exhibiting

Six strategies for maximizing exhibiting in uncertain times are as follows:

1. Personally invite key prospects to your exhibit. Fifty to 75 percent of the people you speak to will come to your booth. Bear in mind that personal calls to upper management, as opposed to mid-level decision-makers, are seldom made but can be very effective.

2. Find out your prospects' agenda before designing your exhibit. Mail a survey to 100 prospects likely to visit the show, asking them to identify three key issues they're concerned about. Design your exhibit around their responses instead of general product displays. Send out mailers to all prospects saying these messages will be addressed at your booth.

3. Build a networking environment. Prospects love to meet an exhibitor's customers, reasoning that they can find out more by talking to actual users than to salespeople. Again, let prospects know that this opportunity is available. For example, one computer company sends out notices before a show stating: "Our customers are staffing our booth. Come meet with them and discuss applications and experiences."

4. Put management together with prospects. When prospects are unsure about making a purchase, they need reinforcement that they are making the right decision. Since lack of trust and confidence is often what causes resistance, bringing in senior management helps confirm the commitment from your company. Team-selling with management can overcome a prospect's apprehension and expedite the decision.

5. Consistently exhibit. Exhibiting at a time when your competitors are cutting back gives you a clear opening to influence your competitors' customers. When customers see a withdrawal from the marketplace, they question a company's commitment, viability, and performance. Every dollar spent during uncertain times has proven to yield a threefold return in long-term business.

6. Tap into the referrals market. Most of your customers can identify two or three people who could use your products or service. A common mistake, however, is to blatantly ask for names: This triggers a negative perception from the customer who worries that people referred will be bothered by the salesperson. Instead, ask for names of people you can send a newsletter to, or those who might appreciate receiving samples or tips to help improve productivity. This encourages a "helping perception," which will result in more names. A minimum of 20 percent of a salesperson's business should come from referrals: Trade shows are an excellent place to start.

Source: Successful Meetings 2/92

Harbour Pointe Selected Best for 1991

Congratulations are in order for Harbour Pointe Golf Club in Mukilteo, Washington for being selected as **Golf Digest's** Best New Public Course for 1991. The Superintendent at Harbour Pointe is Jim Medler and the Head Professional is Mark Rhodes.

Conceived in 1984, the Golf Digest Best New Course survey is conducted annually to recognize the outstanding new golf courses in the United States. A total of 144 new courses were considered this year: Private – 62 nominees; Public – 64 nominees; and Resort – 18 nominees. A Canadian category was added this year, with seven courses nominated. Our panel of experts has been evaluating these courses for the past six months.

Candidates are judged on criteria similar to that used for the Golf Digest 100 Greatest: shot values, playability, design balance, memorability and esthetics. Reflecting the current quantity and quality of new golf course construction, our awards include in each category a winner, a runner-up and three honorable mentions.

In the Public category, honorees are:

WINNER: Harbour Pointe Golf Club, Everett, WA

RUNNER-UP: Elk Ridge Golf Club, Atlanta, MI

HONORABLE MENTION:

Eaglesticks Golf Club, Zanesville, OH

Windsor Parke Golf Club, Jacksonville, FL

The Legends Golf Club, Myrtle Beach, SC

A Silent Killer: Carbon Monoxide

Each year several hundred people are killed and many more require medical attention after being exposed to carbon monoxide gas (CO). It is a colorless, odorless product of incomplete combustion.

Vehicles sitting stationary claimed most of the CO victims. Poor maintenance, obstructed tailpipes and alcohol consumption are common factors in vehicular CO fatalities.

Carbon monoxide poisoning in the home is caused by clogged air intakes for furnaces or water heaters and plugged chimneys. Propane refrigerators and burning charcoal can also release dangerous amounts of CO.

To protect against CO poisoning:

- Keep vehicles well maintained. Check exhaust systems regularly for holes, loose connections or leaks. The body should be sound and free of holes. A well-tuned

engine produces far less CO gas.

- Just as drinking and driving is dangerous, parking with the engine running while under the influence greatly increases potential for CO poisoning. A very drunk person can pass out and be susceptible to CO poisoning.

- Never sleep in a parked vehicle with the engine running. If stranded and likely to doze off, switch off the engine.

