

FOCUSED STUDY ACTIVITY WORK PLAN

General Information

Work Plan Unique Identifier:	WL-CM-2-1718	
Focused Study Activity Title:	Culturally Important Wetland Plants	
Focused Study Category:	Study to Establish the Current Environmental State	
Geographic Location (<i>choose from drop-down menu. If Project Location is in more than one area choose from second drop-down</i>)	Regional Municipality of Wood Buffalo	Peace River Oil Sands Region
Monitoring Site(s) Coordinates (<i>latitude and longitude</i>)	To be determined in collaboration with communities in both the Athabasca and Peace regions	
Project Leader:	Tracy Howlett/Sanjay Prasad	
Organization and contact information:	Wood Buffalo Environmental Association/EMSD	
Date Study initiated:	April 2017	
Monitoring Category: (<i>From OSM long-term plan; choose from drop-down menu</i>)	Biotic Response Monitoring	
Strategic Objective of Focused Study: (<i>From OSM long-term plan; choose from drop-down menu</i>)	Objective F1: Potential Impacts on Ecosystem Components Valued by Indigenous communities	
Hypotheses: (<i>Briefly outline the specific hypotheses that your focused study is aiming to address</i>)	<p><i>Industrial development is having an impact on wetland plants and resources that are important to local Indigenous peoples. There is a community perception that medicinal and important plant resources are contaminated, or impure, and cannot be used for ceremony.</i></p> <p><i>Indigenous communities in the Athabasca and Peace oil sands regions have expressed concern about access to as well as abundance and quality of culturally important plant species in boreal wetland ecosystems. Wetlands are a significant resource for Indigenous peoples and support cultural and spiritual practices with their abundance of plant and animal life.</i></p> <p><i>There is a perception in Indigenous communities that oil sands development is causing contamination of important medicinal and</i></p>	

	<p><i>edible plants and that these important resources are no longer safe for use. By applying both Indigenous wisdom, in terms of qualitative evaluations of key species, as well as western scientific methods for assessing contamination, this study will result in a better understanding of perceptions of contamination of culturally important wetland plants.</i></p>
<p>Deliverables:</p> <p><i>What tangible goal (s) and/or product(s) will the monitoring produce and when?</i></p>	<p>Monitoring of culturally valued indicator species across the wood buffalo region.</p> <p>Year One</p> <ul style="list-style-type: none"> • Establish data sharing agreements and working protocols • Research cultural importance of wetland plants (interview, desk) • Identify key questions/concerns related to wetland plants (workshop) • Identify key indicator species (workshops and site visits) • Visit and select potential site locations (site visits) • Sample collection (potential) • Communication of results to community

Detailed Study Plan

(Please provide detailed information on the specifics of your focused study including – **(keywords, hypothesis and the assumptions and constraints behind your hypothesis)**)

Provide a maximum of 10 key words that describe this project. Use commas to separate them:

Indigenous, culture, medicinal, plant, wetland, important, traditional, contamination, perception,

Describe how you will test your hypothesis:

Background

Access to culturally important wetland plants is a key concern for Indigenous communities in the Oil Sands region. These concerns have been detailed in a variety of documents including the 2015 Review Panel Report for the Lower Athabasca Regional Plan where several First Nations expressed concerns regarding health of traditional food resources and the ability to continue to practice traditional uses along the Athabasca river main stem (LARP Review Panel, 2015). In 2016, the Wood Buffalo Environmental Association (WBEA) hosted a workshop to discuss matters of importance to local Indigenous communities located within the north eastern oil sands area (Wood Buffalo Environmental Association, 2016). This workshop focused heavily on wetlands and resulted in an inventory of species (including but not limited to: berries, spruce gum, rat root, cattails, grasses, willows, tamaracks, puffballs, special berry that grows in muskeg, herb tea, peppermint tea, heart medicine, Labrador tea, tree bark, moss), sites and key areas of concerns for the seven member communities. Additionally, the North Peace Tribal Council (NPTC) has repeatedly raised concerns about the impacts of dewatering on wetland health (BC Hydro Power and Authority, 2013). While the overall health of wetlands, and the primary effects of water withdrawals and atmospheric deposition in the oil sands region are being studied through the long term wetland study, the NPTC have also

raised concerns about specific wetland plant species. The concerns of the NPTC and the WBEA workshop results will provide the foundation for program design and will be validated in year one of this four year project.

