Sub-par for the course

Duffers, beware—lush fairways and greens come at a cost

UNEARTHED

A closer look at health and environmental issues

BY BRIAN MCKENNA

"My kilt's stuck in the rough, and my pebble's gone down a rabbit hole!"

In the 15th century Scottish game of "gowf," players hit a stone around a natural course of rabbit runs, ravines and gullies using a stick or club. The coastal landscape was etched by sand dunes and hollows formed by strong winds and seawater.

How times have changed. Today golfers drive with titanium clubs and gasoline carts on an unnatural, sanitized grass surface. The world's estimated 50 million golfers are inordinately influenced by the sport's premier event—the staid Master's Tournament in Augusta, Georgia—to expect unblemished perfection on the course.

When CBS showcased the 2002 Master's last April they displayed impeccable greens of expensive "bent grass," which gives the ball added speed—but only because agronomic specialists trim the greens to 1/8 inch to achieve the desired effect. Unknown to many, Augusta closes down for six months after the tourney, in part to let the grass recover.

In contrast, Scottish gowfers relished imperfection. Their swings were thoroughly adapted to the coast's craggy dispositions. Rabbit runs—open tracts where hares linked their burrows in the dunes—were perfect fairways for the early golfers. Foxes and hunters expanded the runs as time went by.

Golf courses have expanded exponentially in the 20th century, displacing foxes and hunters. There were 10,848 golf courses in the U.S. in 1970. By 2000, this had increased to 17,108, according to the National Golf Foundation. The links cover enough land to encompass the states of Delaware and Rhode Island combined, about 4,000 square miles. Moreover, in 2000, each U.S. golf course used enough water to satisfy the needs of 8,000 people for a year, according to the National Geographic Society.

Worldwide there are more than 25,000 golf courses covering roughly 11,000 square miles, about the size of Maryland. In Japan, the numbers are telling. After WWII there were only 23 golf courses. By 1994 this had ballooned to about 1,700. Golf courses are one of the fastest growing types of land development in the world.

In this obsessive quest for tee, an invasive species called Homo Sapiens gobbled up forests, destroyed wetlands, expunged native flora and fauna, including insect pollinators necessary for species diversity, and, less emphasized in public discourse, have most probably seriously harmed human health, via endocrine system insults and cancer.

As a result, golf course development has emerged as a major social and environmental issue across the world, igniting activists. The Global Anti-Golf Movement was ushered in on World No-Golf Day, April 29, 1993, following a three-day conference on Golf Course and Resort Development in Penang, Malaysia. The three sponsoring organizations were Japan-based Global Network for Anti-Golf Course Action, the Malaysia-based Asia-Pacific People's Environmental Network and the Thailand-based Asian Tourism Network.

The Anti-Golf Movement Manifesto calls for an immediate moratorium on all golf-course development, an open, public environmental review/audit of existing courses and the conversion of existing courses into public parks. The Manifesto rejects "the myth of 'pesticide-free' or 'environmentally friendly'" golf courses. "We appeal to golfers to be fully informed and aware of the adverse environmental, health and social impacts of golf tourism," they implore.

The movement recently suffered a tragedy. On March 4, 2000, two anti-golf activists were killed in the Philippines by unidentified men believed to be private security guards. The victims were opponents of a grand real estate development project in Nasugbu, Batangas, about 80 kilometers south of Manila.

The anti-golf movement might as well be taking place on Mars, for all the golf industry is concerned. Nearly 1,000 new courses are planned this year and some industry proponents hope for 200 million golfers worldwide soon. In his 2001 offering, *Fore! Play, The Last American Male Takes up Golf*, comedian Bill Geist calls the game, "white middle class crack," as a partial explanation.

Denial is another part of the puzzle. I recently interviewed a Michigan golf groundskeeper who asked me incredulously. "What's wrong with golfing? Why does everyone pick on us? We are environmentalists too."