- When parked where drifting snow may cover the tailpipe, or when stuck in a ditch or snowbank check frequently to ensure that exhaust gases can escape easily.

- Always leave a window cracked open to let in fresh air. Such ventilation is a good idea when you are driving, and not just while parked.

- Be alert for early warning signs of CO poisoning, including headache, dizziness, slight nausea, confusion and drowsiness. If you feel any of these symptoms, get out of the vehicle and into fresh air.

- Never leave children in a vehicle with the engine running, no matter how short you'll be gone. "Going into the store for just a minute" could have serious consequences.

- Never leave engines running in a confined space—such as a garage or workshop—without proper ventilation. In the home:

- Only qualified, licensed service personnel should install and inspect fuel-burning appliances or convert such equipment from one type to another. All fuel-burning appliances should receive an annual safety inspection.

- Never use barbecues or other charcoal-burning devices indoors. They release dangerous amounts of CO.

- Never leave a vehicle idling in a garage which is attached to or located beneath a home. Exhaust gases can enter the living quarters, whether or not there are connecting doors.

Chapman Moves to Full Time Consulting

Prescription TURF Services Inc. announces the appointment of James R. Chapman as full time consultant, effective March 1, 1992.

Prescription TURF Services began in 1988 when Dr. Roy Goss retired from Washington State University as the Extension Turf Specialist. Dr. Goss, John W. Monson, Facilities Maintenance Manager for Seattle Seahawks, and James R. Chapman, Commercial Turf Manager for The Chas. H. Lilly Company, joined in forming this consulting service for turf and grounds managers. The service grew on a part time basis over the following years.

Since 1988 PTS has helped golf courses with environmental impact documentation and solved special problems for professional turf managers in golf, school, industry and landscape care. The increase in requests for service has prompted the move of James Chapman to full time status.

Part of new service will be contract work for suppliers, spread setting research, in house or on site seminars for pesticide credits. Other special projects will include product demonstration plots and product training. Plans also include expanding existing consulting services to new clients.



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1992 TURFGRASS SCHOLARSHIP APPLICATION ANNOUNCEMENT

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NORTHWEST TURFGRASS ASSOCIATION

A nonprofit corporation
supporting research for the
improvement of Turfgrasses.

SCHOLARSHIP APPLICATION FORM

Application Date _____

Student's Name: _____ Age _____

Mailing Address: _____

Institution: _____

Faculty Advisor: _____

Name	Title	Department
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Advisor's mailing address: _____

Applicant's major field of study: _____

Current class standing: _____ Jr. _____ Sr. _____ Graduate Student

Accumulative grade point: _____ Last semester/quarter grade point _____

Accumulative grade point in major field of study: _____

Number of semester/quarter hours taken to date: _____

Experience in turfgrass work: _____

Experience on other jobs: _____

(over please)

Name and relationship of any close relatives associated with the turfgrass industry: _____

Name and relationship of any close relatives who are members of the Northwest Turfgrass Association: _____

List all other grants or scholarships, and amounts received, for the upcoming scholastic year: _____

Describe (in 500 words or less) your reasons for requesting a scholarship. Include in the above a brief autobiography, a statement of your sources of financial support, your commitment to the turfgrass industry and the Pacific Northwest, and future goals. (Complete on separate page and attach.)

Mail Application To: Northwest Turfgrass Association, Research and Scholarship Committee
P.O. Box 1367
Olympia, Washington 98507

Deadline: Scholarship applications must be postmarked by **April 30, 1992.**

FOR FACULTY ADVISOR (Handwritten signature must appear)

I recommend this student for a Northwest Turfgrass Association Scholarship:

Signed _____ Date _____

Additional Comments:

Northwest Turfgrass Association Scholarships are awarded without regard to sex, race, creed, or national origin.

NORTHWEST TURFGRASS ASSOCIATION

1991-1992 Directory Supplement No. 2

New Members

(Nov 1, 1991 - Feb 14, 1992)

Jacobson, Gene A.

Superintendent of Grounds
WALLA WALLA COLLEGE
204 S College Ave
College Place WA 99324
509-527-2346 Fax #

Letellier, Randy L

Assistant Superintendent
AVALON GOLF CLUB
1717 Kelleher Rd
Burlington WA 98233
206-757-1900 Fax # 206-757-2555

Reierson, Ronald M.