Objective

The objective of this project is to apply a tested Indigenous and western science-based approach whereby traditional and local knowledge informs the design of a program for the monitoring and assessment of culturally important wetland plants in the Athabasca and Peace Oil Sands Regions.

Desired Outcome (end state)

The Alberta-Canada Oil Sands Monitoring program is collecting data and providing information related to questions of cultural and environmental relevance to Indigenous communities.

Approach

This project will apply the methodology that has been piloted through the Fort McKay Traditional Knowledge Berry Program which has been funded through JOSM since 2012. In year one, the project will involve Indigenous communities in the design and preliminary data collection associated with a wetland plant monitoring program. Participating Indigenous communities will assist with identification of key indicator species, site selection, plant collection, storage and shipment. Seven WBEA member communities (all members of the WBEA Traditional Knowledge Working Group (TKWG)) as well as five NPTC communities will be invited to participate and identify species and sites that are important to them. Where possible, where there is interest and as directed by First Nation and Metis members of both the WBEA TKWG and the NPTC, Indigenous Leadership will also participate in the design of this project and will be kept informed of project progress and outcomes.

*** Interest in participating in this project will be obtained during scoping activities which are being initiated and targeted for completion in 2016/2017. During this scoping stage community interest will be gauged and more detailed budget requirements will be identified.**

This project will be dovetailed with the long-term wetland monitoring program which will focus on the impacts of de-watering and atmospheric deposition. Where possible, indicators and sites that are selected for this project will be aligned within the greater wetland monitoring network.

Activities

- Community workshops and site visits to create a community-led study design (e.g., locally relevant questions, indicators, sampling sites etc.) including information sharing and identification of alignment with long term oil sands wetland health monitoring program.
- Capacity building – the training and equipment required to collect, store and ship samples. Evaluate whether existing standard operating protocols for plant collection and contaminant sampling can be adjusted or aligned with the community-led monitoring approach. Transfer protocols for decontamination or transfer of equipment between sampling sites

Year One (2017/2018)

- Establish data sharing agreements and working protocols
- Research cultural importance of wetland plants (interview, desk)
- Identify key questions/concerns related to wetland plants (workshop)
- Identify key indicator species (workshops and site visits)
- Visit and select potential site locations (site visits)
- Sample collection (potential)
- Communication of results to community

Year Two

- 13 communities (1-2 sites each) at 26 sites ('safe' site + 'contaminated' sites)
- Collection of samples at sites and testing for contamination (example data collection – leaf wetness, average temperature, precipitation, soil moisture, example tests – nutrient, mineral/metal content)
- Qualitative assessment of indicator species (abundance, aesthetics)
- Communication of results to community

Year Three

- 13 communities (1-2 sites each) at 26 sites ('safe' site + 'contaminated/reclaimed' sites)
- Collection of samples at sites and testing for contamination (example test -
- Qualitative assessment of indicator species (abundance, aesthetics)
- Communication of results to community

Year Four

- Program synthesis over three years
- Proposal for long-term study

Assumptions and Constraints behind the hypothesis and the testing method:

- The Fort McKay Elders and community will be willing to share their methodology with neighbouring or local communities.
- The research question from the communities is consistent across communities and articulated clearly.
- There will be interest in participation from other WBEA and NPTC member communities.

References:

BC Hydro Power and Authority. (2013). *SITE C CLEAN ENERGY PROJECT: VOLUME 5 APPENDIX A02 PART 1*.

LARP Review Panel. (2015). *Review Panel Report 2015: Lower Athabasca Regional Plan*. Retrieved from https://landuse.alberta.ca/LandUse%20Documents/Lower%20Athabasca%20Regional%20Plan%20Review%20Panel%20Recommendations_2016-06-22.pdf

Wood Buffalo Environmental Association. (2016). *Workshop Report: WBEA Traditional Knowledge Committee Community Workshop*. Wood Buffalo Environmental Association.

Data Management

If this work generates data please summarize your project-level data management plan.

