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The piedmont of the southeastern United States is currently experiencing rapid urban expansion. As urban land cover expands, water quality in streams and rivers is likely to decline. For example, urban areas may have higher concentrations of stream solutes, such as nitrates, and higher abundances of coliform bacteria. Studies conducted in the Enoree River basin in South Carolina during 1999-2000 demonstrated a significant positive relationship between stream nitrate concentrations and urban land cover. To expand upon that study, we conducted a study in summer 2005 to address the following questions: (1) Have stream nitrate concentrations increased in the Enoree basin, and (2) are abundances of coliform bacteria also correlated with urban land cover? We collected water samples from 53 locations in 6 sub-watersheds in the Enoree basin. These sub-watersheds ranged from 6.5 to 80 km^2 in area, of which 3.7% to 64.7% was covered by urban land. As with data from 1999-2000, stream nitrate concentrations correlated positively with percent urban land cover (mean nitrate concentrations among sites ranged from 0.15 to 5.89 mg/L). For sites sampled in both 1999-2000 and 2005, there was no statistically significant difference in mean stream nitrate concentrations. Like the pattern for nitrate concentrations, there was a significant positive correlation between abundance of suspended *Escherichia coli* and percent urban land cover. However, total coliform abundance did not correlate significantly with percent urban land cover. Overall, our results suggest that urban land cover negatively affects both chemical and biological components of water quality in the southeastern piedmont.