Sr. Sales Manager
CHEMSEARCH
18000 Pacific hwy S #1102
Seattle WA 98188
206/246-9210 Fax # 206/

Wilhite, Mark

Assistant Superintendent
TWIN LAKES GOLF COURSE
2600 E Village Blvd
Rathdrum ID 83858
208-687-1311 Fax # 206/

Welcome Aboard !

**Please Remember
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NTA
Research & Scholarship
Fund**

**Donation
in your
1992 Budget**

Please allow for a \$100, \$200, \$300, \$400 or a \$500 donation. We all benefit from this type of research so please do your part and set aside funds for this worthy cause.

Thanks,
NTA R & S Committee

Jim Chapman has been active in the turf industry for 34 years. He began with O M Scott & Sons, and was an original member of the ProTurf Division. He specialized in educational seminars.

Chapman left in 1979 to start Sportsturf Northwest, an athletic and park renovation and maintenance company, and Lawnaid, a lawn care operation. In 1985, The Chas. H. Lilly Company employed Chapman to develop a Commercial Turf Department. That project now functions well enough to permit Jim Chapman to move along to this new challenge.

Golf Course Design, Maintenance Affect Speed of Play

Golf course design and maintenance practices are two factors which heavily influence the speed of play, according to Tom Clark, president of the American Society of Golf Course Architects.

When players get hung up in tall grass, water, trees or sand, play often slows to a snail's pace, resulting in fewer rounds completed and, particularly for public courses, less revenue than expected.

"A well-designed, well-drained course with visible target areas, properly placed bunkers and water hazards, and smaller greens will usually play fastest," said Clark. "The key is to challenge the player without overwhelming him with hazards and slowing play considerably.

"Getting out of the bunker may take two or three shots and then the player has to rake the area. To speed play,

we are designing more grass depression bunkers instead of the traditional sand bunkers. Interestingly, pro players seem to have more problems with grass bunkers than the average player."

Clark also recommends holes be designed with only visible targets, eliminating blind shots, which often end up in the rough or out of bounds.

"Seeing the target is 90 percent of speeding up play," he said.

Oversized greens and poorly maintained water hazards can also slow play.

"We used to design greens as large as 9,000 square feet," said Clark. "Smaller greens, though still a challenge, usually require fewer putts and less time spent lining them up."

The banks of water hazards should be bulkheaded or otherwise kept clean, without weeds or dense grass to hide a ball, he said. Time spent looking for balls slows play considerably and Clark recommends clearing and maintaining wider landing areas.

"Many courses save on maintenance by not mowing certain areas but what they may save in maintenance, they will lose in the number of rounds played."

Source: *The Florida Green*

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Facts About Waste

by Dan Everhart

Among some other printed matter dealing with greenwaste I happened to receive a listing of "Facts About Waste" printed by The Earthworks Group, Berkeley, California. I thought you might be interested in knowing that:

- The average American family produces 100 pounds of trash every week.
- Every year we throw away 24 million tons of leaves and grass.
- Every year, Americans throw away enough office and writing paper to build a wall 12 feet high, stretching from Los Angeles to New York City.

Actually the list contained some 42 "facts" similar to those shown above. It was interesting and also concerning to see the following in the same list:

- More than 200 million tons of pesticides are used annually in California alone.
- According to the EPA, at least 74 pesticides have been found in the groundwater of 38 states.

The implication I get from this is that The Earthworks Group equates pesticides to waste. I don't believe that to be true. Do you?

Below Par?

Environmentalists are starting to take aim at golf courses

by Edward Hegstrom

At the end of a long day's tour of vanishing Eastside wildlife habitat, a caravan of state officials and legislators made a turn past the guard at the Sahalee Country Club on the North Sammamish Plateau, maneuvered down the narrow residential road, and pulled up where the view opened between a row of homes to the lush greens and towering firs of the golf course. State Department of Wildlife biologist Tony Oppermann used this final stop to illustrate how idyllic sites are not necessarily suitable for wild animals.