Deliverables	Timeframe
Data Collection Period: <i>Field work</i>	Start : 2017-06-01 End: 2017-12-31
Data Analysis Period: <i>Laboratory analysis and QA/QC of data</i>	Start : 2017-08-01 End: 2017-12-31
Data Release Date: <i>Metadata and data consistent, complete and meet basic standard format for publication in Open Data; on or linked to JOSM portal</i>	2017-06-01

Reporting and Publications

Provide information on the anticipated reports / publications. (Insert additional rows if needed)

Expected Subject/Titles of Publications or Reports	Short Description of Publication or Report	Expected Year of Publication
Report on the importance of wetland plants to Indigenous groups in the Athabasca and Peace regions	A summary of research findings on the importance of wetland plants to Indigenous cultures in both the Athabasca and Peace regions	2018

Technical / Professional Roles and Responsibilities

Identify members of the monitoring team/organization, their roles and responsibilities. Identify monitoring organization leads if different from overall monitoring activity lead. (Insert additional rows if needed)

Role	Responsibilities	Resource Name/Organization
Program oversight	<ul style="list-style-type: none"> - Oversight on portfolio of JOSM Indigenous Monitoring and Science projects. - Identify and facilitate coordination/alignment between projects. 	Tracy Howlett - Alberta Environment and Parks
Principle investigator	<ul style="list-style-type: none"> - Coordinate Indigenous community involvement. - Coordinate involvement of scientific and technical experts. - Coordinate information product development (e.g., community reports). 	Contractor
Community liaison	<ul style="list-style-type: none"> - Act as a bridge between the community and professional/technical project staff. - Prioritize community involvement. - Facilitate information gathering to inform project design. - Advise on protocols related to Traditional Knowledge. 	Abena Twumasi-Smith - Wood Buffalo Environmental Association Michael Gubbels – Alberta Environment and Parks
Community Intern	<ul style="list-style-type: none"> - Support project coordination, support community participants 	To be hired through Internship program (in approval process)
Technical field staff	<ul style="list-style-type: none"> - Sample collection, handling, shipping 	Wood Buffalo Environmental Association
Scientific Expertise	<ul style="list-style-type: none"> - Professional and technical advice on methodology and research parameters - Technical analysis of toxicology results - Contribute to reporting products 	Eco toxicologist

Deliverables (Year 1) If your Focus Study is longer than 1 year then complete **Appendix 3** for multi-year deliverables breakdown

Provide a summary of tangible quarterly deliverables. Identify major project areas (deliverables) and results that can be identified as a tangible goal. This could include: field work, lab work/ analysis, evaluation, data, reports, publications, SOPs etc. Do not define process as your Deliverable e.g. 'fly to Ft. McMurray to conduct fieldwork' or 'seek Director approval for report'.



Deliverable(s) (please provide enough information to support status reporting)
Q1 – April to June
Successful execution of a community workshop (includes establishment and first spring meeting of project committee)
Preliminary interviews set up with community members to talk about wetland plant importance
Site tour to potential wetland study sites across the Athabasca and Peace regions
Q2 – July to September
Summer meeting of project committee
Interviews with community members on wetland plant importance
On-site safety and protocol training of select individuals from each community
Potential sampling at sample sites
Q3 – October to December
Reported results of a desktop study combined with interviews to ascertain the importance of wetland plants to Indigenous communities
Preliminary analysis of sample results
Fall meeting of project committee
Q4 – January to March
Complete analysis of sample results
Production of project report
Hosting of 4 community open houses to discuss project progress/next steps
Winter meeting of project committee

Detailed Financial Breakdown – Year 1 of 4 (2017-2018)

Also complete **Appendix 2** for the multi-year financial breakdown

Budget requirements – List areas that require budget expenditures: (ADD OR DELETE BUDGET CATEGORIES AS REQUIRED)	Year 1	
	OS Funding	External Funding (outside JOSM)
O&M - Operations and Maintenance:		
Facilities	\$ 4,000	\$
Field Costs	\$ -	\$
Data Management	\$ 3,200	\$
Internal Lab Analysis	\$ -	\$
Sub-Total	\$ 7,200	
O&M - Consumable Materials & Supplies		
Field Equipment	\$ 20,000	
Sub-Total	\$ 20,000	\$
O&M - Travel & Hosting		
Vehicle Costs	\$ 2,655	
Field Work	\$ -	\$
Conferences (ACOSM Symposium)	\$ 2,280	\$
Field Trip (Project Start – May)	\$ 820	\$
Community Open Houses (4 Community Centres)	\$ 6,000	
Committee Meetings (4 times – season)	\$ 3,200	
Sub-Total	\$ 14,955	\$
O&M - External Contracts :		
External Lab Analysis	\$ 48,000	\$
Training	\$ 3,000	
Sub-Total	\$ 51,000	\$
Salaries & Benefits:		
Principal Investigator	\$ 45,000	\$
Technical / Professional Assistants	\$ 35,000	\$
Support Staff	\$ 118,045	\$
Honoraria	\$ 61,300	
Sub-Total	\$ 259,345	\$
Dissemination & Engagement		
Publications/Reports	\$ 500	
Translation (if required)	\$ -	
Communications	\$ -	
Sub-Total	\$ 500	
2017-2018 GRAND TOTAL	\$ 353,000	\$

