

**Abstract of poster presented by students of GEOG 550
at NEERS Meeting, March 2004**

**SEARCH FOR THE RECLAMATION SURFACE OF A RECOVERING
DYKELAND: SAINTS REST MARSH, SAINT JOHN, NEW BRUNSWICK**

Noel, P.E., E. Heller, G.A. Hung and G.L. Chmura

Department of Geography (& Centre for Climate and Global Change Research)

Saints Rest marsh has a complicated history. Dyked sometime between 1786 and 1864 the marsh was first managed mainly for pasture and hay production. Barns were constructed in the marsh, roads traversed it, and forestry and gravel extraction occurred in the adjacent upland and beach. Sometime prior to WWII the marsh was greatly modified as a military shooting range. Subsequent abandonment in the 1950's resulted in the dyke falling into disrepair and eventually being breached. Currently a sewage treatment plant discharges at the head of the marsh creek. Now, the largest salt marsh in Saint John, Saints Rest is part of the Irving Nature Park.

Saints Rest Marsh is a natural laboratory in which to study the process of recovery in salt marshes after tidal restriction (and other disturbances). To study recovery requires recognition of the buried reclamation surface in a recovering marsh. Here we report a pilot study that uses paleoecological techniques to identify the historical surface. Examination of fossil rhizomes and colour in sediments outside the dyke (our reference condition) reveals a simple progression from low marsh to high marsh. Detailed analyses were performed on sediments from two sites inside the dyke to interpret the more complex stratigraphy there. In one site we found a higher abundance of weed pollen and coprophilous fungi (as an indicator of pasturing) at a depth clearly recognized by its sediment colour. Reduction in organic matter content and appearance of *S. alterniflora* rhizomes above this layer indicate return of tidal flooding to the system. Our other site (across the main tidal creek) inside the dyke shows a stratigraphy complicated by continued disturbances over the history of the marsh.