If the golf course looks particularly lush, it is because the greenskeepers have used pesticides and fertilizers that actually harm wildlife. If the wooded roughs look wild, consider how they contain none of the undisturbed wetlands and free-flowing stream so crucial to birds and fish. If the expansive, rolling lands look large enough to shelter at least a few big mammals, notice how the ring of homes and a security fence inadvertently exclude deer and bear as effectively as the public at large. "It sure looks nice," Oppermann summarized, as he slipped his state-owned truck back into gear. "But for wildlife purposes, it's almost useless."

With local golfers complaining that they don't have enough places to play in the Puget Sound area, debate over building future courses seems likely to intensify in upcoming months. Conversations with developers, land brokers, and planners indicate there are seven golf courses officially proposed for construction on the Eastside and at least four other parcels where the fairways and greens have been plotted on a developer's map. If all were developed, the Eastside courses now under consideration would swallow the equivalent of about half the land mass of the existing city of Issaquah and, according to a crude Department of Ecology formula enough water to supply well over 5,000 homes.

Once viewed as the next-best thing to standing forest, golf courses have recently come under attack from the environmental community, which charges that they are a significant drain on scarce water resources and a major source of chemical pollutants. And while developers say they are rapidly implementing new technologies to make golf courses safer and less consumptive, activists have already begun to question the advisability of new courses.

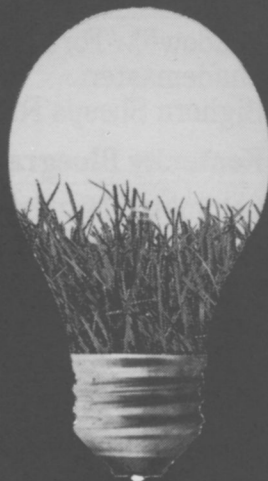
"The general public still thinks golf courses are great," says Barbara Douma of the Washington Wetlands Network, a group fighting the expansion of golf courses in Seattle. "They see birds and raccoons, and they think of wilderness. It may be relatively new, but we [environmentalist] are beginning to spread the word that the perception is wrong."

King County's Environmental Division has also begun raising questions about golf courses' effects on wildlife habitat (Do they provide any?), water quality (Do chemicals from the course wash into the ecosystem?), and water quantity (Can the irrigation water be justified?). Officials in the Seattle-King County Health Department and the state Department of Ecology say they are beginning to look at similar issues.

From all quarters, staffers report that the study of golf courses is still too new to reach any concrete conclusions.

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"There is still a lot of information we don't have," says Bill Lasby of the Health Department. "The jury is still out."

Even the willingness to probe golf courses represents a subtle shift in policy. Darcy McNamara, a resource planner with the King County Environmental Division, notes, "We are no longer accepting the old assumption that golf courses are big, wonderful open spaces."

Developers say they never asked to have their courses compared to forested open space. The entire backlash against golf courses, they say, is based on a fundamental misconception about the alternatives. Because of existing stringent building regulations, developers cannot fill wetlands, bulldoze native growth protection areas, or remove protected wildlife habitat to build golf courses. "By definition, a golf course cannot be put anywhere but on buildable land," says Judd Kirk, vice president of Blackhawk Port Blakely Communities. "People talk about the alternative to golf courses as forest. The real alternative is homes."

Beyond the questions of land-use policy more fundamental concerns have recently been raised about the chemicals used on golf courses. According to a 1982 Environmental Protection Agency study, golf courses use an average of 9 pounds of pesticides per acre annually, compared to under one pound for most agricultural uses. (In the Northwest, where fungi and noxious plants pose less of a problem in lawn maintenance than in other areas, golf courses generally use fewer pesticides than the national average.)

Caroline Cox, editor of the Eugene-based *Journal of Pesticide Reform*, says that pesticides occasionally reach such high levels that they are not only an environmental concern, but also a health risk. In the process of researching the Fall 1991 issue of the journal, Cox says she ran across the story of George Prior, a 30-year-old Navy flight officer who took a golf vacation in Alexandria, Virginia, in 1985, fell sick, and died 20 days later. Doctors attributed his death to Chlorophalonil, a fungicide commonly used on golf courses. Cox also related the experience of Billy Casper, a pro golfer from the 1960s who sometimes found the exposure to golf course chemicals debilitating. In New York in 1984, 546 dead brant geese were collected from a golf course where they had fed soon after it was sprayed.

