

2018-19 Work Plan Template

All fields with an * are mandatory

Project Description Summary			Co-Chair Decision
Date *	Project/Work Plan Identifier (if applicable)	Program Type and Strategic Alignment *	<p>* Decision Pool A: Workplan approved. * Approved at \$130,219</p> <p>* It is a requirement of funding that a status report be provided by December 2018 to the Oil Sands Monitoring Secretariat of project status including the general location of landings and conclusions regarding preferred habitat of whooping cranes.</p> <p>* Funding will end in 2018-19</p> <p>* Funding expectations: as a minimum a final report is required by March 31, 2019. All publications or products resulting from this work requires acknowledgement of funding from the Oil Sands Monitoring Program and are to be provided to the Oil Sands Monitoring Secretariat for tracking and any programmatic communications purposes. Work funded through the Oil Sands Program will be available for public dissemination.</p>
6/15/2018	B-LTM-E-2-1819	OSM - Focus Study	
Program Category *	Status *	Dept. ID	
Biodiversity, Land, Ecosystem Health Sciences	Existing Project		
Project Leadership / Contact information			
Project Title *	Key Words (max 10) *		
Quantifying risk from oil sands mining to endangered whooping cranes	Whooping crane, Aransas-Wood Buffalo population, species at risk, migration, oil sands, industrial sites, tailings ponds, risk, oiling, mortality.		
Surname *	Given Name *	Title *	
Bidwell	Mark	Wildlife Biologist	
Organization *	Department	Division	
ECCC			
Branch *	Section/Unit (if applicable)	Phone *	
CWS	Wildlife and Habitat Assessment Section / Terrestrial Unit	(306) 975-4688	
Email *	Mailing Address	City	
mark.bidwell@canada.ca	115 Perimeter Road	Saskatoon	
Postal Code	EMSD Executive Owner (If Applicable)		
S7N 0X4			
Project Information			
Project Objective(s) (Bullet Form) *	<p>(1) Describe general patterns of behaviour, movement and habitat use of whooping cranes in the oil sands region (OSR) during spring and fall migration;</p> <p>(2) If quality and quantity of stopover and landing habitat data are sufficient, create a habitat association model and a digital layer of suitable habitat for whooping crane use during migration, to serve as a decision-support tool for use by land managers and regulators;</p> <p>(3) Based on results of objectives #1 and #2, describe or quantify risk from oil sands mining to whooping cranes during migration through the OSR.</p>		
Plain Language Overview (100 words) *	<p>This study leverages information from baseline monitoring conducted via satellite telemetry of cranes during migration since 2010. We have three objectives. First, we will conduct spatial and statistical analyses to describe general patterns of behaviour, movement and habitat use of cranes in the OSR during spring and fall migration. Second, if quality and quantity of stopover and landing habitat data are sufficient, we will create a species-habitat association model and a digital layer of suitable habitat for crane use during migration, to serve as a decision support tool for use by land managers and regulators. Third, we will integrate results from the first two objectives to describe or quantify different components of risk from oil sands mining to cranes, in the context of a conceptual framework of risks to migratory birds in the OSR. To meet our objectives, we will use data obtained from cranes from 2010-17 (N=266 unique migrations) plus new data from cranes transmitting in spring and fall 2018.</p>		
Project Duration *	Project Original Start Date *	Estimated Completion Date *	
Multi-Year	4/1/2017	3/31/2019	
Specify Objectives This Project Will Address in 2018/2019. *	<p>(1) Status report by December 2018, including the general location of landings and conclusions regarding preferred habitat of whooping cranes. Analyses will incorporate all telemetry data since 2012 on landings and stopovers by cranes in the OSR.</p> <p>(2) Final report by March 2019, as a draft manuscript suitable for publication in a scientific journal, and describing behaviour, movement and habitat use/associations of whooping cranes in the OSR during spring and fall migration, quantifying risk from oil sands mining to cranes during migration, and containing the decision support tool (appendix).</p> <p>(3) Data used to create deliverables #1 and #2 on OSM portal, following publication of #2.</p>		
Specify Objectives This Project Will Address Beyond 2018/19 (if multi-year). *	N/A		
List Key Questions/Hypotheses Related to Each Objective Stated Above. *	<p>Oil sands mining constitutes a risk to whooping cranes during migration because:</p> <p>(H1) cranes are at risk of landing at industrial sites, such as tailings ponds;</p> <p>(H2) some industrial sites provide cranes with cues that are similar to natural habitats;</p> <p>(H3) landing at some industrial sites has deleterious consequences for individual cranes and/or the population.</p>		