"When I apply pesticides I use the minimal amount suggested," he said. But then he made it clear that he intended to use one hazardous pesticide until its legal phase-out in a few years, rather than substituting a less-toxic or non-toxic alternative right now.

The groundskeeper pointed to the United States Golf Association, the American Society of Golf Course Architects and several professional golfers, like Arnold Palmer, who have made efforts to save natural ecosystems, improve pesticide application practices and conserve resources. These efforts were inspired by Audubon International, the Garden Club of America and the U.S. Department of Interior, among others. Instead of fighting the golf industry they are working to foster an environmental ethic among golf course managers. They've been at it for about ten years now.

But that ethic is heavily resisted. The Michigan Turfgrass Environmental Stewardship Program was established in 1998 to promote "green" practices among reticent golf courses, where owners are used to the old way of doing things. It's a cooperative project between the Michigan Department of Environmental Quality, Michigan State University and the Michigan Department of Agriculture. For a bargain basement fee ranging from $75 to $150 dollars, a golf course can voluntarily become a member, attend a workshop and receive a site visit where a confidential three-year environmental action plan is developed. The program provides training on leaking underground storage tanks, pesticide and fertilizer storage, pesticide handling application and mixing and loading pads. The program also works to enhance wildlife habitat and promote native vegetation on golf course properties.

The result? As of August 2002, after four years in operation, just 198 of the estimated 900 Michigan golf courses have participated in a workshop, just 22 percent, despite the hard work of Michigan Turfgrass educators. Even fewer of the 198 have ever had a site visit.

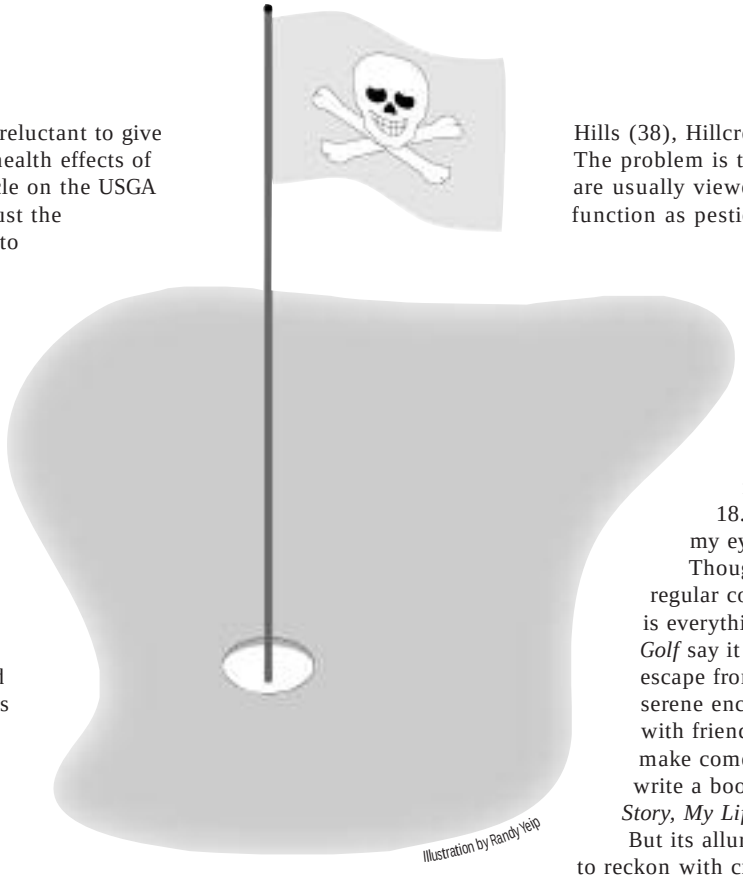

Illustration by Randy Yelp

In fact, the golf industry is quite reluctant to give credence to issues like the human health effects of pesticides. A July/August 2002 article on the USGA Web site, "Just the Facts, Ma'am, Just the Facts," claims that, "it is a mistake to assume that because pesticides kill certain pests, they are necessarily a threat to non-target wildlife or humans."