Yet even Cox sees a promising future for enlightened golf course management. In their study, the editors of *Pesticide Reform* found two golf courses—in Florida and Maryland—where greenskeepers have dramatically reduced pesticide use in response to pressure from environmentalists. A third course, planned for Squaw Valley, California, met with such strong opposition from environmentalists that the managers agreed to ban all pesticide use. (The Squaw Valley course, a sort of test case, has yet to open.)

More generally, Cox says, golf course associations have recently begun encouraging their member courses to introduce integrated pest management. Other pest control systems spray pesticides "by the calendar," as Cox puts it, meaning that they spray for bugs and weeds whether or not there is a problem—the reasoning is that there probably will be one. The integrated pest control system first calls for a detailed analysis of what and how many pests there are and whether or not damage or annoyance is perceived. If pests do need to be controlled, multiple, non-chemical methods are used. This may include such steps as weeding more frequently or using water to wash bugs off of their favorite plants. Chemicals are used only as a last resort.

On the Eastside, environmental safeguards are now incorporated into most proposed golf courses. The Snoqualmie Ridge course, for instance, is designed to appear natural while actually hiding state-of-the-art environmental controls, according to George Cook, project manager for Weyerhaeuser Real Estate. Discreet waterways will actually serve as sophisticated detention ponds, holding excess water from the course and slowly releasing it into the drainage system.

The greens, where chemical use is most concentrated, will have a system beneath the grass that will collect surface water, channel it through charcoal filters, and then release the clean water into the detention ponds. Once completed, Professional Golf Association managers will move in to maintain the course under a strict program that will minimize the amount of pesticides used.

In the long run, the most controversial facet of golf courses may involve not the water they release but the water they consume. Some courses are experimenting with alternative irrigation methods (such as recycling water or using treated sewage sludge), but most managers still opt to use water that could otherwise be used as drinking water. (According to the Center for Golf Course Management, the median amount of water that a golf course in the Western United States uses in one year is 89,650,000 gallons. In comparison, the city of Bellevue used 6.193 billion gallons in 1990.)

In the Methow Valley, just east of the North Cascades, where water has always been scarce, a debate has surfaced over the voracious water needs of a golf course proposed at the Early Winters resort. Locally, Issaquah water purveyors may have gotten a glimpse of things to come late last year, when Blackhawk Port Blakely Communities, the owners of Grand Ridge, filed an application with the Department of Ecology to pump 2,000 gallons of water per minute from the Issaquah aquifer. (Issaquah, by comparison, has the right to draw 3,000 gallons per minute to satisfy all municipal demands.) The water, enough to serve 4,000 homes, was deemed necessary to handle the needs of the two 18-hole golf courses that the developers hope to build on the ridge northeast of the city.

At the time the application was filed, Grand Ridge owners say they did not understand that the Issaquah aquifer is a limited resource coveted by both the city and the Sammamish Plateau Water and Sewer District. Issaquah Mayor Rowan Hinds' alarmed reaction prompted Grand Ridge owners to apologize, agree to withdraw their application, and negotiate with the city to provide future water needs for their proposed development and its golf courses. The Department of Ecology has not yet received a withdrawal notice.

Though the issue of watering two Grand Ridge golf courses has yet to resurface, it eventually will. It's not that the city is unconcerned about the possibility of using scarce aquifer water for a massive recreational complex, says Rita Perstac, city municipal services director. "It's just that we're not to that point in the negotiations yet."

Just like everyone else, resource analysts say they have only recently become aware of the possible implications of golf course water consumption and have not yet adequately studied the issue. "This is just now becoming a hot topic," says Jerome Parker, a Department of Ecology conservation planner in Olympia who has dealt with the Early Winters debate. "We have not had as much time as we would like to focus on these policy questions."

"Below Par?" Response

Same old tripe resurfaces about golf courses

by James R. Chapman

I suppose it shouldn't bother me. I've seen the same old tripe resurface every three or four years – you know, the story about golf courses being such a prime source of pollution. The problem is that I know it just isn't true. The stories are shallow, usually lacking in factual research, and seem to assume that golf course superintendents want to pollute the same environment they share with their families, the hundreds of golfers using the acreage they maintain, and the community they live in.

