United States Department of the Interior
U.S. Geological Survey
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Maryland-Delaware-District of Columbia Water Science Center
Seminar Series

Monday, June 23, 2014, 10:30 am - 12:00 pm

SPARROW-Based Catchment Modelling in New Zealand

Dr. Sandy Elliott
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In New Zealand there are strong economic drivers of intensification of pastoral agriculture, yet environmental policies demand that overall water quality be maintained or improved. Catchment models such as SPARROW therefore have an important role in predicting water quality outcomes of future land-use and management scenarios. This presentation will overview the following topics:

- Development of SPARROW models for nutrients, E. coli, sediment and water clarity, (starting with collaboration with the USGS in the 1990's)
- Incorporation of elements of SPARROW, along with farm-scale nutrient loss models, into a GIS-based catchment model CLUES (Catchment Landuse for Environmental Sustainability)
- Application of CLUES to address potential outcomes of land-use intensification and mitigation measures from catchment to national scale
- Current developments, such as temporal downscaling, spatial refinement, linkage to optimisation models, and linkage to estuary and periphyton growth models
- A summary of the role of groundwater-induced time lags for nitrogen delivery: current issues and modelling approaches.

Sandy Elliott is a Principal Scientist at the New Zealand National Institute of Water and Atmospheric Research (NIWA). His primary interest is in catchment modelling for water quality, especially as it relates to diffuse pollution. With undergraduate training in Engineering Science, he completed a doctorate in Environmental Engineering Science at Caltech, then worked as a consultant and university lecturer, and for the last 16 years he has been a researcher at NIWA.

Presentation will also available remotely via Webex: https://usgs.webex.com/

For directions to the USGS MD-DE-DC WSC: http://md.water.usgs.gov/directions/baltimore.html.