

Development of Assessment and Remediation Approaches for Salt Releases to Peatlands in Western Canada

Craig Harris, AECOM Canada
GL911251

Moderately to highly saline groundwater co-occurs with most petroleum oil and natural gas deposits. Releases of saline “produced water” potentially affect peatland-forming wetlands (bogs and fens), particularly in temperate to sub-arctic circumpolar environments. This study quantifies vegetative and soil faunal responses to salinization of western Canadian boreal peatlands, towards the development of ecological risk-based remediation guidance. Field data on the abundance (or percent cover) of vascular plants, bryophytes, and soil mesofauna were obtained in the summer of 2008 and 2009 from nine produced water release sites in Alberta and British Columbia. Research plots (1 m² quadrat and peat core sample sites) were established along salinity gradients within fen (n=5), bog (n=3) and marsh (n=1) ecosystems arising from recent spills.

2009 AECOM_Saline Releases to Peatland

2010 AECOM_Vegetative changes in boreal peatlands
along salinity gradients