Take the recent "exposé" in the December 4 issue (Eastside Week) written by Edward Hegstrom. While I'm not sure of Mr. Hegstrom's qualifications, I do know some of his data just doesn't toe the mark.

One story that stands out is the allegation of a Caroline Cox in Oregon regarding a Lt. Prior that died following a round of golf in 1985. It would have been just as easy to say he died after recently eating peanut butter. The fungicide mentioned (by the way, correct spelling is Chlorothalonil) was never detected in Lt. Prior's body. That Lt. Prior worked for a Navy project dealing with biological weapons was curiously kept low key. If Mr. Hegstrom checked with the manufacturer of the fungicide, he would have found much data supporting the safety of proper use of the product, including a settlement following a suit against such vicious false accusations.

Another claim regarding the use of pesticides is that golf courses have so much money they can throw these products around without thought or consideration. All golf courses I'm familiar with, and I am familiar with almost all of them in Western Washington, are trying hard to keep within restricted budgets. Manpower is required to apply such products and most of them are quite costly due to the difficulty of researching and registering every one used. Most use is restricted to the small area of putting greens and tees.

Blank application of weed controls and pesticides? Why? Golf course superintendents are pesticide licensed and many are nationally certified and all are professionals! They don't apply a product just because someone who knows little or nothing about the care of turf says they do. There is little need for these on even the best golf courses and when such need arises they treat only the area showing the damage. (European Crane fly, for example: Did you or your neighbor treat for Crane fly last year? Few golf courses did.)

The concept of Integrated Turf Management (ITM) has been underway for several years among all turf managers, not just golf superintendents. Clipping control, water conservation, careful fertilizer scheduling, have been implemented to eliminate any perception of contamination, to keep better control of manpower, to make the course more playable even when wet (reduce the clumps of clippings), keep the equipment running longer without breaking down. These people manage millions of dollars of real estate and receive precious little recognition for the job they do.

Sahalee Country Club has at least one Blue Heron that nests on the course and hundreds of other forms of wildlife that the State Department of Wildlife biologist might have had pointed out to him if he had bothered to get out of the car, straighten out what he sits on and asked the superintendent – a true professional in every sense – some questions. Sahalee may not be a sanctuary for bear and deer, few seem to want to live in an urban environment. There aren't too many around Interlake High School either.

Golf course superintendents are environmentalists. Many golf courses are built on waste land that won't support any other business. Some are built on land that could go to

houses and that paved over land would divert water from replenishing groundwater to overloading the storm drains and sewer systems.

All golf courses pollute less than any other type of land use, including farming. They certainly don't dump their excess chemicals down the storm drain when they rinse out the spray tank like homeowners do. They certainly don't wash oil, cigarette butts, etc. into the surface drains with every rain like industrial parks and supermarkets do.

If you want a true perspective on what good golf courses do, interview a golf course superintendent, not someone removed from the situation. You might just as well call up Meryl Streep and see if you can't resurrect the Alar fiasco.

Ask how Glendale Golf & Country Club is working with the Audubon Society to recreate a sanctuary along the newly refurbished wetland section winding through the course. Ask about the school children stocking the stream with salmon, a stream that struggles for purity against the filth dumped into it before it gets to the golf course but which the golf course is trying to clean before it gets to Lake Washington.

Check Mill Creek Golf & Country Club about the birds that come out at night in the wetland areas so carefully protected by the golf course superintendent, a man that often stays at night just to watch them and enjoy them and make sure they are there.

Ask the new Battle Creek Golf Course personnel about the bear that lives on the course, that sometimes digs in the greens, but is not bothered by the maintenance crew (they probably don't want to see it, let alone bother it.)

If you don't want golf courses, what kind of recreation will you support: street hockey, stickball, pool? Perhaps we can pave more trails to run and bicycle on along more Sammamish Rivers. The alternative to golf courses scattered throughout our communities is housing, more schools, a few underfunded parks, and much more hard surface shedding water instead of absorbing it. Golf courses are restful and healthy oases in our concrete deserts.