Main Assumptions, Constraints, Dependencies. *	The creation of a habitat suitability model to serve as a decision support tool requires sufficient stopover and landing data of suitable quality to determine the classes of habitat selected for or against by cranes during migration in the OSR. This objective also requires the procurement or validation of remote sensing data (e.g., habitat classification) which will serve as inputs to the species-habitat association models.	
Partner Categories (select all that apply) * A partner is an individual, group, agency, community etc. that is an active participant in the project and in achieving the project deliverables.	Knowledge System *	Location (select all that apply) *
<input checked="" type="checkbox"/> Federal Government <input type="checkbox"/> Another AEP Division <input type="checkbox"/> Another GoA Department <input type="checkbox"/> University/Academic Institution <input type="checkbox"/> Solely delivered by GoA <input type="checkbox"/> Citizen Science <input type="checkbox"/> Indigenous Community or Organization <input type="checkbox"/> ENGO <input checked="" type="checkbox"/> Other	Classical Science	<input checked="" type="checkbox"/> Office or Laboratory <input checked="" type="checkbox"/> Sub-regional <input checked="" type="checkbox"/> Transboundary (provincial/territorial) <input type="checkbox"/> Lower Peace Region <input type="checkbox"/> Upper Peace Region <input checked="" type="checkbox"/> North Saskatchewan Region <input type="checkbox"/> Red Deer Region <input type="checkbox"/> Lower Athabasca Region <input checked="" type="checkbox"/> Upper Athabasca Region
AEP ONLY: Strategic Alignment to EMSD Outcomes		
AEP ONLY: Strategic Alignment to EMSD Science Plan, select 1-2 areas that apply (if Applicable)		
Choose one		
Choose one		
AEP ONLY: Strategic Alignment to AEP Departmental Outcomes		
AEP ONLY: Environmental and Ecosystem Health and Integrity	AEP ONLY: Sustainable Economic Diversity	AEP ONLY: Social Well-Being
Choose one	Choose one	Choose one
AEP ONLY: Protected Public Health and Safety from Environmental		
Choose one		
AEP ONLY: IMAG/IMSC Information Needs, Please Specify Which Need(s) is Being Addressed. File location M:\EMSD\Common\Portfolio Mgmt System Shared Docs		
AEP ONLY: How This Project Will Address Each Strategic Theme Selected Above.		
Project Methodology		
List the Key Project Phases and Provide Bullets for Each Major Task Under Each Project Phase. *	Phase 1: Describe general patterns of behaviour, movement and habitat use of whooping cranes in the oil sands region (OSR) during spring and fall migration Phase 2: Create a habitat association model and a digital layer of suitable habitat for whooping crane use during migration Phase 3: Describe or quantify risk from oil sands mining to whooping cranes during migration through the OSR.	
Describe How Changes in Environmental Condition Will Be Assessed. *	Assessment of the risk to whooping cranes from the oil sands mining operations, during their migration.	
Are There Benchmarks (e.g., objectives, tiers, triggers, limits, reference conditions, thresholds, etc.) Being Used to Assess Changes in Environmental Condition? If So, Please Describe, If Not, State "NONE". *	NONE	

