



Quantitative Analysis of 20-Plus Years of Golf Course Monitoring Studies

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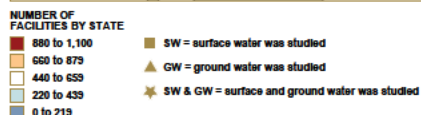
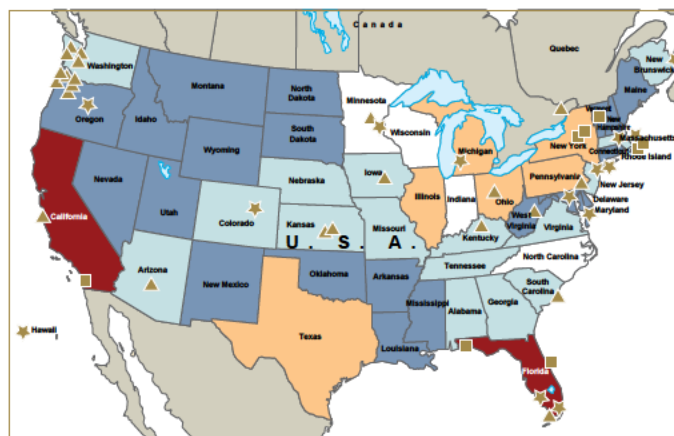
Objective

Evaluate golf course water quality data and assess the impacts of golf courses on surface water and ground water quality.

Summary

Comprehensive data and assessments of the impacts of golf courses on water quality are needed to address the concerns of government agencies and the general public. This type of information is invaluable when seeking environmental permits, in making state and national decisions on pesticide registration and analyzing the impact of golf courses on ecosystems.

Water quality monitoring data from 80 golf courses, 78 in the U.S. and two in Canada, were included in this study. A total of 38,827 data entries from pesticide, pesticide metabolite, nitrate-nitrogen and total phosphorus analyses of surface water and ground water were evaluated.



Results

- Golf courses did not have widespread or repeated effects on water quality at the sites studied. Of the individual pesticide database entries, 0.15% exceeded toxicity reference points for ground water and 0.56% for surface water.
- The maximum contaminant level (MCL; 10 milligrams/liter) for nitrate-nitrogen was exceeded in 16 of the 1,683 (0.95%) ground water samples.
- Of 1,429 data entries, 1,236 (86.5%) were exceedances of total phosphorus ecoregional criteria in five ecoregions. Thus, phosphorus appears to present the greatest water quality problem in these studies.



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