



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** TX3281

**Title:** Resolution of Fluvial Sediment Sources, Residence Times and Resuspension Using Lithogenic, Atmospheric and Cosmogenic Radionuclides, Bayou Loco, Texas

**Focus Categories:** Sediments, Radioactive Substances

**Keywords:** sediment, fingerprinting, resuspension, residence time, radionuclides

**Start Date:** 03/01/2001

**End Date:** 02/28/2002

**Federal Funds:** \$5,000

**Non-Federal Matching Funds:** \$10,008

**Congressional District:** 10

**Principal Investigator:**

Kevin Yeager

Student, The Texas AM University

**Abstract**

This project will seek to develop methods to fingerprint the source and trace the transport of sediments through river systems and lakes by taking advantage of distinct radionuclide signatures. The radionuclide signatures can be traced to specific parent rocks, and thus could potentially be used to identify the origin and movement of soils and sediments. This project will utilize a case study of an East Texas lake, Lake Nacogdoches, to test a variety of radionuclide tracers including Beryllium-7; Lead-210; Thorium-228, -230, and -232; Radium -226 and -228, and the fallout of Cesium-137. It is anticipated that this research could develop the capability to assess the buildup of sediments over time in relation to land use, and could help distinguish between relatively new and older sediments. The project could also shed light on the relative extent that newly detached sediments, soils from floodplains, and sediments in river channels contribute to sediment loads in streams.