<p>Provide a Brief Description of the Methods By Project Phase. *</p>	<p>Phase 1: For the first objective, we will investigate the timing of migration of whooping cranes in the OSR and MOSA during spring and fall migration, the proportion of cranes migrating through and landing in or stopping over in these regions, and general patterns of habitat use during landings and stopovers (e.g., dominant habitat types within fine and coarse scale buffers around landing or stopover locations). We will use standard spatial and statistical analytical methods to describe these patterns resulting in maps, tables and figures that we will present and discuss in a final report suitable for publication as a manuscript in a scientific journal.</p> <p>Phase 2: For the second objective, if data quality and quantity are sufficient, we will use spatial and statistical modeling to create species-habitat association models to determine the classes of habitat selected for or against by cranes during migration in the OSR. New methods have been developed for determination of species-habitat associations using presence-only occurrence data sources so, if suitable, we will use them to model habitat suitability for whooping cranes in the OSR. This objective will require procurement or validation of remote sensing data (e.g., habitat classification) which will serve as inputs to the species-habitat association models. Results of this work, including a decision support tool (e.g., digital layer of suitable habitat) will be included in the final report and manuscript containing results of the first objective.</p> <p>Phase 3: For the third objective, we will describe or quantify different components of risk from oil sands mining to cranes using a previously-developed conceptual framework of risks to migratory birds in the OSR. We will apply new knowledge about specific risks to cranes that was generated by this study to the conceptual models for migratory birds, including cranes, to generate overall conclusions about risk from oil sands mining/extraction to cranes. If our conclusions are sufficiently robust, we will make recommendations to reduce or mitigate risk to cranes. Results of this work will be included in the final report and, if suitable, in the manuscript for publication.</p>
<p>List the Key Indicators Measured. *</p>	<p>Risk to endangered whooping cranes from oil sands mining</p>
<p>Describe Sample Handling Procedures, if Not Applicable, State N/A. *</p>	<p>Sample handling procedures are provided in standard operating procedure documents available internally and by request.</p>
<p>List SOPs that Will Be Used, if Not Applicable, State N/A.*</p>	<p>Standard operating procedure documents available internally and by request.</p> <p>Further Standards and Protocols are available on the EMSD website: http://environmentalmonitoring.alberta.ca/resources/standards-and-protocols/</p>
<p>Describe the QA/QC Plan, if Not Applicable, State N/A. *</p>	<p>Quality assurance and quality control needs to be conducted in accordance with the SOPs for data QA/QC developed by ECCC, available internally and by request.</p>
<p>Describe How Indigenous Communities are Involved in the Project Design, Data Collection, and Analysis (Knowledge Co-creation) and How is their Consent Sought. If Not Applicable, State N/A.*</p>	<p>N/A</p>
Components Delivered by Others	
<p>List by Project or Project Phase Each Component That Will Be Delivered by An External Party (including analytical laboratories) and Name the Party. State None if Not Required. *</p>	<p>None</p>
<p>Will These Components be Delivered Under Grant or Contract or Both? Please Describe and Name the Associate Work Plan/Grant/Contract for These Services if Not Included Within This Work Plan. *</p>	<p>Not Required</p>
Monitoring Site Locations and Coordinates (for all sites, please add them to the Monitoring Site Location tab - a separate excel sheet)	
<p>Attach Map of Locations. Distinguish Indicators by Station if Necessary. Distinguish Sampling Frequency by Station if Necessary.</p>	<p>An interactive map of all sampling locations is available on the ECCC OSM portal at: http://environmental-maps.canada.ca/osm/App/index?GOCTemplateCulture=en-CA</p>
Project Schedule	
<p>FOR OIL SANDS MONITORING PROJECTS ONLY: A coordinated field monitoring schedule for the OSM Program is required. Please complete the attached document named "OSM Program Field Monitoring Schedule" in addition to this work plan. Fill as much as you can recognizing that scheduling changes will occur and the scheduling document will be updated regularly. Please note the scheduling document will be shared with stakeholders.</p>	<p>See Attached</p>

FOR OIL SANDS MONITORING PROJECTS ONLY: Have You Coordinated With Other Project Leads On Field Logistics? If So, Please Specify. *	N/A	
Other		
Additional Details.		
Will Capacity Building and Training be a Component of the Project and If So, Explain How. If Not, State N/A. *	N/A	
Environmental Impact and Considerations.	N/A	
Data Management and Digital Assets		
Will Data be Produced as a Result Of This Project? *	Type of Quantitative Data Variables	Frequency Of Collection
Yes	Discrete	Other
Data Collection Period: Date - End Date	Start	Timeline For Upload Period: Start Date - End Date
01/04/2017 to 30/11/2019		01/11/2017 to 31/03/2019
Is There a Data Sharing Agreement? (Yes or No).	No	
Will the Data Include Traditional Knowledge as Defined by and Provided by an Indigenous Representative, Community or Organization (Yes / No).	No	
Platform/Location of Data Storage.	Final data will be submitted to the appropriate data portal (primarily the Oil Sands Monitoring Data Portal). Results will be made available through publications in peer-reviewed literature.	
Project Deliverables		
Proposed 2018-19 Deliverable Type (for each deliverable outline document, presentation, meeting, etc.)		
<input type="checkbox"/> Peer-reviewed Journal Publication	<input type="checkbox"/> Peer-reviewed Conference Proceeding	<input checked="" type="checkbox"/> Non-peer reviewed Conference Proceeding/Technical Report
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
		Status report by December 2018
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
		Draft final report by 31 March 2019
<input type="checkbox"/> Conference Presentation(s)	<input type="checkbox"/> Stakeholder Presentation	<input type="checkbox"/> Key Engagement/Participation Meeting *
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.

Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Proposed Deliverables After 2018/2019 for the project funds received in 2018/2019		
<input checked="" type="checkbox"/> Peer-reviewed Journal Publication	<input type="checkbox"/> Peer-reviewed Conference Proceeding	<input checked="" type="checkbox"/> Non-peer reviewed Conference Proceeding/Technical Report
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Submitted manuscript in 2019/2020: "Behaviour, movement and habitat use/associations of endangered whooping cranes in the oil sands region of Canada".		Final report in 2019/2020
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
<input type="checkbox"/> Conference Presentation(s)	<input type="checkbox"/> Stakeholder Presentation	<input type="checkbox"/> Key Engagement/Participation Meeting *
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.

Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
All Completed Products		
if a multi-year project, specify all completed products to date (consistent format for the fields below). Add rows as required.		
Journal Paper		
Required Format: Author (follow APA citation format), Year, Title, Journal, Volume, Page Numbers, Open or Closed and Document Location		
Example: Jacoby, W. G. (1994). Public Attitudes Toward Government Spending. American Journal of Political Science, 38(2), 336-361.		
Fearon, J. D., & Laitin, D. D. (2003). Ethnicity, Insurgency, and Civil War. American Political Science Review, 97(01), 75. doi: 10.1017/S0003055403000534		
1)		
2)		
3)		
4)		
5)		
Technical Report		
Required Format: Author, Year, Title, Publisher Location, Name of Publisher, Publisher, Document Location		
Example: Author, F.M. (Publication Year). Title of Report (Report No. XXX). Publisher City, State: Publisher		
1) Bidwell, M. and J. Conkin. 2018. Monitoring of whooping cranes during migration through the oil sands region. 2017-2018 Annual Operational Report. Environment and Climate Change Canada.		
2) Bidwell, M., J. Conkin and J. Rempel. 2017. Monitoring of whooping cranes during migration through the oil sands region. 2016-2017 Annual Operational Report. Environment and Climate Change Canada.		
3)		
4)		
5)		
Book Chapter		
Required Format: Author, Year, Title of Paper, Editors, Title of Book, Page Numbers, Location of Publisher, Name of Publisher, Document Location		
Example: Hemingway, E. (1999). The Killers. In J. Updike & K. Kenison (Eds.), The Best American Short Stories of the Century (pp.78-80). Boston, MA: Houghton Mifflin)		
1)		
2)		
3)		
4)		
5)		
Conference Proceeding		
Required Format: Author, Year, Title of Paper, Editors, Title of Proceedings, Name of Conference Location of Conference, Publisher Location, Name of		
Example: Author of Paper, A., & Author of Paper, B. (Year, Month date). Title of Paper. In A. Editor, B. Editor, & C. Editor. Title of Published Proceedings. Paper Presented at Title of Conference: Subtitle of Conference, Location (inclusive page numbers). Place of Publication: Publisher.)		
1)		
2)		
3)		
4)		
5)		
Public Dissemination Document		
Required Format: Author, Year, Title, Journal / Report, Volume, Publisher, Page Number, Number of Pages, Document Location		
1)		
2)		
3)		
4)		
5)		
AEP ONLY: EMSD Strategic and Operational Publication		
Required Format: Author, Year, Title, Publisher Location, Name of Publisher, Publisher, Document Location		
1)		
2)		
3)		
4)		
5)		
Other Documents		
Detailed Information of Other Documents		