Whenever an "environmentalist" decides to attack golf courses I have to wonder what it takes to join that club. The golf course people I know are certainly qualified to be call environmentalist and are working at that job every day. The other group in quotes are just like supremacists, coming out now and then to sling statements and exist without having to justify them or listen to any surprised argument against these unjustified bleatings.

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Soil Structure and Density

by R. W. Sheard, Ph.D.

If the mixture of sand, silt and clay particles in the soil remained separated as individual particles the smaller particles of clay and silt would migrate into the holes between the larger sand fragments to create a dense material such as found at depth in the subsoil of a normal soil. An analogy would be to take a bin of softballs, fill the bin with marbles, shake it till no more marbles can be added, then add SCU pellets until no more of them can be added. This simulation would have little porosity and is analogous to a dense, compacted soil.

Such a soil would be very poor for root growth as it would have little air or water movement and much resistance to root penetration. Good turf management requires the use of cultural practices which will help to reverse this situation.

SOIL STRUCTURE

Fortunately soil particles tend to group together into larger, semi-permanent arrangements known as aggregates (clods, peds, crumbs). The result of aggregation is called soil structure and its importance is that it tends to make soils which are high in clay act like sand in terms of air and water movement.

There are a number of factors influencing the ability of soil to have a stable soil structure. The primary factor is soil organic matter whose breakdown products create a cementing effect, holding the mineral particles together. Calcium, iron and the type of clay also have an effect.

It is necessary, however, to move the particles close together before the cementing action can become effective. This movement is brought about through root action, soil organisms such as earthworms, freezing and thawing, and wetting and drying of the soil.

Of prime importance is the resistance of the aggregates to disintegration under the destructive forces of wind, rain, vehicle and foot traffic; the latter two being the forces of concern on sport fields. Stability is very closely related to the amount and type of organic matter present, with turf providing the most effective means of promoting stable soil structure. Nevertheless under continued traffic, particularly when the soil is excessively moist, the structure can be destroyed and the soil will compact.

Soil structure is of great significance where the soil contains silt and clay. Soil structure, however, is not a factor in sport fields constructed on sand as sands will not form aggregates. This is why selection of the correct size distribution of sands is critical to prevent migration of fine sand particles into the spaces between the larger sand grains, creating a dense root zone.

SOIL DENSITY

The degree of compaction of a soil is measured by determining the apparent (bulk) density of the soil. The determination is a simple procedure, involving the insertion of a small (5-cm diam. X 2-cm deep) ring into the soil. The ring is carefully excavated, trimmed level at the top and bottom and dried for 48 hours at 100C. The density is the dry weight of the soil in each cubic centimeter of volume; this volume includes both solid particles and the spaces between the particles – the porosity. The more compacted a soil the greater the density; that is, the greater the weight of soil particles compressed into each cubic centimeter and the smaller the air spaces. Soil may vary in density from 1.0 to 1.75 gm/cm³. Then ideal soil described in the first article of this series would have a density of 1.32. It may be calculated to show that such a value would have 50% pore space. Natural soils with densities beyond 1.55 can be considered to have compaction problems. Sports fields constructed on sand, however, can be expected to have a density as high as 1.65 while still retaining good air and water characteristics.


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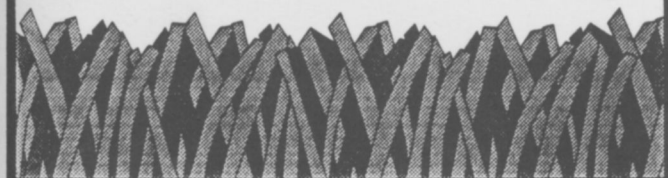
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- February 23-26** Western Canada Turfgrass Association Annual Conference
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- February 24** NTA Board of Directors Meeting
Contact: NTA Office (206) 754-0825
- June 14** NTA Board of Directors Meeting
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- June 16** WSU Field Day/Puyallup
Contact: Stan Brauen (206) 840-4511
- June 16** Jacklin's 1992 Discovery Tour
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- June 18** Turf-Seed's 10th Annual Field Day
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- August 10** NTA Board of Directors Meeting
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- September 20** NTA Board of Directors Meeting
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- September 21-24** NTA 46th Northwest Turfgrass Conference and Exhibition
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