But there is ample evidence of dangerous health effects associated with golf courses, and/or with pesticides. A 1997 occupational health study found that golf course superintendents die more frequently from cancer than the general population. The study was conducted by researchers at the University of Iowa's Institute of Agricultural Medicine and Occupational Health, who compared the mortality of a cohort of members of the Golf Course Superintendents Association of America to the general U.S. white male population. Significant excess mortality was found for four types of cancer: brain, lymphoma (non-Hodgkin's), prostate and large intestine. Death from diseases of the nervous system was also found in excess. The study did not reveal that pesticides were the cause, but it does suggest that something about the golf course environment, perhaps pesticides, was a contributing factor.

Another recent groundbreaking study in *Environmental Health Perspectives* (June 1998) did specifically point to pesticides as a cause of health problems. In their study comparing children in two comparable Mexican villages, one with heavy pesticide use, the other with little, Drs. Louis and Elizabeth Guillette found that pesticides can undermine intelligence, impact behavior, and diminish reproductive capacity. The sobering fact is that these deficits occur without any obvious signs of poisoning.

We still do not have a very good accounting of the amounts of pesticides that golf courses apply, but a 1982 U.S. Environmental Protection Agency survey found that the average golf course used more that nine pounds of pesticides per acre—which was about three times the amount used on most farms at the time. Over the years, the EPA has banned 42 different pesticides, including aldrin, DDT, dinoseb and vinyl chloride. Others are called restricted-use, meaning they must be applied by or under the direct supervision of a certified applicator. Restricted-use chemicals are acutely toxic to farm workers and applicators, as well as various mammals, birds and aquatic animals. They have environmental effects long after suspended use. Golf courses commonly use known or suspected carcinogens like atrazine, 2,4,-D and carbaryl.

Pound upon pound of pesticides end up in adjacent rivers, lakes and streams. According to the National Golf Foundation the top names for courses are: Riverside (46), Lakeview (40), Rolling Hills (38), Hillcrest (37), and Lakeside (37). The problem is that these rivers and lakes are usually viewed as "water hazards," and function as pesticide receptacles.

I myself love golf, the miniature kind. I remember as a lad of six tugging on my father's shirttail one Saturday morning, asking for an advance on my weekly allowance of 25 cents to play a second game of putt putt after I failed to get the required hole-in-one at Hole 18. When he said no, I bawled my eyes out.

Though I have not played on the regular courses, I imagine that golfing is everything that books like *The Zen of Golf* say it is. It's a meditation, an escape from the hustle and bustle, a serene enclave to share camaraderie with friends. It's a hoot! Enough to make comediennes like Bill Murray write a book about it called *Cinderella Story, My Life in Golf*.

But its allure does not diminish the need to reckon with criticisms of organizations like Michigan Turfgrass and the Global Anti-Golf Movement. We need more parks and fewer golf courses. At the very least, an educational effort is required to change the cultural perception of the golf course, from a holy land free of pests, disease and dandelions to a bountiful ecological refuge. Part of this effort might involve something as simple as placing a sign near a bunker alerting a golfer that the rare Kirkland warbler relaxed by that jack pine tree on its aerial journey from the Bahamas to Michigan. Or to know, as is true for the Detroit Country Club, that there are 70 American Elm trees untouched by Dutch elm disease on the property.

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But education and persuasion go only so far. We need something much stronger. It's important to recall that gowfing was outlawed in Scotland in 1457 by King James because, he said, people were fooling around playing golf when they should have been practicing archery for national defense.

Ralph Nader, in his 2000 Presidential run, came close to such a call. When asked whether he played golf, he said, "I never envisioned the purpose of life as taking a piece of metal and pushing it toward a hole. People ought to be pushing children out of poverty."

He's got a point.

Maybe a brief moratorium would be a good thing. Today there's no need to refine archery skills. However, a ban might encourage some putters to forsake the club for a stint as a Nader's Raider, or eco-warrior.

Fore!

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