

Some Facts About Golf Course Impact On Water Quality

FINDING: Golf courses do not pose a significant pollution threat to the nation's water supplies. This conclusion is based on a review of the scientific evidence that is currently available. Neither groundwater nor surface water is threatened by golf course runoff. Further, studies show that stormwater runoff is near zero from golf courses.

GROUNDWATER: About half of all people in the United States depend on groundwater for their drinking water, and the figure is 90% in rural areas. Results from ongoing scientific studies show that the use of pesticides on golf courses does not threaten public drinking water. Because of the low mobility and quick biodegradation of most golf course pesticides, they simply do not reach groundwater in significant quantities.

One Environmental Protection Agency-funded study being undertaken on Cape Cod in Massachusetts provides for a "worst-case" estimate of groundwater contamination. To date, test results have been encouraging, demonstrating that golf courses and clean groundwater do co-exist.

Some experts argue that golf turf offers uniquely favorable control mechanisms to prevent groundwater contamination. Dr. Stuart Z. Cohen, a former Ground Water Team Leader for the EPA in Washington, notes that "the use of pesticides on golf courses poses less of a threat to the nation's groundwater than does the agricultural use of pesticides."

Additionally, turfgrass provides a "thatch layer" not found in row crop situations. Thatch binds up pesticide residues and increases degradation of some chemicals. Dr. Harry D. Niemczyk of Ohio State University has found that as much as 99% of recovered pesticides are found in turfgrass thatch.

In some areas, golf courses are also helping to mitigate the groundwater pollution effects of hazardous waste sites. Many of the nation's golf courses fertilize soil using sludge compost mixes prepared by urban waste recycling programs. These sludges might otherwise be disposed of in municipal landfills. Thus, potential groundwater leaching from dump sites is averted by careful community planning and recycling.

STORMWATER RUNOFF: Stormwater runoff from golf courses is not a significant environmental hazard. Research conducted by Dr. Thomas Watschke, a turfgrass specialist at the Pennsylvania State University, indicates that thick, healthy turf reduces runoff "to next to nothing."

An average golf course of 150 acres effortlessly absorbs 12 million gallons of water during a three-inch rainfall. Dr. Watschke finds that thick, carefully managed turfgrass has 15 times less runoff than does a lower quality lawn. As a result, almost all of the pesticides applied to the grass remain in place after peak rainfall.

Dr. Richard J. Cooper of the University of Massachusetts argues that turfgrass cover "reduces soil erosion and prevents soil and chemical runoff into water sources."

By comparison, parking lots, streets and even residential areas load nearby waters with hazardous pollutants carried in runoff from road surfaces, gutters and catch basins.

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SURFACE WATER: Golf courses help decrease sedimentation pollution of rivers, streams and lakes by preventing topsoil erosion. The major polluter of U.S. surface water is sedimentation from soil erosion. However, turfgrass reduces erosion, as compared to alternative land uses.

For instance, studies show that grassland experiences 84 to 668 times less erosion than areas planted with wheat or corn. Construction has an even more devastating impact on topsoil, so golf courses can greatly reduce erosion effects as compared to other land users, like shopping malls or housing developments.

Sedimentation pollution from soil erosion costs society billions of dollars in increased transportation, shipping and cleaning costs. Thus, by preventing soil erosion, golf courses serve a very beneficial societal purpose.

CONCLUSION: Golf courses do not threaten the nation's water supplies. Scientific studies show that pesticides used on golf courses do not seep into neighboring groundwater sources. Other studies demonstrate that stormwater runoff is greatly reduced by turfgrass. Finally, still more studies show that grassy areas reduce soil erosion, which is a major cause of sedimentation pollution in that nation's rivers, lakes and streams.

On the whole, a golf course makes an environmentally sound contribution to any community.

—CREDIT: *The Mountain State Greenletter*

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