Appendix 1 - Approvals

Project Submitted by:		
Name:		
Organization:	Signature:	Date:
Project Approved by:		
Dr. Monique Dubé (AEP)		Dr. Kevin Cash (ECCC)
Signature		Signature
		
Date		Date

Budget requirements	Year 1 (2017- 2018)		Year 2 (2018- 2019)		Year 3 (2019- 2020)	
	Cash	In-kind	Cash	In-kind	Cash	In-kind
O&M - Operations and Maintenance:						
Facilities	\$ 4,000.00		\$ 4,000.00		\$ 4,000.00	
Field Costs	\$ -		\$ -		\$ -	
Data Management	\$ 3,200.00		\$ 3,200.00		\$ 3,200.00	
Internal Lab Analysis	\$ -		\$ -		\$ -	
O&M - Consumable Materials & Supplies						
Field Equipment	\$ 20,000.00		\$ 60,000.00		\$ -	
O&M - Travel & Hosting						
Vehicle Costs	\$ 2,655.00		\$ 1,626.00		\$ 1,626.00	
Field Work	\$ -		\$ -		\$ -	
Conferences (ACOSM Symposium)	\$ 2,280.00		\$ 2,280.00		\$ 2,280.00	
Field Trip (Project Start – May)	\$ 820.00					
Site Visits (up to 26 sites, 2 visits)			\$ 780.00		\$ 780.00	
Community Open Houses (4 Community Centres)	\$ 6,000.00		\$ 3,000.00		\$ 3,000.00	
Committee Meetings (4 times – season)	\$ 3,200.00		\$ 3,200.00		\$ 3,200.00	
O&M - External Contracts :						
External Lab Analysis	\$ 48,000.00		\$ 48,000.00		\$ 48,000.00	
Training[2]	\$ 3,000.00		\$ 1,000.00		\$ 1,000.00	
Salaries & Benefits:						
Principal Investigator	\$ 45,000.00		\$ 45,000.00		\$ 45,000.00	
Technical / Professional Assistants	\$ 35,000.00		\$ 35,000.00		\$ 35,000.00	
Support Staff	\$ 118,045.00		\$ 97,416.67		\$ 97,416.67	
Honoraria	\$ 61,300.00		\$ 61,300.00		\$ 61,300.00	
Dissemination & Engagement						
Publications/Reports	\$ 500.00		\$ -		\$ -	
Translation (if required)	\$ -		\$ 6,000.00		\$ 6,000.00	
Communications	\$ -		\$ -		\$ -	
Total	\$ 353,000.00	\$ -	\$ 371,802.67	\$ -	\$ 311,802.67	\$ -

APPENDIX 3 –Years 2 and 3 Deliverables (Complete the following detailed breakdown. Provide a summary of tangible quarterly deliverables. Identify major project areas (deliverables) and results that can be identified as a tangible goal.)

Year 2 (2018- 2019)
Deliverable(s) (please provide enough information to support status reporting)
Q1 – April to June
Spring project committee meeting
Early season site visits to 13-26 sites for sampling and observation
Translation of previous reporting to Cree or local languages
Q2 – July to September
Summer meeting of project committee
On-site safety and protocol training of select individuals from each community
Q3 – October to December
Fall season site visits to 13-26 sites for sampling and observation
Preliminary analysis of sample results
Fall meeting of project committee
Q4 – January to March
Complete analysis of sample results
Production of project report
Hosting of 4 community open houses to discuss project progress/next steps
Winter meeting of project committee

Year 3 (2019- 2020)
Deliverable(s) (please provide enough information to support status reporting)
Q1 – April to June
Spring project committee meeting
Early season site visits to 13-26 sites for sampling and observation
Translation of previous reporting to Cree or local languages
Q2 – July to September
Summer meeting of project committee
On-site safety and protocol training of select individuals from each community
Q3 – October to December
Fall season site visits to 13-26 sites for sampling and observation
Preliminary analysis of sample results
Fall meeting of project committee
Q4 – January to March
Complete analysis of sample results
Production of project report
Hosting of 4 community open houses to discuss project progress/next steps
Winter meeting of project committee