

ZOOL400 Honours project

Starting second semester 2008

Sub Antarctic invertebrate community patterns in soils contaminated with petroleum hydrocarbons.

Sub-antarctic Macquarie Island has a number of petroleum hydrocarbon contaminated sites from fuel spills. The Australian Antarctic Division's Environmental Risk and Remediation team are currently working to remediate these sites over the next 5-10 years. The aim of this project is to assess how terrestrial invertebrate communities are affected by the petroleum hydrocarbon contaminants at these sites. Soil samples will be collected from Macquarie Island during Jan-Mar 2008 from fuel spill sites as well as from uncontaminated control sites. Invertebrates will be extracted from these samples and identified to assess a range of ecological parameters including abundance, diversity and species richness. This project will co-occur with studies being conducted to delineate the extent of the contamination plume at spill sites, and will complement studies investigating the impacts of hydrocarbon contaminants on microbial processes in soils, and the degradation of fuel components in soils. Community structure at the various sites will be compared to the distribution and extent of contamination. This work will identify sensitive key species that may be suitable for use in ecotoxicological tests and will contribute to the development of soil quality guidelines for fuel contamination in polar regions.

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