

2016-2017 PROJECT PLAN SUMMARY

Project Name:	B1-2-2 Peace-Athabasca Delta Ecosystem Health Study
Type of Project:	Focused Study
Delivery Agent:	Environment and Climate Change Canada
Project Contact:	Donald Baird (ECCC) - donald.baird@canada.ca Daniel Peters (ECCC) - daniel.peters@canada.ca
Budget:	\$ 402,285

Project Description:

The project collects geophysical data, water chemistry and biodiversity samples from multiple wetland habitat types along a gradient of surface connectivity to the main flow system, which has been shown to be sensitive to natural and anthropogenic alterations. Analysis of wetland hydro- period and wetland connectivity to the main flow system (i.e., Athabasca River Delta channels) is also assessed. Analysis of the biological samples is done using traditional visual identification methods. The project is linked to similar work being carried out in the Athabasca River main stem and tributaries. In addition, hydrological monitoring techniques will be implemented, focusing on the drivers of aquatic ecosystem change, and their relationships with key oil sands stressors and predicted stressors related to climate change.

Project Objectives:

- An assessment of the status and health of deltaic wetland ecosystems in the Peace-Athabasca Delta (PAD), including the Birch River Delta (BRD) and rivers/wetlands in the Slave River Drainage (SRD); including the establishment of baseline/reference conditions.
- Interpretation of ecological change associated with ongoing oil-sands mining activities within the region, using hydro-climatic, eco-genomics and metrics-based diagnostic techniques. Focus will be on the separation of stressor effects, including contaminants and hydrological change.
- Linkage of main stem and tributary biomonitoring activities within the oil sands region and downstream ecosystem status and trends, to support integration of results within Joint Oil Sands Monitoring (JOSM) and the Lower Athabasca Water Management Framework.
- Specific Objectives include biological, Water Quality and Sediment sampling and associated hydrological analyses in the PAD and SRD.

Key Outcomes:

To provide information on potential reach specific and regional impacts of oil sands development on PAD, BRD and SRD aquatic ecosystem health and to further develop a foundation for assessment of cumulative effects.

Geographic Scope:

Peace-Athabasca Delta; Birch Delta; Slave River Drainage

Associated Data and Reports:

Quality assured and controlled 2015 benthic data and elevation/connectivity of monitoring wetlands on the JOSM Portal and generation of a report and manuscript(s).