1)	
2)	
3)	
4)	
5)	
Conference Presentation	
Required Format: Presenter, Date, Location, Title, Platform or Poster, Conference Name	
1) Bidwell, M., J. Conkin, J. Rempel, G. Turney, and R. Wiacek. 23 November 2016, Calgary, Alberta. Monitoring movement, habitat use, and survival of endangered whooping cranes in the oil sands mining region. Oil Sands Science Symposium.	
2)	
3)	
4)	
5)	
Stakeholder Presentation	
Required Format: Presenter, Date, Location, Title, Platform or Poster, Name of Meeting	
1) Bidwell, M., J. Conkin and R. Wiacek. 26 October 2017. Quantifying risk from oil sands mining to endangered whooping cranes. Webinar Presentation to OSM Wetland Monitoring Integration Project.	
2) Bidwell, M., J. Conkin and R. Wiacek. 29 November 2017. Quantifying risk from oil sands mining to endangered whooping cranes. Presentation to Oil Sands Operators Bird Technical Committee.	
3)	
4)	
5)	
Key Engagement/Participation Meeting	
Required Format: Meeting Host, Date, Location	
1)	
2)	
3)	
4)	
5)	

Human Resources / Staffing Plan (roles and responsibilities)

Name & Role	Organization	Responsibilities
Principal Investigator	ECCC	Direct and implement the study; design, supervise and conduct analytical work; write reports and manuscripts; communicate with partners and others.
Wildlife Technician	ECCC	Collect, manage data; conduct spatial analyses or habitat validation; prepare maps, tables, figures and text for reports; provide additional support as required.

AEP ONLY: Additional Human Resources Required from EMSD			
Name & Role	Branch - Section	Estimated time (% of annual FTE)	Salary Estimate Range

Financial Details and Budget Request

Source of Funding Requested Year 1 - 2018/19			
	AEP ONLY: EMSD	OSM	
Salaries and Benefits		95944	
Operations and Maintenance		34275	
Consumable materials and supplies			
Conferences and meetings travel			
Field work travel			
Project-related travel			
Engagement			
Reporting			
External Contracts - Organization/Vendor/Suppliers			
Overhead			
Grants			
Capital			
Total budget request for the year	0	130219	Approved at: 130,219
Total budget approved			

Source of Funding Requested Year 2 - 2019/20			
	AEP ONLY: EMSD	OSM	
Salaries and Benefits			
Operations and Maintenance			
Consumable materials and supplies			

Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
Total budget request for the year	0	0
Total budget approved		

Source of Funding Requested Year 3 - 2020/21		
	AEP ONLY: EMSD	OSM
Salaries and Benefits		
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
Total budget request for the year	0	0
Total budget approved		

Source of Funding Requested Year 4 - 2021/22		
	AEP ONLY: EMSD	OSM
Salaries and Benefits		
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
Total budget request for the year	0	0
Total budget approved		

Budget Request for the Entire Project	0	130,219
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Project Approval(s)		
Proposal Submitted by		
Surname	Given Name	Organization
Song	Samantha	ECCC
Signature	Date	
Proposal for OSM Reviewed by		
EMSD Executive Director	Signature	Date
AEP Administrator/Coordinator - Review	Signature	Date
ECCC Administrator/Coordinator - Review	Signature	Date
OSM Project Approved by		
AEP Co-Lead for OSM	Signature	Date
ECCC Co-Lead for OSM	Signature	Date
AEP ONLY: Proposal for EMSD Reviewed by		
EMSD Director	Signature	Date
AEP ONLY: EMSD Project Approved by		
EMSD Executive Director	Signature	Date
EMSD Chief Scientist	Signature	Date

OSM / EMSD Project Has Not Been Approved		
Project Status	Date Notified	Date Required
The project is conditionally approved. The following conditions are required before approval is granted.		
List the Condition(s)		
Condition(s) Addressed / Approval Granted		
Choose one		
OSM / EMSD Approval Post Removal of Condition(s)		
Name & Title	Signature	Date

Add All Monitoring Site Locations and Coordinates (insert more rows if required)

Site Identifier *	Location Name *	Long/Lat *
Site 1 AB, NT and SK		Region bounded by (61.0° and -117.0°), (61.0° and -108.0°), (50.0° and -102.0°), and (50.0° and -110.0°)