

## **Long-term Environmental-monitoring Geospatial-data Download**

In the early 1990's, the Pinelands Commission initiated a long-term environmental-monitoring program with the ultimate goal of evaluating the ecological consequences of the Comprehensive Management Plan for the Pinelands National Reserve. The main objectives of the program are to characterize the effect of existing land-use patterns on aquatic and wetland resources and to monitor long-term changes in these resources. A study of the Mullica River Watershed (Zampella et al. 2001), which was the initial focus of the monitoring program, demonstrated that changes in the composition of stream vegetation, fish assemblages, and anuran (frog and toad) communities paralleled gradients of increasing land-use intensity and water-quality degradation. Based on the results of the Mullica River Watershed study, Commission scientists completed studies assessing the status of selected aquatic and wetland resources of the Rancocas Creek Watershed (Zampella et al. 2003), Great Egg Harbor River Watershed (Zampella et al. 2005 ), and Barnegat Bay Watershed (Zampella et al. 2006). Each report is available for download at <http://www.nj.gov/pinelands/science/pub/>.

The results of the watershed studies revealed that the surface-water quality and biological communities found in forested stream basins generally contrasted with those attributes found in basins with a high percentage of altered land (developed land and upland agriculture). Acid waters and typical Pinelands biological communities characterized survey sites in forest-dominated stream basins. Elevated pH and specific conductance and nonnative plant and animal species were associated with stream basins with a high percentage of altered lands. Both pH and specific conductance in streams and lakes increased in relation to the percentage of altered land in a drainage basin, and nitrate concentrations were higher in the more heavily altered basins.

This download includes individual Pinelands-wide GIS layers for anuran (frog and toad), fish, vegetation, and water-quality sites and the watersheds associated with the sites. Metadata are also included for each layer. The anuran, fish, and vegetation layers include species presence/absence data for each site. The water-quality layer includes median pH and specific conductance values for each site. The watershed layer includes the boundary of each watershed. The use of these data should include reference to one or more of the appropriate New Jersey Pinelands Commission Long-term Environmental-monitoring Program reports listed below.

Zampella, R. A., J. F. Bunnell, K. J. Laidig, and C. L. Dow. 2001. The Mullica River Basin: a report to the Pinelands Commission on the status of the landscape and selected aquatic and wetland resources. Pinelands Commission, New Lisbon, New Jersey, USA.

Zampella, R. A., J. F. Bunnell, K. J. Laidig, and N. A. Procopio. 2003. The Rancocas Creek Basin: a report to the Pinelands Commission on the status of selected aquatic and wetland resources. Pinelands Commission, New Lisbon, New Jersey, USA.

Zampella, R. A., J. F. Bunnell, K. J. Laidig, and N. A. Procopio. 2005. The Great Egg Harbor River Watershed Management Area: a report to the Pinelands Commission on the status of selected aquatic and wetland resources. Pinelands Commission, New Lisbon, New Jersey, USA.

Zampella, R. A., J. F. Bunnell, K. J. Laidig, and N. A. Procopio. 2006. The Barnegat Bay Watershed: a report to the Pinelands Commission on the status of selected aquatic and wetland resources. Pinelands Commission, New Lisbon, New Jersey, USA.